

Battle Creek Regional Park

2021 Master Plan



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OVERVIEW

The purpose of the Battle Creek Regional Park Master Plan is to guide the long-term development, recreation and programming amenities, boundary expansion and acquisition, engagement, preservation, and management of Battle Creek Regional Park. Battle Creek Regional Park is 1,927.2 acres and is located in the southeast corner of Ramsey County. Battle Creek Regional Park is part of the Regional Parks System, supported by the Metropolitan Council in partnership with cities, counties, and special park districts that was established in 1974.

The Battle Creek Regional Park Master Plan will develop a long-range vision and recommendations for the park, built from input from the public and stakeholders. This was achieved by gathering information on issues and concerns from community members, stakeholders, engaging in design charrettes with the public, and ultimately refining a Master Plan that will guide future park improvements.

This master plan replaces and updates the 1981 Battle Creek Regional Park Joint Master Plan for Development. The 2021 Battle Creek Regional Park Master Plan is written to fulfill the requirements of the Metropolitan Council for regional park master plans as outlined in the 2040 Regional Parks Policy Plan.

The Pigs Eye Lake Master Plan Amendment has been developed to act as a separate natural resource guiding document for the Pigs Eye Lake Segment of Battle Creek Regional Park and is written to fulfill the requirements of the Metropolitan Council for regional park master plan amendments as outlined in the 2040 Regional Parks and Trails Policy Plan.

METROPOLITAN REGIONAL PARKS AND OPEN SPACE SYSTEM

Regional parks and trails are developed in the Twin Cities Metropolitan Area to preserve green space for wildlife habitat and provide a wide range of natural resource related recreational opportunities. Established in 1974, the Regional Parks and Open Space System is managed by the Metropolitan Council in partnership with cities, counties, and special park districts. While the operation of the system is the responsibility of cities, counties, and special park districts, the Metropolitan Council supports it with planning, funding, and advocacy. Each implementing agency, such as Ramsey County, is responsible for the development of a master plan for its regional park, regional trail, and open space components. In 2018 the metropolitan regional park and trail system included 56 regional parks and park preserves totaling more than 54,000 acres, nearly 400 miles of interconnected trails, and 8 special recreation features. The regional park system provides a wealth of opportunities for recreation, exercise, gatherings, and solitude. Our regional parks and park reserves also protect significant green space and wildlife habitat.

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Areas selected for regional parks should contain a diversity of nature-based resources, either naturally occurring or human-built. The recreational quality of a regional park is measured by the presence or absence of outstanding natural resources and the ability to provide adequately for a wide range of natural resource related recreational opportunities. Access to water bodies suitable for recreation such as swimming, boating, and fishing is particularly important and most of the regional parks are focused on lakes, rivers, or streams.

A regional park should be large enough to accommodate a variety of activities, preserve a pleasant natural aspect, and buffer activity areas from each other and from surrounding areas. This is interpreted as requiring 200 to 500 acres of land. Occasionally, because of the quality of the resource, an exception may be made, and a regional park may be as small as 100 acres.

Thrives regional vision includes five desired outcomes: stewardship, prosperity, equity, livability, and sustainability. While each outcome is described below, it is important to note that the five outcomes reinforce and support one another to produce greater benefits than any single outcome alone. The outcomes provide policy direction for the 2040 Regional Parks Policy Plan.

Stewardship

Stewardship advances the Council's longstanding mission of orderly and economical development by responsibly managing the region's natural and financial resources, and main strategic investments in our region's future. Stewardship means:

- Responsibly managing our region's finite resources, including natural resources – such as lakes, rivers, streams, wetlands, groundwater, high quality natural habitats, and agricultural soils – financial resources, and our existing investments in infrastructure.
- Pivoting from expanding to maintaining our region's wastewater and highway infrastructure.
- Leveraging transit investments with high expectations of land use

Prosperity

Prosperity is fostered by investments in infrastructure and amenities that make our region competitive in attracting and retaining successful businesses, a talented workforce, and strong economic opportunities. Regional economic competitiveness results from our strategic, long-term public and private decisions that build on and grow our region's economic strengths relative to other regions. Advancing prosperity includes:

- Fostering conditions for shared economic vitality by balancing major investments across the region
- Protecting natural resources that are the foundation of prosperity
- Planning for and investing in infrastructure, amenities, and quality of life needed for economic competitiveness
- Encouraging redevelopment and infill development

Equity

Equity means connecting all residents to opportunity and creates viable housing, transportation, and recreation options for people of all races, ethnicities, incomes, and abilities so that all communities share the opportunities and challenges of growth and change. For our region to reach its full economic potential, all our residents must be able to access opportunity. Our region is stronger when all people live in communities that provide opportunities for success, prosperity, and quality of life. Promoting equity includes:

- Using the council's influence and investments to build a more equitable region

- Creating real choices in where we live, how we travel, and where we recreate for all residents, across race, ethnicity, economic means, and ability
- Investing in a mix of housing affordability along the region's transit corridors
- Engaging a full cross-section of the community in decision-making

Livability

Livability focuses on the quality of our residents' lives and experiences in the region, and how places infrastructure create and enhance the quality of life that makes our region a great place to live. With abundant and beautiful open space, an active arts community, a range of housing options, and a reasonable cost of living, the Twin Cities region is widely recognized for its high quality of life. Enhancing livability means:

- Increasing access to nature and outdoor recreation through regional parks and trails
- Providing transportation choices for a range of demographic characteristics and economic means
- Supporting bicycle facilities to promote bicycling for transportation, recreation, and healthy lifestyles
- Aligning resources to support transit-oriented development and walkable places
- Promoting healthy communities and active living through land use, planning, and investments

Sustainability

Sustainability means protecting our regional vitality for generations to come by preserving our capacity to maintain and support our region's well-being and productivity over the long term. The region's investments in prosperity, equity, and livability will fall short over the long term if the region exhausts its resources without investing in the future. Planning for sustainability means:

- Promoting the wise use of water through expanding water conservation and reuse, increasing groundwater recharge, and optimizing surface water and groundwater use
- Providing leadership, information, and technical assistance to support local governments' consideration of climate change mitigation, adaptation, and resilience

Additionally, Thrive identifies the principles of integration, collaboration, and accountability to carry out the Council's work. These three principles reflect the Council's efforts to integrate policy areas, support local governments and regional partners, and promote and implement the Thrive regional vision.

Integration

Integration is the intentional combining of related activities to achieve more effective results and leveraging multiple policy tools to address complex regional challenges and opportunities. The Thrive outcomes described above are lofty ideals that cut across the Council's functions and responsibilities. Pursuing them demands that the Council use its full range of authorities and activities in more coordinated ways. Achieving integration involves moving beyond organizational silos and coordinating effectively with partners and stakeholders across and throughout the region.

Collaboration

Collaboration recognizes that shared efforts advance our region most effectively toward shared outcomes. Addressing the region's issues requires collaboration because no single entity has the capacity or authority to do the work alone. For the Council, acting collaboratively means being open to shared strategies, supportive partnerships,

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and reciprocal relationships. It also represents convening the region's best thinkers, experts, and stakeholders to address complex regional issues beyond the capacity or authority of any single jurisdiction or institution. Additionally, it involves providing technical assistance and enhanced information to support local planning and decision-making.

Accountability

For the Council, accountability includes a commitment to monitor and evaluate the effectiveness of our policies and practices toward achieving shared outcomes and a willingness to adjust course to improve performance. Acting accountably means: a) adopting a data-driven approach to measure progress, b) creating and learning from Thrive indicators, c) providing clear, easily accessible information, and d) fulfilling the Council's mission.

Thrive articulates a long-range vision for the region. The vision aims to foster and contribute to the five desired outcomes through the use of the three principles described above. While the focus in Thrive is on the overarching vision for the regions, Thrive provides direction for the 2040 Regional Parks Policy Plan. Thrive specifies that the Council will collaborate with the Metropolitan Parks and Open Space Commission, regional park implementing agencies, and state partners to:

- Expand the Regional Parks System to conserve, maintain, and connect natural resources identified as being of high quality or having regional importance, as identified in the 2040 Regional Parks Policy Plan.
- Provide a comprehensive regional park and trail system that preserves high-quality natural resources, increases climate resiliency, fosters healthy outcomes, connects communities, and enhances quality of life in the region
- Promote expanded multimodal access to regional parks, regional trails, and the transit network, where appropriate
- Strengthen equitable usage of regional parks and trails by all our region's residents across age, race, ethnicity, income, national origin, and ability

The Battle Creek Regional Park Master Plan supports the desired outcomes, principles, and additional directives for the 2040 Regional Parks Policy Plan.

RAMSEY COUNTY PARKS & RECREATION

Ramsey County is the most densely populated county in the State of Minnesota and the parks and open spaces held by Ramsey County Parks & Recreation represent the largest undeveloped land area in the county at nearly 8,000 acres. Within the system there are six regional parks, six regional trails, nine county parks, nine protected open spaces, five golf courses and numerous recreation facilities. Ramsey County Parks & Recreation works in cooperation with the Metropolitan Council, the National Park Service, Saint Paul Regional Water Services, the Minnesota Department of Natural Resources, its municipalities, and other government units to advance park, recreation, and leisure opportunities for all Ramsey County residents.

The vision of Ramsey County is "A vibrant community where all are valued and thrive," and the county mission is to provide "A county of excellence working with you to enhance our quality of life." The Ramsey County Parks & Recreation department follows this mission by preserving, developing, maintaining, and managing a system of parks, open space, trail corridors, and special use areas as well as providing year-round recreational programs, services, and facilities which are responsive to changing needs, compatible with the resource base, and most effectively provided at the county level.

Ramsey County Parks & Recreation supports the county vision and mission through:

Trail Services

Ramsey County Parks & Recreation coordinates the establishment of a Ramsey County trail network system that connects significant natural and cultural features and implements those segments of county or regional significance on Ramsey County and Open Space land.

Open Space Preservation

Ramsey County Parks & Recreation acquires, protects, and manages unique, fragile, and aesthetically attractive natural resources that contribute positively to the urban landscape, and perform critical natural functions.

Natural Interpretation

Ramsey County Parks & Recreation promotes positive environmental values through an increased awareness, knowledge, and appreciation of natural resources and natural processes.

Outdoor Recreation Programming

Ramsey County Parks & Recreation sponsors or co-sponsors recreation programs that encourage development of resource oriented outdoor recreation skills and promote wellness. Special events are also organized that introduce people to recreation opportunities available within the system.

Special Recreation Services

Ramsey County Parks & Recreation provides areas, facilities, and programs of significance county-wide to meet specialized indoor and outdoor recreation needs of Ramsey County residents.

Park Services

Ramsey County Parks & Recreation provides diverse and accessible areas and facilities primarily for self-directed Ramsey County oriented outdoor recreation that complements the natural features of the site.

Equitable Use

Ramsey County Parks & Recreation is working to strengthen equitable use of regional parks and trails, county parks, open spaces, along with other recreation facilities across all ages, races, ethnicities, incomes, national origins, and abilities.

PARK HISTORY

PRE-SETTLEMENT HISTORY AND THE LANDSCAPE

The landscape of Battle Creek Park is the result of climatic patterns, hydrology, and activities of human inhabitants of the region. The glaciers formed the topography and mineral soils of the region; climate also influenced vegetation composition and patterns after the glaciers retreated; water shaped the landforms and vegetation patterns; and humans made further alterations in vegetation, soils and topography to produce the current landscape. These basic factors will continue to govern the landscape of the park.

Most of the geologic features and soils of the park were formed by the actions of glaciers over the past 20,000 years (Wovcha et al, 1995). This portion of Ramsey County was affected by the Superior lobe of the late Wisconsin glaciation, which advanced southward from the Lake Superior basin. The Superior lobe scoured rock from the Lake Superior basin, ground it into gravel, sand and silt, and deposited it in this area along the melting margin of the glacier. As the glacier advanced and retreated several times, it formed a rugged moraine of sand and gravel till, the

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St. Croix Moraine complex. This till was reworked by weather and plants, forming coarse, droughty and relatively infertile soils in upland areas of Ramsey County, with deposits of clay and denser soils in low areas where water collected to form lakes and wetlands.

The topography, soils, and pattern of streams, lakes and wetlands that resulted from this glacial activity greatly influenced the pattern of vegetation communities that developed later. Existing plant communities in the park, such as dry oak forests and bluff savannas, are well-adapted to the climate, dry, erodable soils and rolling topography of the park.

Glacial meltwaters that pooled in the Red River Valley flowed south, as the Glacial River Warren, which cut deeply through glacial deposits and bedrock sedimentary layers formed 500 million years ago, to form the Mississippi River valley and bluffs. Tributary streams like Battle Creek also cut down through these St. Peter Sandstone deposits, forming steep side channels, and depositing sediment in the Mississippi Valley. Since the formation of river valleys and lakes about 10,000 years ago, the geologic landscape has changed little- the Mississippi Valley has filled gradually with sediment, and lakes and wetlands have gradually filled with dead plant material or sediments eroded from surrounding uplands.

Immediately after the melting of the glaciers, spruce trees and tundra plants developed around the margins of glaciers, followed by pine barrens and forests with a bracken fern understory. As the climate warmed about 9,000 years ago, pines began to decline, and prairie herbs increased, along with elm and oak forests. The climate continued to warm until about 7,000 years ago, when midgrass prairie reached its maximum extent in Minnesota and covered most of the Twin Cities region.

Prairie and oak woodlands dominated the region until about 4,000 years ago, when the climate became cooler and moister. Oak thickets spread, and oak woodland-brushland gradually dominated upland areas, interspersed with marshes and wet prairies. White pines also migrated into this region as the climate cooled. About 300 years ago, the climate became especially moist and cool, and extensive forests of elm, sugar maple, and basswood developed in eastern Minnesota. The major patterns of vegetation of the Twin Cities area at the time of European settlement were then in place.

The history of American Indians and their influence on the local landscape are still evolving. American Indians have probably inhabited and hunted in the area for about 10,000 years. In addition to using a wide variety of plants and animals for food, American Indians altered the landscape and vegetation patterns by cultivation and by setting fire to vegetation. The Indians (and European fur traders) used fire to hunt game, create desired game habitat, to clear the landscape for travel, communication, and defense, and to obtain firewood. While some fires in the region occurred naturally, the activities of American Indians probably greatly increased the frequency of fires. Prairies near the Mississippi River may have been burned annually. Prairies and savannas are fire-dependent plant communities, and would most likely not have been present in the Twin Cities area at the time of European settlement without these fires. (Wovcha, 1995)

At the time of settlement, then, the landscape of Battle Creek Park probably included emergent wetlands, wet meadows, and prairies in low areas; oak woodlands and brushlands and sand/gravel savannas on drier uplands and bluffs; and denser forests of mixed species on cooler slopes that were not burned. Aerial photos from 1940's indicate that some oak woodlands in the park were once much more open than they are today, perhaps due to regular fires before European settlement, and grazing in the early part of this century. Pigs eye lake was more of a closed water body wetland with more vegetation prior.

As the St. Paul area developed after the mid-1800's, more intensive human activities began to change the landscape and natural communities. These alterations included the following:

- Road building began to clear and fragment forests and other communities, for example, dividing sections of the bluff lands from each other, and separating Mississippi River floodplain from upland areas and habitats, as they are today.

- Agriculture affected hydrology by draining wetlands and altering creeks. Within Battle Creek Park, farming also altered vegetation communities through clearing, plowing, cessation of regular fires, and grazing. These effects can be seen in the reduction of native vegetation in meadow and forest understory areas, and substitution of communities of lower diversity and dominated by non-native plants, such as smooth brome. Soil erosion increased where native cover was removed, adding sediment to creeks, wetlands and lakes.
- Urbanization fragmented natural communities further with the addition of more roads, streets and utilities. Construction of all types altered and compacted soils, and changed the local hydrology. Large areas of impervious surface and drainage of wetlands increased the amount of stormwater runoff and pollutants carried to local waters. Additional non-native, aggressive species like buckthorn were added as landscape materials.
- The development of the upper watershed of Battle Creek caused dramatic flooding and bluff erosion, and eventually led to major alterations to the creek and its floodplain to control flood damages.
- Changes in habitat and increasing presence of humans in the landscape brought changes in animals populations, decreasing or eliminated some species like eagles and bluebirds, favoring others such as white-tail deer and cardinals.
- The extensive lock and dam system built along the Mississippi river forever changed backwater wetlands, like what is now Pig's Eye lake, by altering the river levels.

History of the Park and Surrounding Area

In the mid-1800's, when European settlers were arriving in St. Paul, the area now called Battle Creek park was known as "Pine Coulie", named for the white pines around the creek. A battle between the Chippewa and Sioux that occurred in Pine Coulie in 1842 was remembered later when creek and park were named "Battle Creek." Early settlers reported that the Sioux village at Kaposia (South St. Paul) had a small farm plot at Pine Coulie, and white settlers were already farming near Pigs Eye lake in the 1840's. Local histories report little additional information about the park until 1914.

In 1914, Dietrich Lange, the superintendent of St. Paul schools, suggested that Pine Coulie be acquired as a park. He noted that "The creek, Battle Creek, is the most limpid one imaginable, threading its shining way through a maze of fern and mossy stones, and making here, a waterfall, and there a placid pool, reflecting the deep blue of the sky. The creek is fed by ice cold, crystal clear springs. The water flows between green banks covered with a soft carpet of moss."

Lange also noted that the park included pine trees, which accounted for the name "Pine Coulie", but also had "the biggest variety of trees in any spot in the state. Tall pine, spruce, elm, maple, oak, basswood, cottonwood, willow, birch, and other trees that grow there abundantly, along with many varieties of shrubs." By 1921, however, this had changed--a team of surveyors working in the area noted that the trees around the creek had been cut back for a distance of 100 feet.

The first thirty acres of the park were donated to the city of St. Paul in 1922 by William McMurray, a St. Paul businessman, who purchased the acres around the creek a few months before in order to donate the area to the city as a park. McMurray suggested the name "Battle Creek Park". The city had also surveyed the 65 acres on the tops of the bluffs as potential parkland. McMurray later talked with other landowners near the park and suggested that they donate property for the park. In 1924, the city purchased an additional 34 acres from 5 landowners. By 1928, the city had constructed a caretaker's cottage, lights, parking spaces, a steel bridge and two dams in the Park. In 1941, 5,000 conifers were planted to reforest the creek area, including 500 white cedar, 1000 jack pines, 1500 Norway pines, and 2000 white pines from Northern Minnesota. By 1947, the St. Paul Pioneer press noted that erosion and vandalism were becoming major maintenance problems for the park.

Ramsey County made additional land purchases for the park in the 1950's and has continued to purchase land up to the present.

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Much of the eastern side of St. Paul, including the area around Battle Creek Park, was in agricultural uses through World War II, including dairy farms, truck farms, and some croplands. The scattered farm homes and older homes in neighborhoods near Battle Creek Park are evidence of this era. The eastern side of St. Paul was much slower to develop urban land uses than the areas west of downtown. In part, this is due to steeper slopes and wetland areas that made this area more difficult to develop. Western areas of the city also developed faster due to the influence of transportation connections and economic activity in the Minneapolis and Midway areas. Most of the residential areas, schools, and commercial areas that dominate neighborhoods adjacent to the park today developed in the 1960's and later. Wooded areas along the bluffs in the Highwood neighborhood of St. Paul south of the park and in Maplewood are still being developed with new homes.

Prior to acquisition and development of the park, land use within the park boundaries was primarily agricultural. Uses included grazing, cropping, truck farming, and farm residences. (See map of Prior Land Uses on the following page.) Eastern portions of the park were part of the Ramsey County Work Farm. Aerial photos of the park from 1945 show an area dominated by agricultural uses with some scattered residences, existing parkland along Battle Creek, and generally more open woodlands and bluff areas than the current park landscape.

Northeastern portions of the park, including oak forest areas and the current picnic grounds, were formerly part of the Ramsey County Work Farm. The flat portions of this area were used for crops, pasture, and buildings. Old foundations and trash dumps were found in these areas when the creek and ponds were modified in the 1980's. Areas near the corner of Upper Afton Road and McKnight Road were briefly used for community garden plots in the 1970's. The steep, wooded areas may have been used for grazing, but have not been altered in other ways. Informal picnicking areas with a gravel parking lot were developed in the open areas in the 1960's, with current buildings and other improvements completed from 1984-85.

Most of the southeast area of the park was also part of the County Work Farm. Some lots in the southeast corner, lots along Upper Afton Road, and a 40-acre parcel at Upper Afton and McKnight were in private ownership until the 1980's, when they were purchased by the County. The "Jordan 40" and other private lots were in agricultural uses such as cropping, grazing, and farm buildings, but zoned for future commercial use. The County purchased these properties in the early 1980's and removed most of the buildings, though foundations and some fences remain. In the southeast corner, two lots are still in private ownership but undeveloped.

The open meadow southeast of Ruth Street and a strip of land along Lower Afton Road were also part of the County Work Farm and probably used for grazing. This area became part of Battle Creek Park before 1970.

Portions of the large woodland areas of the park east of McKnight Road and Battle Creek Road were once much more open than they are today, with wider spaces between canopy trees and an understory of grasses and herbaceous plant cover. These areas were part of the County Work Farm or private farms, and were probably used for grazing or as woodlots, with some scattered farm residences adjacent to the woodlands along roads. The City and County also owned undeveloped portions of the Creek corridor that connect the east and west areas of the park. City ownership was transferred to the County along with the lower portions of the creek corridor and bluffs.

The oak woodland and meadow areas between Ruth Street and Battle Creek Road included some property owned by the City of St. Paul and some private residential properties along Battle Creek Road. The woods were used for grazing. The old field area west of Battle Creek Road was used as a truck farm. The north end of this area was planted as a tree nursery by the city and county in the 1970's, with some nursery stock still visible adjacent to the woods today. The County purchased properties in this area between 1972 and the present. The wetland depression in the open field area was formed when soil was taken for use in the Battle Creek flood control project. While it supports wetland vegetation now, it was a dry meadow similar to surrounding areas before soil removal activities.

As noted previously, the Battle Creek corridor and portions of the bluffs from Upper Afton Road to Highway 61 were owned by the City of St. Paul after 1922 and used as a park. The areas included a popular ski jump, picnic areas and shelters, and other park buildings. As the upper portion of the creek's watershed developed during this century, this area began to flood regularly from increased storm runoff. This flooding eroded the bluffs, washed out park buildings, and closed the park in 1971. In the early 1980's, the Ramsey-Washington Metro Watershed District

completed a flood control project that put most of the creek flow underground, retained a managed flow above ground, and installed a series of stepped falls and bridges. St. Paul then exchanged the land around the Creek with the County for park lands in the Lilydale and Pigs Eye areas. Ramsey County installed the existing parking lot and trail near Highway 61 in 1991.

The County has gradually acquired private properties along what is now Park Entrance road and Point Douglas road to the north, since 1972. After 1996 the three homes in private use remaining along these roads were purchased, removed and converted to parkland. Since this time Point Douglas road has been an unserviced road with a lock gated access off of Highway 61, beyond the gate is a MET council lift station and a 9.82 acre parcel owned by the Minnesota Department of Transportation in the southwest corner. The Minnesota Department of Transportation also owns the land south of this parcel, between Park Entrance road and Highway 61. Ramsey county parkland abuts the road north along Point Douglas road. Northwest of county parkland the City of St. Paul owns an almost 4-acre parcel of parkland that adjoins the Minnesota Department of Transportation's historic Highway 61 overlook land. This overlook serves as an unofficial entrance to Battle Creek park for hikers and off-road cyclists. Since Point Douglas road has been abandoned it is slowly degrading over time, although live overhead utilities still run along the road. Two areas along Point Douglas road and two area along Park Entrance road were used as borrow pits during road construction of Highway 61. The County restored more gentle slopes and planted these areas in the 1970's with non-native seed mixes.

The City of St. Paul and Ramsey County have purchased numerous vacant residential lots along the bluffs between Battle Creek Park and Fish Creek. The plan is to purchase additional properties within this area to preserve the bluff line from development.

Pigs Eye Lake is located in a heavily industrialized area, close to the Metro Plant and other major air emissions sources. The land use designation for the metro plant and surrounding parcels is industrial, consistent with this designation noise, odors, emissions and traffic are present at levels that are consistent with industrial land use. The Pigs Eye Landfill has contributed to the presence of hazardous, toxic and radioactive wastes in and surrounding Pigs Eye Lake. The Pigs Eye Lake Master Plan amendment provides further details on the contamination and proposed next steps in that area for natural resource and public safety planning in the Pigs Eye Lake segment of the park. Ramsey County is committed to working closely with neighboring landowners to create a compatible vision for the future of the Pigs Eye Lake segment of Battle Creek Regional Park.

CITIZEN PARTICIPATION AND MUNICIPAL SUPPORT

The development of Battle Creek Regional Park has been evolving since 1974 when the state legislature established the Regional Parks System and Battle Creek Regional park was incorporated into the system. The original master plan for Battle Creek Regional Park was a joint effort between Ramsey County and the city of Saint Paul in 1981. Within the 1981 master plan several key development details were discussed including:

- A group picnic area northwest of the intersection of McKnight Road and Upper Afton Road
- Swimming area
- Trail head and picnic area southeast of the intersection of McKnight Road and Upper Afton Road
- A winter sports area located in the segment of Battle Creek Regional Park bounded by Upper Afton Road, Lower Afton Road, Winthrop Street and Battle Creek Road
- A bluff picnic area located in the segment of Battle Creek Regional Park between Highway 61 and Battle Creek Road
- A trail head/visitor center located on the bluff between Highway 61 and Battle Creek Road
- A lower creek picnic area located in the segment of Battle Creek Regional Park Between Highway 61 and Battle Creek Road with access from Lower Afton Road
- Pigs Eye Lake development
 - Additional planning would need to be done
 - Trail development through accessible areas
 - Pedestrian Bridge over Highway 61 and the railroad

Planning Framework

In the time since the original master plan was developed for the park other plans have been developed which add context and have helped guide the development of the park as well as this master plan including:

- Ramsey County Off-Leash Dog Areas Master Plan
- Ramsey County Off-Road Cycling Master Plan
- The Great River Passage Master Plan
- Pigs Eye Lake Master Plan Amendment (See Pigs Eye Lake Master Plan Amendment for more detail)
- 2018 Ramsey County Parks & Recreation System Plan
- Green Spaces, Green Places An Energy Action Plan for Ramsey County Parks & Recreation
- 2016 Fish Creek Open Space Concept Plan, coordinated along with the city of Maplewood
- Suburban Pond Open Space Concept Plan
- Point Douglass Road Regional Trail Master Plan

Goals of Communications and Public Engagement

In the Spring of 2019 Ramsey County Parks & Recreation began the process of developing a new master plan for Battle Creek Regional Park. To aid the county in the master planning effort SRF Consulting was contracted as a team member whose primary responsibility was to guide the public engagement phase. Based upon initial project discussions during the kickoff meeting, and an analysis of park stakeholders, it is recommended that this project engage in a “collaborate” level of engagement as described in the IAP2 spectrum of public engagement. At this level, the project team will partner with the public on key aspects, including identifying issues and needs, determining alternative options, and providing guidance on preferred alternative plans. Overall, the broad goals of our engagement approach are to:

- Work directly with the public throughout the process to ensure there is transparency and consistent communication of project information.
- Use an equity lens in amplifying the voices of communities traditionally left out of planning processes, including immigrants, people of color, LGBTQ communities, youth, and the elderly.
- Connect with a broad cross section of community stakeholders to provide ideas, guidance, and feedback.
- Deploy a defined communications and messaging strategy.

Communications and Public Involvement Strategy Overview

Transparent, efficient and equitable public engagement and communications will be achieved throughout the master planning process with the deployment of two key strategies – Consistent Communication and Tailored Involvement. Utilizing these strategies throughout all phases of the project will ensure a smooth public process that meets the overall goals of the project.

Strategy 1: Consistent Communication

Consistent updates and opportunities for feedback will be used to keep the public informed and identify concerns and issues from an early point in the project. Community websites, newsletters, and other print, online and in-person communications will provide clear explanations of the project need, project timeline, and project impacts. Similar engagement methods will be used throughout the process to equip individuals with project information in a consistent format.

Strategy 2: Tailored Involvement

Tailored involvement is necessary to connect with project stakeholder groups using methods and locations that work best for them. There will be a different approach for connecting with stakeholder agencies and organizations than there will be – for example - in connecting with recreational interest groups, passive park users, or the general public.

Agency Involvement

Stakeholder agencies will be the key decision makers throughout the master planning process and will be primarily involved through the Project Management Team. The Project Management Team (PMT) is the decision-making body for the project. The Project Management Team helped guide the master planning effort, providing recommendations for approaches and decisions at key project points. Project Management Team members also participated in public meetings as needed.

Communications Plan

The Communications Plan is a living document that provides a road map for how and when all external project communications will occur.

Key Messaging Areas

Throughout the planning process, there are seven key messaging areas that should be specifically shared with the public. Communication efforts will ensure that the public is aware of the following components:

- Project need
- Getting involved in the planning process
- Project status, schedule, and other housekeeping items
- Design charrette goals & objectives
- Community impacts
- Opportunities for engagement and feedback
- Process (Issues and concerns engagement, Design Charrettes, Concept Graphic Review)

Public Communications

To ensure impactful, cost-effective, and swift dissemination of information, the team will use the existing communication tools of Ramsey County, with support from the cities of Saint Paul and Maplewood. Communications tools include:

- Ramsey County Project Website
- Newsletters
- Mail
- Social Media platforms
 - Recreation groups were also encouraged to share information through their social media channels.
- In Park Posters
 - Poster boards were laminated and posted at all park entrances announcing when major meetings were taking place along with information regarding the project website to encourage community members to stay involved
- In-person engagement events
 - Pop-up engagement
 - At-Large meetings
 - Design charrettes

The project team worked with communications staff from each of the partner agencies to provide project updates and information.

In addition, community partners have their own communication outlets. Leveraging relationships with community organizations to spread the word to their members, clients, and audience is another low-cost, minimal-effort opportunity to reach the public.

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At certain points in the project, especially prior to public events, the project team reached out to local media outlets to earn media coverage. Ramsey County produced a press release prior to each large public event for distribution to the following local media and for project partners to share.

Local Media Outlets

Outlet	Type
Asian American Press	Newspaper/Website
East Side Review	Newspaper/Website
City of Saint Paul Website/Newsletters	Municipal
Ramsey County Project Page	County
KSTP, WCCO	Regional Television
Star Tribune	Newspaper/Website
Pioneer Press/TwinCities.com	Newspaper/Website
Facebook, Twitter, Instagram	Social Media

Social Media

Ramsey County, the City of Saint Paul, and the City of Maplewood already have established collective audiences through their social media channels. Using these outlets (Facebook and Twitter) helped to share timely information and increase awareness about the project with local and regional audiences.

SRF assisted project management team staff in creating social media content to share key messages, promote upcoming engagement events, and direct users to the project website for additional information. Social media content included a balance of graphics and text, making it easy to understand as well as visually appealing.

Outreach Methodology and Tools

A variety of methods and tools were employed to involve the public in the Battle Creek Regional Park Master Plan. These methods and tools were tailored in ways to ensure that a wide variety of community members and stakeholders were able to connect with the planning process.

Stakeholder Meetings

Stakeholder meetings were planned events that connected with specific community groups. The purpose of stakeholder meetings is to connect deeply with a variety of communities who have perspectives on the future of Battle Creek Regional Park.

Pop-Up Engagement Meetings

Pop-Up meetings were held at locations and events where people were already going. Locations for potential pop-ups included Battle Creek Park as well as other local event locations like the Ramsey County Fair.

At-Large Meetings

These meetings allowed the community an opportunity to identify issues, discuss project materials with project team members, and be informed regarding next steps. They were formatted in an accessible, collaborative manner as determined by the Project Management Team.

Design Charrette

The design charrette was open to the public and included opportunities for ideation, creativity, and collaboration.

Virtual Design Charrette

A virtual design charrette and concept overview was provided in lieu of a second open house design charrette due to the Coronavirus Pandemic. Members of the public, stakeholder groups, recreation clubs, project management team members, and anyone interested in the master plan were invited to attend and give feedback on concept graphics for the regional park.

Website and Online Involvement

Online engagement activities were impactful ways to find deep connections with community members. These opportunities augmented other in-person activities and provided an opportunity to provide specific comments. Online engagement tools included:

- **Project Website:** The project website was the primary repository of public-facing project information and opportunities for staying involved.
- **Social Media Updates:** Social media updates were provided at key points in the project process to keep the community apprised of milestones.
- **Wikimap:** A wikimap provided a platform for community members to identify specific issues, hopes, and concerns at key points within the park on an easy-to-use dynamic mapping platform.
- **Online Surveys:** Multiple online surveys were provided for community members to be involved and directly comment on the master plan as concepts progressed. These surveys were also an impactful tool for community members who were unable to attend in person events.

Summary of Public Engagement and Outreach Tools

Pop-Up Engagement Meetings

Hmongtown Marketplace

Ramsey County staff attended and hosted an informational kiosk at the Hmongtown Festival on Como Avenue in Saint Paul to gather initial feedback for the Battle Creek Master Plan. Ramsey County Parks & Recreation was interested in learning what types of amenities, programming, or other features community members were interested in. Ramsey County also sought out information on how people currently use the park, what attracts them to the park, and in the case that they had not visited Battle Creek Regional Park what may lead them to visiting in the future. Ramsey County also took any comments or concerns relating to the park that the community was interested in sharing. To gather feedback a number of voting boards and comment cards were provided. A summary of results can be found in the appendix. The responses gathered came from a diverse audience in age, race, and gender.

Overall the most popular types of programming included nature education, beginner outdoor recreation programs such as off-road cycling and cross country skiing, summer camps and community events and/or festivals. A majority of respondents would like to see a free splash pad located at Battle Creek Regional Park.

Ramsey County Fair

Ramsey County staff attended and hosted an informational kiosk at the Ramsey County Fair located on the Parks & Recreation campus at the corner of Frost and White Bear Avenue in Maplewood. Ramsey County Parks & Recreation was interested in learning what types of amenities, programming, or other features community members were

Planning Framework

interested in. Ramsey County also sought out information on how people currently use the park, what attracts them to the park, and in the case that they had not visited Battle Creek what may lead them to visiting in the future. Ramsey County also took any comments or concerns relating to the park that the community was interested in sharing. To gather feedback a number of voting boards and comment cards were provided. A summary of results can be found in the appendix. The responses gathered came from a diverse audience in age, race, and gender.

The most popular types of programming included nature education, after school classes such as fishing, skiing and biking, summer camps and community festivals. Respondents at the Ramsey County Fair indicated a desire for the development of a nature center, a splash pad and archery range.

Battle Creek Pavilion Eritrean Muslim Council Event

Ramsey County staff attended and hosted an informational kiosk at an event hosted by the Eritrean Muslim Council with permission located at the Battle Creek Pavilion north of Lower Afton Road. Ramsey County Parks & Recreation was interested in learning what types of amenities, programming, or other features community members were interested in. Ramsey County also sought out information on how people currently use the park, what attracts them to the park, and in the case that they had not visited Battle Creek what may lead them to visiting in the future. Ramsey County also took any comments or concerns relating to the park that the community was interested in sharing. To gather feedback a number of voting boards and comment cards were provided. A summary of results can be found in the appendix. The responses gathered came from a majority black demographic with a wide range of ages present.

The most popular types of programming included art education, summer camps and community events and/or festivals. The respondents indicated a strong desire to see the development of a splash pad.

Battle Creek Waterworks

Ramsey County staff attended and hosted an informational kiosk at Waterworks in Battle Creek Regional Park. Ramsey County Parks & Recreation was interested in learning what types of amenities, programming, or other features community members were interested in. Ramsey County also sought out information on how people currently use the park, and what attracts them to the park. Ramsey County also took any comments or concerns relating to the park that the community was interested in sharing. To gather feedback a number of voting boards and comment cards were provided. A summary of results can be found in the appendix. Responses were limited as less than ideal weather kept many people from visiting Battle Creek Regional Park that day.

Most respondents indicated the need for the rehabilitation of Waterworks or the development of a splash pad.

Southeast Community Organization Community Event

Ramsey County staff attended and hosted an informational kiosk at an event at Highwood Hills Elementary School hosted by the Southeast Community Organization located on Londin Lane East. Ramsey County Parks & Recreation was interested in learning what types of amenities, programming, or other features community members were interested in. Ramsey County also sought out information on how people currently use the park, what attracts them to the park, and in the case that they had not visited Battle Creek what may lead them to visiting in the future. Ramsey County also took any comments or concerns relating to the park that the community was interested in sharing. To gather feedback a number of voting boards and comment cards were provided. A summary of results can be found in the appendix. The responses gathered came from a diverse audience in age, race, and gender.

Responses were varied but the most interest was in the development of a splash pad and more programming available for youth in Battle Creek Regional Park.

Battle Creek Recreation Center Food Shelf Event

Ramsey County staff attended and hosted an informational kiosk at Battle Creek Recreation Center during a food shelf event. The county was interested in learning what types of amenities, programming, or other features community members were interested in. Ramsey County also sought out information on how people currently use the park, what attracts them to the park, and in the case that they had not visited Battle Creek what may lead them to visiting in the future. Ramsey County also took any comments or concerns relating to the park that the community was interested in sharing. To gather feedback a number of voting boards and comment cards were provided. Example boards can be found in the appendix. The responses gathered came from a diverse audience in race, and gender.

The greatest concern was that Battle Creek Regional Park remain free of any type of admission cost to the public. General maintenance and a greater availability of restrooms and water were also indicated as a need.

Community and Stakeholder Meetings

Battle Creek Recreation Stakeholder Meeting

Ramsey County hosted the recreation stakeholder meeting to gather information and feedback from existing groups that are invested in Battle Creek Regional Park. Many community members representing different interests attended including off leash dog area users, off-road cyclists, running groups, cross country ski teams, hikers and other interested parties shared their views. The county was interested in learning what types of amenities, programming, or other features community members were interested in. Ramsey County also sought out information on how people currently use the park, what attracts them to the park, and in the case that they had not visited Battle Creek Regional Park what may lead them to visiting in the future. Ramsey County also took any comments or concerns relating to the park that the community was interested in sharing. To gather feedback a number of voting boards and comment cards were provided. Example boards can be found in the appendix. The responses gathered came from a predominantly white, middle to late age group of respondents.

Respondents were most interested in the expansion of existing infrastructure such as cross country ski/grass mowed walking trails, off road cycling/hiking trails and the future development of the off leash dog area. Community members shared their thoughts on how these recreation amenities can continue to co-exist. The development of the winter recreation area and how Ramsey County would fund that infrastructure was also frequently mentioned.

Environmental Stakeholders Meeting

Ramsey County invited members of the community and representatives of other government agencies that had an interest in the environmental protection and preservation of Battle Creek Regional Park to share their thoughts on the future of the park. The county also sought feedback regarding the concept development and what amenities or features they thought would be warranted in the development of the park.

Participants indicated the desire for further water and creek protection within the park which could also include community education, focusing on homes in the area whose land contributes to the Battle Creek Sub-Watershed. Interpretive signage and educational opportunities were also strongly desired.

Southeast Community Organization Council Meeting

Ramsey County presented information from community engagement as well as park concepts with the Southeast Community Organization Council at their meeting held on Monday February 24, 2020. The county wanted to gather their feedback on both the process and what they thought was important in the development of the park.

Safe access was an important issue, Battle Creek Regional Park is a highly segmented area with major road intersections that can be difficult to cross. Expanded programming especially for community youth was also desired. Overall the council was interested and supportive of the improvements being proposed.

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Carver Elementary Family Night

Ramsey County staff attended the Carver Elementary School's Family Night event to gather additional feedback on park concepts that had been generated through community engagement. Overall community members were pleased with the improvements being proposed. Some of the community did not realize that Fish Creek and Pigs Eye Lake had public lands and would like for more information to be made available.

Battle Creek Middle School

Ramsey County was invited to share information and gather feedback from a classroom of students at Battle Creek Middle School. The class had a diversity of ages and race. Students enrolled in the class were from households where English was not the primary language spoken.

The class had an interest in seeing more programming being made available including nature education, movies in the park and community gatherings with food trucks. Students also would like to see more fishing opportunities, walking trails, and paved multi-use trails through the park.

Friends of the Mississippi River already performs in class programming with the school and takes groups down to the creek for course work. There was an expressed interest in improving the access site across from the school as well as the trail. Implementation of learning stations along the trail and creek are desirable outcomes.

Carver Elementary School

Ramsey County Parks & Recreation has met with Carver Elementary Staff regarding the redevelopment of the school grounds which are currently in a design phase. Carver Elementary offers Science, Technology, Engineering, and Math (S.T.E.M) education. As a part of this education students go out into the park during various classes for their instruction. Carver Elementary and Ramsey County are interested in increasing access to the park from the school grounds and implementing learning trails and opportunities within the park close to Carver Elementary.

Minnesota Department of Transportation

Ramsey County Parks & Recreation has had preliminary conversations with the Minnesota Department of Transportation regarding parcels of land along the east side of Highway 61. Ramsey County is interested in incorporating some of this land into Battle Creek Regional Park, the department of transportation has indicated that some land transfers may be possible in the future, additional planning and work will be needed to make this a reality.

At-Large Meeting & Design Charrette

At Large Community Meeting

The first at-large community meeting was held at the Battle Creek Recreation Center on Saturday August 3, 2019 to gather feedback on what future amenities are wanted, programming in the park, what features of Battle Creek are important to protect and any other information that community members wanted to express. The event was advertised through local media, social media, in park posters, the county newsletter, the project website and Ramsey County encouraged all partners to also share the information through their own networks.

Overall the turnout, while substantial, was not very diverse and was predominantly white, middle to older aged community members who were already active users of the park. Respondents emphasized existing uses as the most important aspects of the park to further develop with the implementation of the winter recreation area and man-made snow being the most important. Community members also communicated the desire for the protection of the park's natural areas as being a significant factor in the development of the master plan. Access into Pigs Eye and the protection of that area as a public resource was also noted.

Community Design Charrette

Ramsey County held a community design workshop on Saturday November 2, 2019 at the Battle Creek Recreation Center. The event was advertised through local media, social media, in park posters, the county newsletter, the project website and Ramsey County encouraged all partners to also share the information through their own networks.

The design workshop was held so that members of the community could come and take in what had been learned through community engagement to start placing amenities in the park to shape the development of the park concept. Ramsey County Parks & Recreation provided maps of the park overall, the Battle Creek segment and the Pigs Eye Lake segment for participants to annotate, draw on or in any other way express their views. Community members were broken into groups along with county and SRF staff to help facilitate or answer any questions.

Themes that emerged from the community design charrette:

- Keep development clustered around areas that have already been developed such as parking lots, the community center, and existing trailheads.
- Acquire park inholdings, Minnesota Department of Transportation Parcels, and land within the Mississippi River Corridor Critical Area for protection and recreational use.

Comments Regarding the Overall Park Map:

- Regional park is lacking signage along Highway 61
- Recreational amenity/viewing bluff (Totem Town)
- Land bridge across 61 from Lower Afton to Pigs Eye segment
- Access to Pigs Eye Lake
- Bluff trail connection from Battle Creek to Fish Creek
- Learning station/viewing area at Red Rock Road (pigs eye)
- Future property acquisition (homes along fish creek)
- Acquisition of Burns Ave. Overlook
- Connect pigs eye/ Parking/expansion
- Boardwalk around pigs eye to viewing areas
- Canoe/kayak/rowing at pigs eye
- Rowing facility/kayak/canoe at pigs eye
- Acquisition (totem town)

Comments and notes from design workshop groups:

Group 1

- Break Park into 4 quadrants
- Collaborate between county and city
- Use facilities we already have
- Connections to pigs eye
- Public safety concerns
- Skiing expansion
- Improved signage
- Permanent restroom at off leash dog area
- Expand waterworks (Splash pad)
- Trail Loops

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Group 2

- Water resources become part of a larger landscape
- Land bridge to connect pigs eye
- Contiguous land
- Development should happen in existing locations
- Park reserve vs. regional park
- Wayfinding Improvements
- Sustainability is important

Group 3

- Adopt a trail to address trash
- Nature center supported
- Access point safety
- Connecting dense areas to park
- Satellite nature centers
- Bluff connection

Group 4

- Focus on nature preservation
- Trail links into pigs eye
- Boardwalks in pigs eye
- Expand development within existing areas
- Wayfinding improvements
- Restrooms
- Add access points
- Close battle creek road

Group 5

- Centralize active development areas
- Internal park transit system
- Walking trails vs biking trails
- Wayfinding
- Need to reduce mowing in non recreation use areas

General Notes

- More Trash Cans
- Tamarack Nature Center – Bring kids into woods
- Connect to other Cultures
- Signs
- Safer access points
- High density low into park
- Friends of the park trash events
- Nature center with bike parking
- Nature kiosks/info boards distributed all over park
- Grass track course (flat area biking)

Note: maps and meeting material can be found in the appendix.

Virtual Community Meeting

A virtual design charrette and concept overview was held on Thursday July 23, 2020 in lieu of a second open house design charrette due to the Coronavirus Pandemic. Members of the public, stakeholder groups, recreation clubs, project management team members, and anyone interested in the master plan were invited to attend and give feedback on concept graphics for the regional park. The event was advertised through local media, social media, in park posters, the county newsletter, the project website and Ramsey County encouraged all partners to also share the information through their own networks. The virtual meeting saw 76 attendees in addition to county and SRF staff members.

Ramsey County staff provided an overview of the project, community engagement to date, and park concepts for community members to ask questions, comment and provide general feedback.

Prominent themes discussed:

- Land to be acquired
- Pigs Eye Island Building
- Additional trails, uses and potential conflicts

A complete list of questions asked during this meeting can be found in the appendix. In addition to the feedback received during the virtual meeting Ramsey County hosted a dedicated set of office hours to answer questions and take feedback on the proposed master plan and park concepts.

Overall the feedback was supportive of the concept plan, proposed amenities and programming opportunities in consideration for Battle Creek Regional Park.

Online Engagement

Survey #1 and Wiki-Map

The first online survey and wiki-map were created to get general feedback from the public on what they value about the park, how the park is currently used and what would make the park better in the future in terms of programming, recreational amenities and any other thoughts on Battle Creek Regional Park. The Wiki-Map was created as an online tool that community members could go to and place comments, thoughts, conflict areas, or ideas for the future directly on a map of the park. In conjunction these two online tools allowed the public to clearly communicate their goals for the future of Battle Creek Regional Park. These tools were open and available to the public from June through September of 2019 during the first phase of community engagement. The Survey was also translated into Hmong and Somali in an effort to make the survey as accessible as possible.

Overall the respondents to these online tools were primarily white, and middle aged from the demographics recorded through self reporting in the survey. The respondents were also predominantly active park users that were familiar with and invested in Battle Creek Regional Park.

Most respondents prioritized passive and natural space activities such as cross country skiing, hiking, off-road cycling, walking, and birdwatching among others. Man made snow and a nature center were identified as two recreation amenities that deserved consideration in the implementation of a master plan. Programming was also identified as a priority with many community members in favor of implementing nature education and beginner outdoor recreation programs for off-road cycling and cross-country skiing. To a lesser extent, community events and various outdoor classes were also mentioned.

The preservation and protection of natural space was a top priority for survey respondents. Community members indicated the importance of limiting development to areas that are already partially developed such as trailheads, the community center and in areas of long term acquisition.

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Survey results may be found in the appendix.

Survey #2

The second online survey was launched to gain further insight into selected recreational amenities and park features that were identified through community engagement. The survey was open and available to the public from January through October of 2020.

Waterworks is an amenity that is in need of some type of redevelopment or repair. Survey respondents echoed what Ramsey County had heard from in person engagement. Waterworks is seen as an important aspect within Battle Creek Regional Park. What should be done is less certain with community members split between keeping it as a water park for younger children, converting the area to a free splash pad and expanding the water park to support a wider range of ages.

The survey also found that lighting in select areas of the park should be a priority. Further planning and rules changes will be required for this amenity to be added within Battle Creek Regional Park.

Trailheads were an area that many community members believe need further development. Requested amenities at trailheads include:

- Restrooms
- Drinking Fountains
- Lighting
- Bike Repair Stations
- Drinking Fountains
- Additional Trash and Recycling Containers

Survey results can be found in the appendix.

Story Map and Survey

In addition to the virtual community meeting Ramsey County sought to make park concept maps available to the largest audience possible. Concept maps along with questions regarding recreational amenities as well as a general open comment and question section was made available for Battle Creek Regional Park. There are many existing and proposed amenities that were identified on the concept park plans, to make the maps as legible as possible different amenities and segments of the park were separated into a number of maps including:

- Battle Creek Regional Park Master Plan Concept - Regional Connections
- Battle Creek Segment
- Battle Creek Segment Park Access
- Battle Creek Segment Trail System and Park Amenities
- Battle Creek Segment Learning Trails Corridors
- Battle Creek Segment Trailheads and Park Amenities
- Pigs Eye Segment
- Fish Creek Segment

Overall the feedback was supportive of the concept plan, proposed amenities and programming opportunities in consideration for Battle Creek Regional Park.

Story Map and survey results can be found in the appendix.

Municipal Support

The Ramsey County Parks & Recreation Department will be seeking resolutions supporting the Battle Creek Regional Park Master plan from the municipalities of Saint Paul and Maplewood. These resolutions can be found in the appendix.

MORE INFORMATION TO FOLLOW MEETING WITH MUNICIPALITIES

Ramsey County Parks & Recreation Commission

Ramsey County Parks & Recreation has met with the Parks & Recreation Commission throughout all phases of engagement to keep them up to date and gather additional feedback and direction.

Ramsey County staff brought the plan to the Ramsey County Parks & Recreation commission on the following dates:

February 13, 2019: Ramsey County Parks & Recreation gave an overview of what a master plan is, why they are needed, how they are used and what specifics are included within them. Master plans are the mechanisms to get funding for parks. Regional Parks master planning is dictated by state statute, any funding for a regional park must follow the master plan. In addition the commission was informed of the process that a master plan follows from conception to Metropolitan Council adoption. The commission was given this information because Ramsey County Parks & Recreation had a number of master planning projects that were either in process or about to begin as was the case with the Battle Creek Master Plan. Questions from the commission along with answers included:

- Does a master plan address how pedestrian/bicycling is impacted around the parks especially considering the recent pedestrian deaths in the Battle Creek area?
 - Yes, multi-modal access and identifying if there is a need while working with Public Works and municipalities on adjacent roadways to make them safe is a part of the master planning process.
- Are master plans viewable and how is the public notified of their creation?
 - Ramsey County Parks & Recreation uses email, social media and regular mail to notify the public of community engagement sessions. The community engagement action planning guide covered next will go into some of these challenges.

March 13, 2019: The commission was informed that the original Battle Creek Regional Park Master Plan was completed in 1981 and is in need of an update. SRF Consulting was hired to lead the community engagement process while Ramsey County would perform the writing and graphic development of the plan. Two rounds of community engagement as well as two rounds of design charrettes were expected to draw out ideas from the public.

May 8, 2019: The Ramsey County Parks & Recreation Commission received an update on the status of the Battle Creek Regional Park Master Plan. The group was informed of that the master plan is currently entering into the first phase of community engagement with pop-up engagement and stakeholder meetings scheduled from June through August. The second phase of engagement would follow to inform and develop the initial park concept. The third phase would include the introduction of the final park concept along with a public review. Questions from the commission along with answers included:

- How are stakeholders determined?
 - Ramsey County Parks & Recreation creates a list based on current users and also looks for other interested groups and stakeholders. Everyone is considered a stakeholder.
- What are the thoughts behind when parks cross a busy intersection?
 - To make them as safe as possible

Planning Framework

June 12, 2019: An update on the status of the Battle Creek Master Plan was given to the parks commission. SRF consulting has been hired to assist with community engagement because of the complexity of the stakeholders and user groups involved. This will set the guide for future master plans on how the community can be fully engaged in the process. In addition the commission was informed that a pop-up meeting would take place at the end of June at the Hmong Town Market Place.

- Concern on reaching the high population of renters was expressed
 - Ramsey County will have meetings and pop-ups near the park. A list of events that the Southeast Community Organization is having will be provided to Ramsey County Parks & Recreation.
- Concern for safe access points to the park and access to a Somali translator was also expressed.

Community engagement opportunities were also reviewed as a part of this meeting. Staff gave the commission a list of engagement opportunities and were told that they are welcome to assist in staffing the pop-up booths for master planning community engagement.

September 11, 2019: Ramsey County staff updated the parks commission that SRF Consulting is heading the community engagement process for the Battle Creek Master Plan. Important notes from the update included:

- Ramsey County has already hosted several pop-up meetings
- An online survey has been launched
- Many community engagement events were held as a part of community/cultural events in and around the park
- At-large meetings were held during busy times at the Battle Creek Recreation center and Battle Creek Water park.
- Meetings with special interest and community groups
- The second phase of engagement is beginning with the purpose to analyze what has been collected, pinpoint groups/areas that have been missed, and engage those groups.
- Dates for the design workshops and stakeholder meetings are still being determined and will be communicated to the parks commission.

October 9, 2019: Ramsey County staff presented the parks commission with the Battle Creek Master Plan engagement results from the first round of online and in-person sessions. The commission was told that on November 2, 2019 the first design your park charrette would be held from 9 AM to 12 PM.

November 13, 2019: Ramsey County staff provided the parks commission with an update on the Battle Creek Master Plan. The first design charrette took place on November 2, 2019 at the Battle Creek Recreation Center. Themes explored and proposed by the community included:

- The addition of a nature center, partnerships with other municipalities
- Snow making for cross country skiing and future winter recreation activities
- Safer crossings/park access points
- Additional shelter/picnic opportunities and parking
- Archery
- Public art
- Open space possibilities and other inholdings of the park for acquisition
- Preservation of natural areas instead of development
- There is already an adequate amount of paved trails
- Links to Fish Creek Open Space

These themes will be shared with other stakeholders and community members for their input. Questions from the commission along with answers included:

- A commission member pointed out the very different demographics of two meetings they had attended and asked how that is balanced in creating the master plan.
 - The diversity of stakeholders that are sought out for input is important and all information is weighted equally.

Going to large in person meetings is not the only way groups can be heard.

- How is summer vs. winter use balanced?
 - All uses are considered.
- When discussing the Battle Creek Winter Recreation Area, the parks commission wanted to be sure that Ramsey County is making sure that there is equitable input, especially in light of the euro-centric-ness of winter activities. How do we get people to come to more culturally diverse activities that may be added to parks?
 - Engagement has been conducted in a proactive way, for example visiting the Hmong Town Market and seeking input from other geographical and diverse socioeconomic areas that use Battle Creek Regional Park.

August 12, 2020: Ramsey County Parks & Recreation staff updated the parks commission on the Battle Creek Master Plan. Engagement had to be changed and tailored to fit Covid-19 regulations with much of the engagement being moved to a virtual presence. The parks commission was given an updated schedule for the remainder of the project.

May 12, 2021: Ramsey County Parks & Recreation staff provided an overview of the Battle Creek Regional Park Master Plan, including a comprehensive review of the community engagement performed for the creation of the plans as well as an equity analysis of the project.

Questions from the commission along with answers included:

- How was the priority list for implementation established?
 - A combination of measures including secured funding, community engagement, and a cost/benefit analysis.
- At what stage was an equity lens applied?
 - An equity lens was applied from the very beginning, starting with the Request for Proposals from consultants.
- Has qualitative and quantitative data been separated by users and nonpark users?
 - Ramsey County staff shared examples of both and how it has been documented.

June 9, 2021: Ramsey County Parks & Recreation staff provided an overview of the parks master planning process and the past decision-making process which has moved from director lead to the involvement of the community in the creation of parks plans. A summation of the previous meeting and the community engagement methods and outcomes obtained for the Battle Creek Regional Park Master plan was provided along with an overview of the plan concepts and desired outcomes was provided to the commission.

Ramsey County Parks & Recreation also informed the Ramsey County Parks & Recreation Commission that the department was seeking a letter of support from the commission. The commission made a motion to provide a letter of support for the Battle Creek Master Plan which was approved. The letter of Support can be found in the appendix.

Project Management Team Meetings

The Project Management Team is the decision-making body for the project. Project Management team meetings were held throughout the master planning process. The team worked to guide the master planning effort, providing recommendations for approaches and decisions at key points. Team members were also invited to participate in public engagement. The project Management team consisted of representatives from:

- Ramsey County
- The City of Saint Paul
- The City of Maplewood
- The Minnesota Department of Natural Resources
- SRF Consulting Inc.
- The Lower Phalen Creek Project

Planning Framework

An overview of Project Management Team Meetings includes:

June 10, 2019: The team met for the first time to discuss the Battle Creek Regional Park Master Plan to gather information on what the members knew about the park and to find out if there were any aspirations that were held for the future of the park.

Among the favorite aspects of the park were:

- Diversity of uses
- Natural resource diversity
- Dog Park
- Park diversity

Hopes for the master plan from team members included:

- Demolish the 70's style pavilion building
- Balance recreation with natural passive uses
- Improve bike and pedestrian connectivity
- Play area improvements
- Realize the goal of connecting people to the park
- Connecting to youth
- Improve wayfinding

Project Management Team Members were also presented an overview of the project as the planning effort had been defined to date through the Communications & Public Engagement Plan as well as the proposed timeline. The role of the Project Management Team was also defined as a part of this meeting along with an overview of existing park and regional conditions.

A stakeholder analysis activity was also facilitated by SRF staff through the use of an influence and interest lens. Insights from the Project Management Team were used to further define and develop ways to reach community members whom have traditionally been left out of master planning efforts.

The initial master plan survey was also reviewed and discussed by the Project Management Team. A variety of edits were suggested and incorporated into the survey.

September 25, 2019: The second Project Management Team meeting was held to review the findings from the first round of public engagement including pop-up meetings, stakeholder meetings, and a community survey. The in-person and online engagement findings of the first round were presented by SRF staff and found that in-person respondents tended to be more racially diverse and were supportive of active park uses such as splash pads, while online respondents tended to be white and were more supportive of passive park uses such as trails, dog parks, and passive space.

SRF staff also reviewed the general plan for the initial design charrette, which was planned for early November of 2019. The charrette would facilitate a discussion between community members and staff from the Project Management Team, Ramsey County, and SRF.

December 9, 2019: Project Management Team meeting #3 was held to review the initial concept plans for Battle Creek Regional Park and to discuss the next steps for community engagement. The feedback from the community in shaping the concepts was shared with the group and included:

- Protect the bluffs and acquire more of that land for the park
- Identification of areas for water fountains and restrooms
- Telling the story and history of the site
- Preserve natural areas, place any new development within already developed park areas.

Major features of the initial concepts for the park included:

- Recommendation to close Battle Creek Road
- Identification of an area for lighted trails and snow-making operations
- Discussions with Carver Elementary regarding field and educational needs
- What other potential infrastructure improvements should be included? Archery range? Takraw or Tuj Lub?

The Project management team also provided feedback and recommendations for the initial concept plans.

April 21, 2020: The Project Management Team met for a fourth time to discuss the next steps in the master planning effort for Battle Creek Regional Park, which had been altered due to the Covid-19 pandemic. In-person events surrounding phase 2 engagement needed to be postponed, eventually it was decided that the best way to proceed with community engagement would be to move everything to a virtual presence.

The team was also asked to provide guidance on a number of issues including:

- Pigs Eye access points
- Battle Creek Road
- Winter Recreation Trailhead Facility

December 16, 2020: The fifth Project Management Team meeting was held to discuss the Final Draft Concept and the public review that had taken place regarding the final concept maps. The team was reminded of the overall planning process and was informed on what was heard from the public, concept development considerations, and proposed major changes to the park. The Project Management Team was also given a draft version of the Battle Creek Master Plan for internal review ahead of the 45-Day Public Review Period.

All Project Management Team meeting notes can be found in the appendix.

30 Day Preferred Concept Plan Review

A public review of the Battle Creek Regional Park Master Plan park concept plan was available for the public to view and submit comments to Ramsey County from November 1 through November 31, 2020.

Comments from the draft review period can be found in the appendix.

45 Day Draft Report Review

In Progress

Supporting Plans and Documents

System Plan

During the preparation of the 2018 Parks & Recreation System Plan, community engagement was a major component to allow residents, community organizations, local partners, and park staff to participate in the planning process. The Parks & Recreation department recognized the need to engage the community in reviewing current recreation trends, park use, and available recreation amenities through various methods to solicit input.

A comprehensive needs analysis was completed to emphasize community priorities and support a needs-based allocation of funding for parks and recreation services. The anticipated outcomes for this analysis included:

- Documenting existing park and recreation facilities, how they are used, who uses them, and where improvements can be made

Planning Framework

- To aide county officials, park staff, and residents determine what steps to take to ensure all communities in Ramsey County have adequate access to our parks, trails, and open spaces
- Assist in determining the size, location, and number of future parks in Ramsey County.

The community engagement process for the System Plan was conducted using two methods:

- Online survey
- Pop-Up meetings throughout Ramsey County

Social media, the Ramsey County Parks & Recreation website, and email communication were used to inform residents of upcoming engagement opportunities.

The online survey was launched in July of 2017 and remained open until February of 2018 and received almost 1,000 responses.

A series of nine informal pop-up meetings were conducted at various libraries, community centers, and ice arenas located throughout the county.

The following themes emerged from an analysis of the input received from the community engagement process:

Gaps

- More trail connections to parks and open spaces needed
- Add facilities with food and/or concessions available
- Add facilities with recreation rentals such as watercraft, bikes, cross country skis, etc.
- Extend park hours

Parks & Trails

- Additional off road cycling and cross country ski trails
- Develop a new nature center
- Trail development for more and better connection between parks and communities
- Add and improve to existing recreation amenities (playgrounds, picnic facilities, etc.)
- Develop recreation equipment rental facilities

Programming

- Add programming throughout the Ramsey County parks system
- Nature Programs
- Recreation Programs

Off-Leash Dog Areas Master Plan

In 2018 Ramsey County Parks & Recreation completed work on the Off-Leash Dog Areas Master Plan. The plan assesses the current state of off-leash dog areas within the Ramsey County Parks & Recreation system, including Battle Creek Regional Park. After meeting with stakeholders and conducting public engagement meetings throughout the county Ramsey County found that new standards were necessary regarding improvements to site amenities, park rules, and the maintenance and operations of off-leash dog areas within the system.

Improvements for the off-leash dog area at Battle Creek Regional Park includes:

- The addition of an accessible route for the inclusion of all park users as well as maintenance operations
- The accommodation of an area within the off-leash dog area for small dogs only by fencing off a portion of the site with a double gated entry
- Accessible concrete bench pads and trash receptacles
- Development of a multi-species drinking fountain and water line at off-leash dog area entrances

- Double gated entrances
- Removal of miscellaneous and duplicative signage on fences and relocate to a central bulletin board at main entrances
- Install a 10' maintenance gate
- Standardize rules boards at entrances, currently rules are not uniformly posted throughout the off-leash area
- Install trash receptacles throughout the off-leash dog area along with waste bag dispensers.

The full Off-Leash Dog Areas Master Plan can be found in the appendix.

Off-Road Cycling Master Plan

In 2018 Ramsey County Parks & Recreation completed work on the Off-Road Cycling Master Plan for Battle Creek. Off-road cycling has a long history in Battle Creek Regional Park with reports of cyclists using the area for recreation dating back to the park's inception. The county engaged with the public holding stakeholder meetings, community meetings and posting an online survey to gather feedback on the improvement and development of off-road cycling within Battle Creek Regional Park.

Major themes that emerged from the master plan include:

- Implementation of looped trails, the current system is very disjointed and linear, if you are not familiar with the trails it is likely you would get lost
- Implementation of a skills area for developing the necessary ability to ride trails within the park
- Implementation of bike repair stations
- Improved wayfinding signage throughout the park

The master plan and subsequent summary of public engagement and off-road cycling history can be found in the appendix.

Green Spaces, Green Places An Energy Action Plan for Ramsey County Parks & Recreation

Ramsey County Parks & Recreation worked with Xcel Energy's Partners in Energy team to develop the Energy Action Plan. An eight-member Energy Action Team met in a series of five facilitated workshops to review energy data, establish an energy vision, prioritize areas of focus, set energy goals for the department, and establish a framework for implementation.

The Energy Action Team developed an energy vision statement to help guide decisions throughout development and implementation of the plan. The energy vision is "Ramsey County Parks & Recreation's programs, policies and practices will reflect a commitment to leadership in energy efficiency, conservation, education and renewable energy, to foster a vibrant community where all are valued and thrive."

Based on this vision, the Energy Action Team identified priority focus areas and set goals within each. The team then identified key strategies for achieving these goals, with a priority on short term and impactful action steps.

Energy Efficiency and Conservation

- Reduce the total energy use of Parks & Recreation facilities by 20 percent by 2020 and 35 percent by 2025 over a 2008 baseline

Renewable Energy

- Utilize 100 percent renewable energy on site at county parks facilities by 2019
- Utilize 50 percent renewable energy at regional parks facilities by 2020, and 100 percent by 2025

Planning Framework

- Showcase to the public renewable energy technologies installed at arenas, golf courses and the administration building by 2020

Education and Outreach

- Increase awareness of parks' energy efficiency and renewable energy projects to 50 percent of users by 2018
- Engage at least 50 percent of parks employees in an employee energy conservation initiative by 2019

Individual facilities and recreational amenities proposed by the Battle Creek Regional Park Master Plan should be designed and constructed to net-zero standards to further support the goals of the Energy Action Plan.

A copy of the Energy Action Plan can be found in the appendix.

Great River Passage Master Plan

Planning for the Great River Passage Master Plan began in 2010 and was completed in 2012. The plan uses the vision and guiding principles established in prior plans as a framework to develop specific goals and recommendations to provide direction for future land uses and development in the river corridor. The master plan's vision for the corridor represents complex inter-relationships of urban and natural systems, new types of parks, and innovative means by which the natural qualities of the river corridor can be protected and enjoyed.

Battle Creek Regional Park falls within the area of the Great River Passage Master Plan labeled "The Floodplain". Recommendations from the Great River Passage Master Plan for this area include expanding park access, establishing buffers for natural areas, and improving connections to the lakes and river.

The Great River Passage Master Plan was reviewed by Ramsey County as a complementing plan and a continuation of community engagement. The Great River Passage Master Plan engages the entire 17-mile stretch of the Mississippi River along Saint Paul's borders, of which the Pigs Eye Segment of Battle Creek Regional Park is only a portion of the land covered. Within the plan there are access and recreational amenities identified along and within the Pigs Eye segment. However, any access or recreational amenities within the Pigs Eye Lake Segment of the park is a long-term goal of Ramsey County which can not be realized until all appropriate investigations into environmental contamination are complete and mitigation strategies concluded and verified. Ramsey County Parks & Recreation is committed to working with all stakeholders and neighboring landowners to address the environmental issues surrounding Pigs Eye Lake and to continue to develop concepts for future recreational activities that are safe and compatible with land uses in the area.

For the full report on the natural resources existing conditions and next steps in the Pigs Eye Lake segment of Battle Creek Regional Park, please see the Pigs Eye Lake Master Plan Amendment.

Fish Creek Concept

Ramsey County and the city of Maplewood worked jointly in 2016 along with community members to develop a concept for Fish Creek Open Space. The concept plan included:

- Expanded trails within Fish Creek Open Space
- New trailheads and parking areas for expanded access
- Playground
- Gathering area
- Shelter and restrooms
- Interpretive programming shelters
- Observation and programming areas along Fish Creek.

Concept Boards that were developed can be found in the appendix.

Suburban Pond Open Space Concept

The original concept plan for Suburban Pond Open Space included:

- A path loop around the pond
- A small parking lot
- Three picnic shelters in a mowed area near the parking lot
- Native and natural landscape surrounding the pond

The original concept plan for Suburban Pond Open Space can be found in the appendix.

Point Douglass Road Regional Trail Master Plan

The city of Saint Paul is currently in the process of creating a master plan for the Point Douglas Regional Trail Corridor. The 4.5 mile corridor is located in the southeast region of the City of Saint Paul running along Highway 61 from Indian Mounds Regional Park (Burns Avenue) to Washington County (Bailey Road).

The trail has the potential for interaction with and Battle Creek Regional Park and would be an important access route for bicyclists, pedestrians and other trail users into the area. Ramsey County will continue to work with the City of Saint Paul and support the plan as it progresses.

Pigs Eye Lake Master Plan Amendment

In 2015, funding became available through the Army Corps of Engineers Continuing Authorities Program Section 204 Beneficial Use of Dredged Material to develop a feasibility study with in integrated environmental assessment worksheet for the implementation of islands within Pigs Eye Lake. The Army Corps of Engineers in collaboration with Ramsey County initiated an agency-wide planning effort comprised of federal, state, and local agencies to identify the project scope, objectives, coordination, stakeholders and process for developing the feasibility study in compliance with National Environmental Protection Act (NEPA) and Minnesota Environmental Project Agency (MEPA). The feasibility study was completed in 2018 and identified the implementation of islands within Pigs Eye Lake was feasible and did not require an Environmental Impact Statement (EIS) under NEPA or MEPA guidelines.

A major planning effort was initiated in 2019 to better address specific needs to the Pigs Eye Lake section of Battle Creek Regional Park.

Battle Creek Regional Park – Pigs Eye Master Plan Amendment

- Sequencing of natural resource and public safety improvements for Pigs Eye Lake.
- Does not address boundary adjustments, park acquisition and recreational infrastructure/programming improvements (will be completed in a future master plan amendment/update process).
- Address Mississippi River Critical Corridor Area (MRCCA) policy standards and criteria
- Public engagement process
- Anticipated completion in 2020.

Public Engagement:

Engagement for the master plan was completed on multiple levels for items identified within the master plan from 2015-2020. Both partner engagement for agency coordination and involvement, and community engagement for general participation by the general public was completed for feedback. Below is a high-level summary of public input options.

Partner and Community Engagement Options:

- Pigs Eye Feasibility Study – Prior to this master planning process, previous engagement was completed through planning activities for the Pigs Eye Lake Island feasibility study. As part of this process there was extensive

Planning Framework

partner engagement with federal, state, and local agencies for development of the feasibility study. Public engagement was completed with two concurrent 30-day public review periods for both the MEPA and NEPA process to allow general feedback from the public. See Master Plan Appendix - Pigs Eye Feasibility Study – Appendix A for additional information regarding correspondence and coordination.

- Master Plan Amendment -
 - Previous public engagement completed – Past engagement for development of the 2018 Park and Recreation System Plan, and the overall Battle Creek Regional Park master plan were utilized.
 - Additional public engagement - The Parks department launched a 45-day public review period from mid-August through the end of September 2020. Other steps taken for master plan public engagement consisted of numerous project information notifications, social media, and making information available through the County Parks project website.
- Agency support – Following the public engagement period, the Parks department initiated a process for agency support of the master plan amendment. Additional support and approval were requested from the City of Saint Paul, Ramsey County Parks and Recreation Commission and the Ramsey County Board of Commissioners prior to submittal to the Metropolitan Council.

Engagement Results:

The following themes emerged from analysis of input received through the community engagement process.

Community Participation Themes:

- Pigs Eye Island Building Project – These themes are discussed more in detail in the Conflict master plan section.
 - Project planning/intent – Project understanding as a habitat restoration project and the need for additional public safety components related to long-term environmental clean-up
 - Constructability
 - Utilization of dredge material
 - Testing
 - Existing pollution
 - Timing for implementation – potential delay of the project until long-term cleanup activities have been completed.
 - Effectiveness
 - Benefits of islands in Pigs Eye Lake
 - Long-term clean-up efforts
 - Impact and or benefits to existing wildlife
- Public Safety – need for additional long-term planning
- Need for future access and recreation improvements
- Climate resilient vegetation
- Opportunity for partnerships and collaborations

Agency Participation Themes:

- Pigs Eye Island Building Project – Extensive support from all levels of federal, state, and local agencies through benefits achieved from this project.
- Public Safety – need for additional long-term planning
- Climate resilient vegetation
- Opportunity for partnerships and collaborations

Theme outcomes related to both community participation and agency participation have been analyzed and incorporated were feasible in the master plan for continued participation, and evaluation/completion of projects identified in the master plan.

Equity Analysis:

Public engagement for the focused master plan amendment was intended to reach as wide of an audience as possible and focused on gathering information both from residents who live near the regional park and county-wide as well. Even though no recreational infrastructure improvements or programming amenities are proposed in this

master plan amendment an equity analysis was still conducted to provide approximate values for areas within one mile of the Pigs Eye Lake area.

Comparing census blocks from 2010 data and approximate values in 2017 between tracts that fall within 1 mile of the Pigs Eye Lake area with Ramsey County overall provided some meaningful data. Ramsey County, as of 2017, had a population of 537,893. The median household income of the county was \$60,301, with a poverty rate of 15%. The subset of the population living in a census tract within 1-mile of Pigs Eye Lake had a population of 72,623, with a median income of \$53,911 and a poverty rate of approximately 20%. The area surrounding Pigs Eye Lake is very diverse with approximately 49.5% people of color comparing to Ramsey County overall with approximately 36.94% people of color. Additional data for neighborhoods within the immediate surrounding area shows a higher percentage of population in 25-64 age range with 25-34 age range with the highest.

The engagement process with the community consisted of numerous project information notifications through social media, website, newspaper in addition to making information available through the County Parks project website. The level of engagement as defined by the International Association for Public Participation's Public Participation Spectrum was "consult" for development of the focused master plan amendment.

Development Plan:

The focused master plan amendment addresses natural resource and public safety improvements to the Ramsey County Pigs Eye section of Battle Creek Regional Park.

- Pigs Eye Island Lake Project (first step of improvements) - The selected plan includes six islands with sand benches totaling approximately 35.69 acres. Three of the islands would utilize a "split" design that would establish sheltered areas in the centers of the islands, allowing for the creation of approximately 17.6 acres of protected wetland habitat. Island vegetative cover will consist of native grass and shrub land plantings. The recommended plan was developed to address the following objectives in Pigs Eye Lake:
 - Improve aquatic habitat – Create depth and habitat diversity in Pigs Eye Lake. Increase acreage of aquatic vegetation. Incorporate structural habitat features to promote fisheries.
 - Improve the quantity and quality of habitat for migratory bird species – Create suitable habitat for migratory birds such as dabbling ducks within Pigs Eye Lake.
 - Maintain or enhance the quantity of shoreline habitat – Protect existing floodplain forest and marsh habitat along the shoreline of Pigs Eye Lake from wind and wave erosion.
- Other Natural Resource Restoration activities and projects
 - Conversion of mixed woods to floodplain forest (i.e. reforestation of native floodplain tree species).
 - Continued enhancement of existing wetland
 - Removal of invasive species
 - Re-vegetation of the existing shoreline.
- Pigs Eye Lake Public Protection

Summary of Public Engagement and Outreach Themes

Battle Creek Regional Park - Regional Connections

- Additional trails, both rustic and paved to connect regional park parcels including Battle Creek Regional Park, Fish Creek Open Space, and the Pigs Eye segment of Battle Creek Regional Park
- Acquire properties along the bluffs between Battle Creek Regional Park and Fish Creek Open Space when they become available and from a willing seller.
 - This connection would also provide space for recreational amenities such as overlooks, rest areas, picnicking, rustic trails, and trailheads in addition to the critical role of environmental preservation.
- Establish better public access into the Pigs Eye segment of Battle Creek Regional Park.
 - Grade separated crossings of Highway 61 and the railroad corridor
 - Trailhead development at the north end of Red Rock Road and at the north end of Pigs Eye Lake

Planning Framework

- Regional Trail Corridors and Connections
 - Access to and between the regional system are an important aspect of the regional parks system. Ramsey County should continue to support and be involved in the planning of the Point Douglass Regional Trail Master Plan led by Saint Paul and the Afton Bluffs Regional Trail Search Corridor.
- Acquisitions
 - Expand the administrative boundary of Battle Creek Regional Park by including Suburban Pond Open Space, Fish Creek Open Space including city of Maplewood owned property, and select residential properties when they become available and from willing sellers.

Battle Creek Park Segment

- Access and safety improvements
 - The Battle Creek segment of the regional park is a highly segmented area that has many road crossings. Community access into park areas should be a focus of the master plan. The employment of various strategies such as rapid flashing beacons, underpasses and/or overpasses where they are viable, crossing lights and other methods should be strongly considered.
- Natural Resource Preservation and Management
 - Community input indicated an extremely strong desire to keep Battle Creek Regional Park as undeveloped and natural as possible. Every effort should be made to limit development to existing nodes of development such as existing trailheads and newly acquired land. Ramsey County and its partners shall continue to manage and preserve the natural quality and aesthetic of the park.
- Winter Recreation Area
 - The implementation of recreational amenities within the winter recreation area should continue to be a priority for Ramsey County. Amenities may include snow making, lighting, a skills and staging area, and a warming hut.
- Trailhead development
 - Existing trailheads should be standardized to the extent possible to include lighting, restrooms, drinking fountains, and bike fixing stations.
 - Select new trailheads located at Suburban Pond Open Space and along Battle Creek Road should be investigated as property is brought into Battle Creek Regional Park.
- Learning Trails
 - The addition of outdoor classrooms, messaging boards, and other learning opportunities should utilize exiting trails and trail corridors. The educational opportunities may include wildlife, plant species, park history, and Native American history.
- Waterworks Redevelopment
 - Waterworks redevelopment, expansion or rehabilitation should be a priority of future development.
- Acquisitions
 - Suburban Pond Open Space
 - Select residential properties when they become available and from willing sellers.

Pigs Eye Segment

- Trailhead development
 - Explore possible trailhead locations for access to Pigs Eye Lake
 - Trailhead development may include wayfinding signage, parking, canoe and kayak launches, restrooms and picnicking opportunities.

- Recreational Development
 - Natural surface trail and boardwalk system for hiking, birdwatching and fishing opportunities around the lake
- Pigs Eye Island Heron Rookery Scientific and Natural Area
 - Continue to preserve and protect the valuable resource
 - Acquire parcel that connects to the scientific and natural area owned by the Saint Paul Port Authority
- Access and safety improvements

The themes above are a result of community engagement and past planning efforts and are not proposed for development at this time. Ramsey County Parks & Recreation would like to acknowledge the results of community engagement and past planning efforts to present potential future access and recreational amenities. Ramsey County acknowledges that issues including environmental contamination and clean up, public safety, and compatibility of recreational use with surrounding land must be resolved before any new visitor access or recreational amenities can be provided. The Pigs Eye Lake Master Plan Amendment was produced to highlight this area and take a closer look at natural resource related projects and environmental clean up.

Additional coordination for necessary security steps will need to be considered for improvements within the Pigs Eye Lake segment of Battle Creek Regional Park. For example, the Metropolitan Wastewater Treatment Plant follows the strategic guidance laid out in the National Infrastructure Protection Plan for security of critical infrastructure. Additional coordination and necessary security steps will be needed to mitigate security concerns for implementation of projects within the Pigs Eye Lake area.

The Pigs Eye Lake Segment is located in a heavily industrialized area, close to the Metro Wastewater Treatment Plant and other major air emissions sources. Prior to planning and implementing recreational amenities, Ramsey County Parks & Recreation will need to evaluate the long-term health impacts of air quality on public users of proposed amenities. In addition, the land use designation for the Metro Plant is industrial and the plant is a highly industrialized facility with safety and use consistent with that designation. Noise, odors, emissions, and traffic are present at levels that are consistent with industrial land use and that meet the Metro Plant's permits but which raise concerns about conflicts between the proposed recreation and the current land use designation in the surrounding area. While the Metropolitan Council Environmental Services has invested in reducing odor generation at the Metro Plant, further reductions are unlikely to mitigate odors to a significant degree. Noise, traffic, and emissions from Metro Plant operations and maintenance activities may also negatively impact the public's ability to enjoy recreational activities.

In addition to the challenges posed by conflicting land uses near Pigs Eye Lake there are also contamination and public safety issues that need to be addressed prior to enabling future recreation development and safe public use of the Pigs Eye Lake Segment of Battle Creek Regional Park. The Pigs Eye Lake Master Plan Amendment was written to address the natural resources existing conditions and future plans for the Pigs Eye Lake Segment. Next steps for Public Safety Planning Activities include:

- Secure funding for planning activities
- Initiate an agency-wide planning team to determine project scope, objectives, coordination, stakeholders, agency and public engagement, funding strategy, and process for developing a long-range plan for remediation. Initiate an agency and public engagement process
- Initiate additional site assessments and testing to determine the extent of contaminants within Pigs Eye Lake and surrounding areas
- Develop an agency-wide monitoring and stewardship plan
- Other required planning activities as required dependent on outcomes from long-term planning
- Secure funding for remediation

Recreation amenities which have been identified as a result of public engagement for the Battle Creek Regional Park Master plan such as fishing, canoe and kayak use/launches, and providing access to the shore of Pigs Eye Lake could

Chapter Title

bring park users into contact with water and soil that has been found to be contaminated. Access and recreational amenities within the Pigs Eye Lake Segment of the park is a long-term goal of Ramsey County which can not be realized until all appropriate investigations into environmental contamination are complete and mitigation strategies concluded and verified. Ramsey County Parks & Recreation is committed to working with all stakeholders and neighboring landowners to address the environmental issues surrounding Pigs Eye Lake and to continue to develop concepts for future recreational activities that are safe and compatible with land uses in the area.

For the full report on the natural resources existing conditions and next steps in the Pigs Eye Lake segment of Battle Creek Regional Park, please see the Pigs Eye Lake Master Plan Amendment.

Fish Creek Segment

- Trailhead development
 - Trailhead development may include wayfinding signage, improved and increased parking, restroom building(s), a playground and picnicking or shelter opportunities.
- Recreational development
 - Passive recreation should be prioritized in the Fish Creek Segment of Battle Creek Regional Park.
 - Expand rustic hiking and walking trails in the area
 - Include a combination of outdoor classrooms, park signage, and learning opportunities along trail system to incorporate programming in the future that may be self-guided or teacher directed.
- Acquisitions
 - City of Maplewood Fish Creek property and select residential parcels when they become available and from willing sellers.

Programming

Overall there was broad support for increased programming throughout Battle Creek regional Park. Recreation stakeholders and heavy users of off-road cycling and cross-country ski trails supported classes and learning opportunities to help expand their respective sports. Racially and economically diverse community members supported the inclusion of beginner courses in recreational sports, nature study, after school programs, art education,

Population Projections

County & City	2010 Census	2020	2030	2040	Percent Change
Ramsey County					
Saint Paul	285,068	315,000	329,000	344,100	20.7%
Maplewood	38,018	42,200	45,600	48,600	27.8%
North Saint Paul	11,460	12,000	12,000	12,000	4.7%
Washington County					
Woodbury	61,961	72,500	80,500	87,800	41.7%
Oakdale	27,401	29,600	35,300	36,000	31.4%
Newport	3,435	3,600	4,050	4,450	29.5%
Dakota County					
South Saint Paul	20,160	21,500	21,500	21,800	8.1%

summer camps and community festivals and events.

Existing Conditions



REGIONAL PARK AND TRAIL SYSTEM CONTEXT

Battle Creek Regional Park is unique within the Ramsey County park and trail system, there are many local and regional connections that the park plays a vital role in. In addition to belonging to the Ramsey County and Metropolitan Regional Park and Trail System, a portion of Battle Creek Regional Park also lies within both the Mississippi National River and Recreation area and the Mississippi River Critical Corridor Area.

Battle Creek Regional Park is a part of the Regional Parks System established in 1974 which includes 64 regional parks, park preserves, and special recreation features, as well as more than 389 miles of regional trails open to the public. The park is adjacent to Indian Mounds Regional Park separated only by Highway 61. Regional trails both planned and existing further connect the park to the regional system including the Sam Morgan Regional Trail, Point Douglas Regional Trail, Mississippi River Regional Trail and a regional search corridor for the Afton Bluffs Regional Trail.

The Mississippi National River and Recreation Area, a unit of the National Park Service, is a 72-mile long river park offering quiet stretches for fishing, boating and canoeing. Other areas are excellent for birdwatching, bicycling and hiking. Unlike most national parks, the Mississippi River and Recreation area is a “partnership park.” The National Park Service owns only 67 acres of the 54,000 acres within the park boundary. The rest is composed of city parks, regional parks, one state park, a national wildlife refuge, state scientific and natural areas, along with private businesses and homes including parts of Battle Creek Regional Park.

The Mississippi River Corridor Critical Area Program is a joint state, regional and local program that provides coordinated land use planning and zoning regulations for the 72-mile stretch of the Mississippi River through the seven county metropolitan area covering 54,000 acres of land in 30 local jurisdictions. The Mississippi River Corridor Critical area shares a boundary with the Mississippi National River and Recreation Area. Any development within the Mississippi River Corridor Critical area in Battle Creek Regional Park would need to adhere to the standards and criteria for the preservation, protection, and management of the Mississippi River Corridor Critical Area under Minnesota Statute 6106.

The Mississippi River Corridor Critical Area was designated in 1976 to protect its many unique natural and cultural resources and values. These resources and values are protected through development standards and criteria implemented via local land use plans and zoning ordinances.

Existing Conditions

The Mississippi River Corridor Critical Area is home to a full range of residential neighborhoods and parks, as well as river-related commerce, industry and transportation. Though the river corridor has been extensively developed, many intact and remnant natural areas remain, including bluffs, islands, floodplains, wetlands, riparian zones, and native aquatic and terrestrial flora and fauna.

LOCATION AND SIZE

Battle Creek Regional park is owned and operated by the Ramsey County Parks & Recreation department and is located in the southeast corner of Ramsey County within the cities of Saint Paul and Maplewood. The park can generally be divided into two main segments, the active recreation area of the park is bound by Interstate 94 to the north, Century Avenue to the east, Lower Afton Road to the south, and Highway 61 to the west and consists of 759.5 acres. The Pigs Eye Lake segment of the park is bound by Highway 61 to the east, the Mississippi River to the south and west, and properties owned by the city of Saint Paul and Metropolitan Council Environmental Services to the north and consists of 1,131.7 acres.

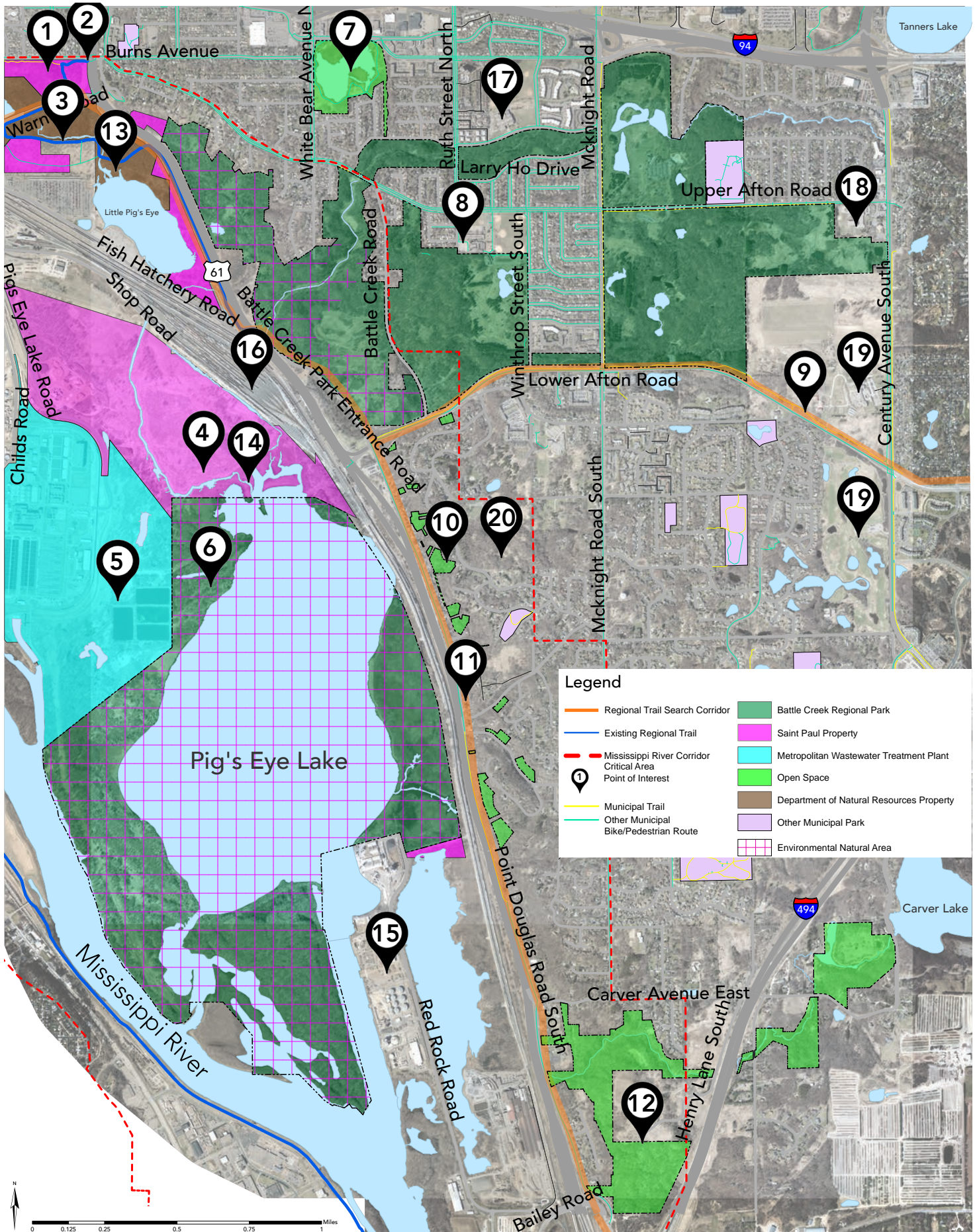
The park is composed of several tracts of land that are mostly connected, with most large sections only separated by roads. There is an area of private residential land in the middle of what is mostly a block of continuous land, with other narrow sections of residential land adjoining the park. The park has a relatively large amount of edge habitat that border mainly single-family residential and school properties, and few interior tracts of land that are unaffected by regular human activity. The north and west edges of the park are bounded by major roadways, Interstate 94 and US Highway 61. On the east, the park borders Ramsey County Corrections department property. The Pig's Eye lake section is separated from the main park by US Highway 61 and railroad yards.

The natural resources of the park are intimately connected to surrounding areas in St. Paul, Oakdale, Maplewood, and Woodbury. The Mississippi River bluff terraces and open space that border the west side of the park continue to the northwest toward Mounds Bluff and St. Paul, and to the south, to Fish Creek open space, with some breaks in the bluff and canopy due to roads and homes. The oak woodlands and bluff prairies in the park continue along the bluffs into these adjacent areas as well. These connections are an important consideration for natural resources planning in the area. The river corridor, surrounding bluffs, park lands and areas to the north and surrounding the Pig's Eye Lake segment are part of an important migratory corridor for many species of birds.

The hydrology in and around Battle Creek Regional Park has mostly been manipulated to flow through storm sewer structures, with the exception of Battle Creek and Fish Creek, which runs on the surface.

Battle Creek, Fish Creek, Suburban Pond, and the Mississippi River bluffs are solely within the Ramsey-Washington Metro Watershed District. The Ramsey-Washington Metro Watershed District has jurisdiction over the surface waters, along with the state of Minnesota. There are four major sub watersheds that flow through the park, with the majority of the main park within the Battle Creek sub watershed and the Pig's Eye segment within the Mississippi river bottoms subwatershed. Both include large sections of urban runoff from the north and west. Battle Creek itself flows from Battle Creek Lake and consists of surface flow throughout most of the park until it outlets into a series of wetlands north of Pig's Eye lake.

REGIONAL POINTS OF INTEREST



Existing Conditions

SITE INVENTORY AND ANALYSIS

Battle Creek Regional park is situated within a complex network of residential, industrial, and municipal, state, and railroad owned properties. Due to the urban setting, the park is divided into two main segments separated by Highway 61 and the Soo Line and BNSF railroads. To the east of the divide is the developed Recreational Area Segment and the Pigs Eye Lake Segment lies to the west.

Regional Points of Interest

1. **Indian Mounds Regional Park:** located atop the bluffs of the Mississippi River near downtown Saint Paul, the 111-acre park consists of river bluffs, steep slopes, rolling hills, woodlands, and grasslands. The site is rich in history and is the site of Indian burial mounds which date to the Hopewell Indian Era of more than 2,000 years ago. The Metropolitan Council recognizes Battle Creek & Indian Mounds as a single regional park. Access between the sites is extremely limited, Highway 61 acts as a severe obstacle to pedestrians attempting to navigate between the two areas, and the Fish Hatchery Trail underpass is frequently damaged by erosion issues causing frequent closures.
2. **Sam Morgan Regional Trail:** follows Shepard and Warner Roads along the east side of the Mississippi River from Crosby Farm Regional Park to Indian Mounds Regional Park. Walkers, runners, and bikers enjoy beautiful views of the Mississippi River, the downtown Saint Paul skyline, the Cathedral, High Bridge, and more along this approximately nine-mile paved path. The trail ends at Highway 61 and this would seem to be an ideal location for an improved crossing in an attempt to connect the two regional parks
3. **Minnesota Department of Natural Resources and Fish Hatchery:** the first state run hatchery, established in 1877, was first called the Willow Brook Hatchery, then Mounds Park Hatchery, and finally Saint Paul Hatchery. The Department of Natural Resources owns approximately 60 acres of land located between land owned by the city of Saint Paul and north of the Pigs Eye segment of Battle Creek Regional Park.
4. **Saint Paul - Pigs Eye:** the city of Saint Paul owns approximately 290 acres of land to the north of Pigs Eye Lake and the eastern edge of Little Pigs Eye separated by railroad tracks. The southern parcel covers a former landfill which was remediated and turned into a park featuring the 500-acre lake, hiking trails, and bird watching areas. Saint Paul also operates an archery range located at 1200 Warner Road; the hours of operation are from sunrise to sunset. Access to this site is limited, users must cross the railroad tracks on Childs and Pigs Eye Lake Roads and park near the Saint Paul wood chipping site.
5. **Metropolitan Council Environmental Services - Metropolitan Wastewater Treatment Plant:** located on the Mississippi River in Saint Paul, this is the largest wastewater treatment facility in Minnesota. When it opened in 1938, it was the first plant in a metropolitan area on the Mississippi River. Today it is among the nation's largest. The Metro Plant treats an average of 172 million gallons of wastewater per day. The Metro Plant's excellent environmental record has resulted in it regularly earning state and national awards for operational excellence, including the National Association of Clean Water Agencies Platinum Peak Performance Award for perfect clean water discharge permit compliance for 5 consecutive years. Metropolitan Council Environmental Services' record of improving and protecting Mississippi River water quality is a pillar of its history, one of the most important aspects of its work, and a significant contribution to quality of life in the Twin Cities metropolitan area.

Metropolitan Council Environmental Services owns and maintains wastewater infrastructure in and around several areas of Battle Creek Regional Park, including wastewater conveyance pipes and the Metropolitan Wastewater Treatment Plant. To protect this infrastructure, Metropolitan Council Environmental Services follows the strategic guidance laid out in the National Infrastructure Protection Plan that was created by Homeland Security in response to Presidential Policy Directive 21 following the attacks of September 11, 2001. This plan designates water and wastewater infrastructure as an essential component of Critical Infrastructure and Key Resource (CIKR) protection and directs owners of such infrastructure to take an "all hazards" prevention and reduction approach, which involves taking action to prevent, protect against, mitigate, respond to, and recover from all hazards. Goals developed under that guidance direct Metropolitan Council Environmental Services to sustain protection of

public health and the environment by recognizing and reducing risks to and vulnerabilities of its infrastructure. The impacts on the security of the regional wastewater system will be fully addressed prior to Ramsey County Parks & Recreation moving forward with the master plan.

6. **Battle Creek Regional Park - Pigs Eye Segment:** The entire Pigs Eye Lake segment of the regional park lies within the floodplain of the Mississippi River. The lake is approximately 500 acres in size and is very shallow, the land surrounding the lake is approximately 610 acres. Access to this area of the regional park is extremely limited and has no recreational amenities available.

The Pigs Eye Lake segment contains one of the largest heron rookeries in the state of Minnesota and is designated as a State Scientific and Natural Area by the Minnesota Department of Natural Resources. Species that nest in the rookery include great blue heron, great egret, black-crowned night-heron, double-crested cormorants, and yellow crowned night heron. This is one of four places in the state where yellow-crowned night herons are known to nest.

Scientific research at this State Scientific and Natural Area has included the study of perflourinated compounds (PFCs) in migratory birds, based on chemical analysis of the eggs of great blue herons. Perflourinated compounds are a family of synthetic chemicals, which bio-accumulate in organisms and, according to the Minnesota Pollution Control Agency, have been found to have some health effects in animals. Studies in 1993 and again in 2010-2011 found perflourinated compound concentrations in some heron eggs collected from the island to be among the highest measured in bird eggs worldwide. As reported by the study Perflourinated Compound Concentrations in Great Blue Heron Eggs near Saint Paul, Minnesota, numerous manufacturing facilities and landfills for perflourinated compound related waste, as well as a wastewater treatment plant, are located within 12.42 miles of the colony: a distance great blue herons regularly travel from nest sites for daily feeding. Perflourinated compounds are a family of synthetic chemicals associated with harmful physiological and neurological effects in birds. Of particular and ongoing concern are certain "long chain" types – a reference to the number of carbons – which according to the Environmental Protection Agency are "persistent in the environment, bioaccumulative in wildlife and humans, and toxic to laboratory animals and wildlife."

7. **Suburban Pond Open Space:** a 32-acre site including a 20-acre pond and wetland complex as well as a 50 to 300-foot strip of upland around the entire pond. The pond consists of approximately 50% open water and 50% wetland vegetation and is a significant storm water pond for Battle Creek, located ¼ mile to the south. The area also has a one-half mile wood chip trail which circles the pond. An outlet structure controls the pond elevation.
8. **Battle Creek Recreation Center:** offers educational programs, after school activities, open gym, tot-times, family events, fitness center memberships, seasonal ice-skating, athletics fields, field rentals, and rental spaces. The recreation center is run by the city of Saint Paul and also serves as a major trail head for off-road cycling, hiking, cross country skiing, and many more activities that take place within Battle Creek Regional Park.
9. **Afton Bluffs Regional Trail Search Corridor:** the Afton Bluffs Regional Trail will be an approximately 17-mile long multiple-use trail that will run through Woodbury, Afton, Maplewood and Saint Paul. Once fully developed it will connect to regional destinations including the Central Greenway and Saint Croix Valley Regional Trails, Afton State Park, and Battle Creek Regional Park. The trail will also provide vital connections to local destinations including trails, parks, schools and businesses.

The Afton Bluffs Regional Trail is not planned or fully developed. A master planning process may identify existing trails as part of the regional trail alignment.

Existing Conditions

10. **Mississippi River Bluffs Open Space:** located in the southeast part of Ramsey County in the city of Saint Paul, the site is a 2-mile long narrow strip of steep sloped bluff line within the Mississippi Corridor Critical Area, paralleling the east side of Highway 61 between Battle Creek Regional Park and Fish Creek Open Space. Ramsey County currently owns 69 platted lots totaling 12 acres in the area. These lots constitute about 25% of the total site and are scattered without much continuity of owned space.

Currently there are no existing or proposed recreation improvements for the site.

11. **Point Douglass Regional Trail Search Corridor:** stretching 4 miles from the Bruce Vento Regional Trail to the Point Douglass Regional Trail in Washington County. The trail is located in the southeast region of the city of Saint Paul running along Highway 61 from Burns Avenue to Bailey Road. Saint Paul Parks and Recreation is in the process of preparing a master plan for the future Point Douglass Regional Trail which includes community engagement, assessing trail feasibility, and engineering testing.
12. **Fish Creek Open Space:** located in the southeast corner of Ramsey County and neighboring the cities of Saint Paul and Maplewood, the site is 130 acres in size. The defining characteristic of Fish Creek Open Space is Fish Creek, which flows for 1.5 miles from Carver Lake to Pigs Eye Lake on the west side of Highway 61.

The city of Maplewood owns land abutting Fish Creek Open Space that contains a short paved trail network sitting on a flatter area above the bluffs and creek valley. The city made improvements consisting of the paved trail and a parking lot development utilizing both the city and county owned property in 2016. Maplewood also completed improvements to the existing access road off of Carver Avenue entering Fish Creek Open Space. Maplewood and Ramsey County also completed a joint Master Plan Concept, which was adopted by both the city and Ramsey County. The concept plan included paved trails, turf trails, programming elements, parking and access points, and central gathering spaces. Ramsey County would like to explore the opportunity of including Suburban Pond Open Space into the boundary of Battle Creek Regional Park as well as any future recreational opportunities as a part of the Battle Creek master plan.

13. **Saint Paul Fish Hatchery Dump Site:** The following information was taken from the Minnesota Pollution Control Agency website. (<https://www.pca.state.mn.us/waste/st-paul-fish-hatchery-dump-site>) The Fish Hatchery Dump is located in the Mississippi River valley, south of the intersection of Warner Road and Highway 61 in Saint Paul. The dump is about 38 acres, mostly of wooded and grassy areas. A stream and a bicycle trail are other features of the dump site. Little Pigs Eye Lake and the Burlington Northern Santa Fe Railyard are located to the south and southeast of the site, and the Minnesota Department of Natural Resources Central Regional Office is located to the west.

The Fish Hatchery Dump operated from the mid-1930s to 1971. During the dump's operation, approximately 690,000 cubic yards of garbage and other wastes that can decay were disposed of. When the dump closed in 1971 the waste was covered with soil.

Over time, erosion, freezing/thawing cycles, and flooding have removed some of the cover soil, exposing the waste in spots. The dump was added to the Minnesota Superfund list in August 2007.

Pesticides, metals, volatile and semi-volatile organic compounds, polychlorinated biphenyls (PCB's) and polyfluoroalkyl substances (PFAS) exceeding Minnesota standards are found in soil, groundwater, surface water, and sediment.

Visitors who get off the bicycle trails could be exposed to contamination by walking or camping in the areas where landfill soil cover has been disturbed. Visitors could contact contaminated sediments in the lake and stream by wading and paddling in the area. Visitors can also consume contaminants while swimming or eating fish caught there.

The full extent of contamination at the site is not yet known. Visitors who stay on the bike trail have no or very little risk of being exposed to contamination.

Existing Conditions

Additional soil, groundwater, surface water, and sediment testing are being done to determine the full extent of the contamination and outline which areas need to be cleaned up. The testing results will be used to design a cleanup plan for the area.

Various organizations have expressed interest in improving this area for future recreational use by the public. Throughout the investigation and cleanup process, the Minnesota Pollution Control Agency will continue to work cooperatively with project stakeholders and organizations regarding future Site Redevelopment. (<https://www.pca.state.mn.us/waste/st-paul-fish-hatchery-dump-site>)

Fish Hatchery Superfund Site



14. **Saint Paul Pigs Eye Dump:** The following information was taken from the Minnesota Pollution Control Agency website. (<https://www.pca.state.mn.us/waste/st-paul-pigs-eye-dump-site>)

Pigs Eye Dump operated between 1956 and 1972, accepting waste from communities, businesses and industry in the east metro area. Much of the waste was deposited in wetland areas on the property. Minnesota Pollution Control Agency records show that an estimated 8.3 million cubic yards of waste was disposed of on the approximately 230-acre site. (Waste from the Fish Hatchery Dump is not included in this estimate) This makes the Pigs Eye Dump the largest unpermitted dump site in the state.

From 1977 to 1985, the site also was used for the disposal of wastewater treatment sludge ash by the Metropolitan Council Wastewater Treatment Plant. An estimated 236,000 cubic yards of ash were placed on top of old garbage.

There are several ways that "hot spots" of contamination have been eliminated or minimized. Starting in 1999, remediation efforts have included:

Existing Conditions

- Removing exposed drums of waste along Battle Creek
- Augmenting the shoreline of Pigs Eye Lake with organic rich soils that have slowed the migration of contaminants into it
- Stabilizing lead-contaminated soil in the battery disposal area by mixing it with a cement-like substance that fixes the lead, keeping it from running off the site or leaching into the groundwater
- Covering the entire site with at least two feet of clean soil and planting trees to prevent erosion and draw contaminants from the groundwater
- Filling in ponds in the southeast and southwest portions of the dump with organic rich soil and planting the areas with trees to prevent erosion and encourage biological removal of contaminants.

At this time, the Minnesota Pollution Control Agency wants to minimize the amount

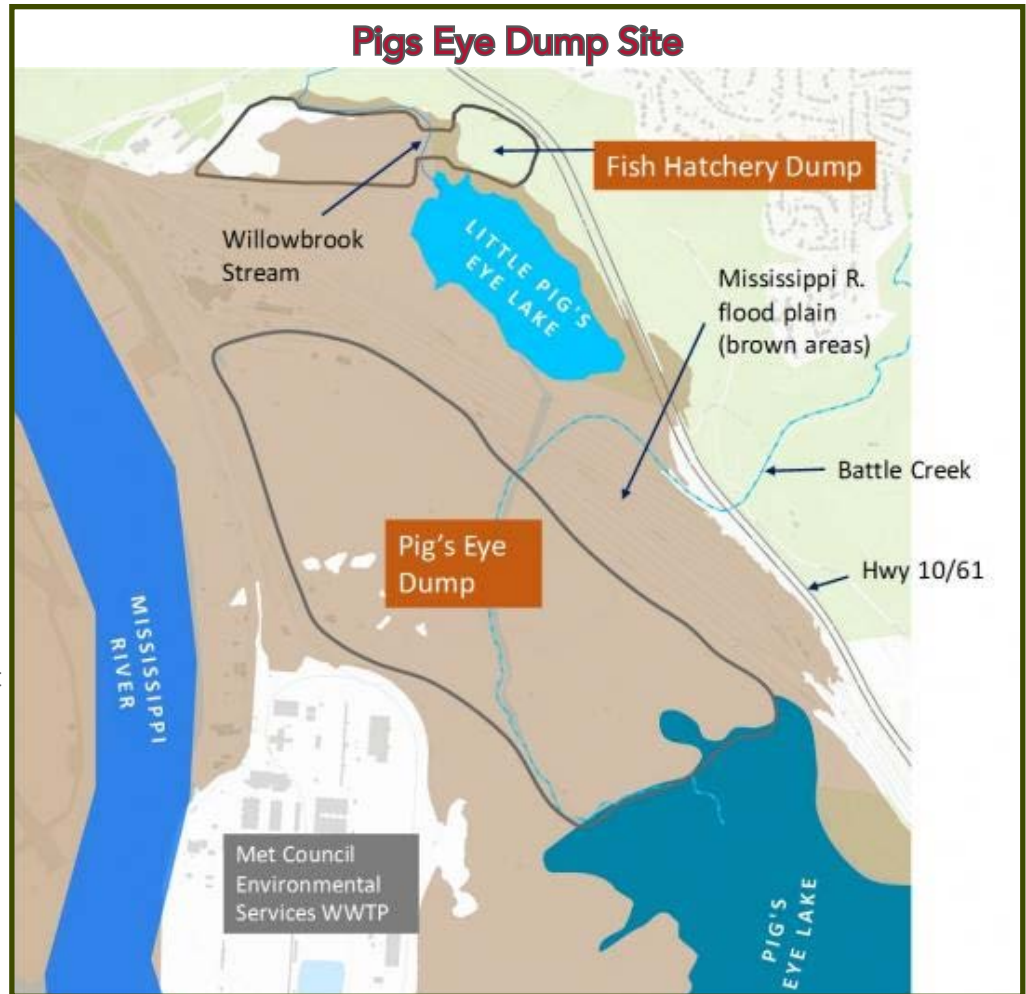
of contaminated leachate and groundwater that flows out of the site and into Battle Creek. To do this, the Minnesota Pollution Control Agency proposes to remove contaminated soil and waste from portions of the Battle Creek stream bank and replace it with organic rich soil. Contaminants leaching out of the dump bind to this type of soil and it reduces the amount of pollutants that reach the creek. The Area will be re-vegetated to prevent erosion and encourage additional biological removal of contaminants.

The soil and waste removed from the stream bank will be relocated elsewhere on the site and covered with clean soil. Groundwater will be monitored to determine impacts.

15. **Red Rock Terminal:** located near Pigs Eye Lake, the terminal is part of a larger portion of land the Saint Paul Port Authority acquired in the area, most of which has been dedicated for park use. Businesses at Red Rock Terminal include: AMG Resources, Barton Enterprises, Continental, Gavilon, Hawkins, Simcote and Gerdau.

The Saint Paul Harbor is the northernmost port on the Mississippi River and the Red Rock Terminal accommodated more than 2.7 million tons of product in 2017. River shipping works in tandem with railroads as part of an intermodal transportation system connecting Minnesota farmers to the global market.

16. **Burlington Northern Santa Fe & Canadian Pacific Railroads:** multiple railroad tracks as well as Highway 61 bisect the two main segments of Battle Creek Regional Park. Access between the two parcels of land is difficult and many community members are unaware that the land surrounding Pigs Eye Lake is parkland.



17. **Battle Creek Middle School:** serving grades 6-8 Battle Creek Middle School has an enrollment of 750 students. Students receive a full array of arts, technology, science, social studies and physical instruction. Monthly events bring students together to socialize and learn; everyone can participate in free after-school classes in the Panther Extended Program.
18. **Carver Elementary School:** Serving students in pre-kindergarten through fifth grade, Carver elementary has a student population of approximately 535. Ramsey County Parks & Recreation has had conversations with school administrators about blending the dividing lines between the school and park property to allow for an easy transition and use of the park by the school's Science, Technology, Engineering, and Math (S.T.E.M.) courses.
19. **Ramsey County Correctional Facility:** The Ramsey County Community Corrections Department owns approximately 256 acres of land to the east and south of Battle Creek Regional Park. The Ponds of Battle Creek Golf Course also sits on this land and is operated by Ramsey County Parks & Recreation. Ramsey County and the city of Maplewood are considering future potential uses for portions of this land.
20. **Boys Totem Town:** was a residential program for up to 36 adolescent boys from the ages of 14-18 who had been committed by the court to treatment for committing offenses and demonstrating risky behavior concerns in the community. Boys Totem Town served the Ramsey County community for more than 100 years.

Boys Totem town provided a safe, secure and healthy environment for residents and helped facilitate community safety by providing specialized evidence-based services to youth and empowering families to prevent future out-of-home placements.

Ramsey County will work in partnership with the city of Saint Paul, the District 1 community and other stakeholders in a community-based process about potential future uses of the site. As part of the process, Ramsey County and Saint Paul will develop an engagement plan with the community to ensure there is equitable land use of the Boys Totem Town site.

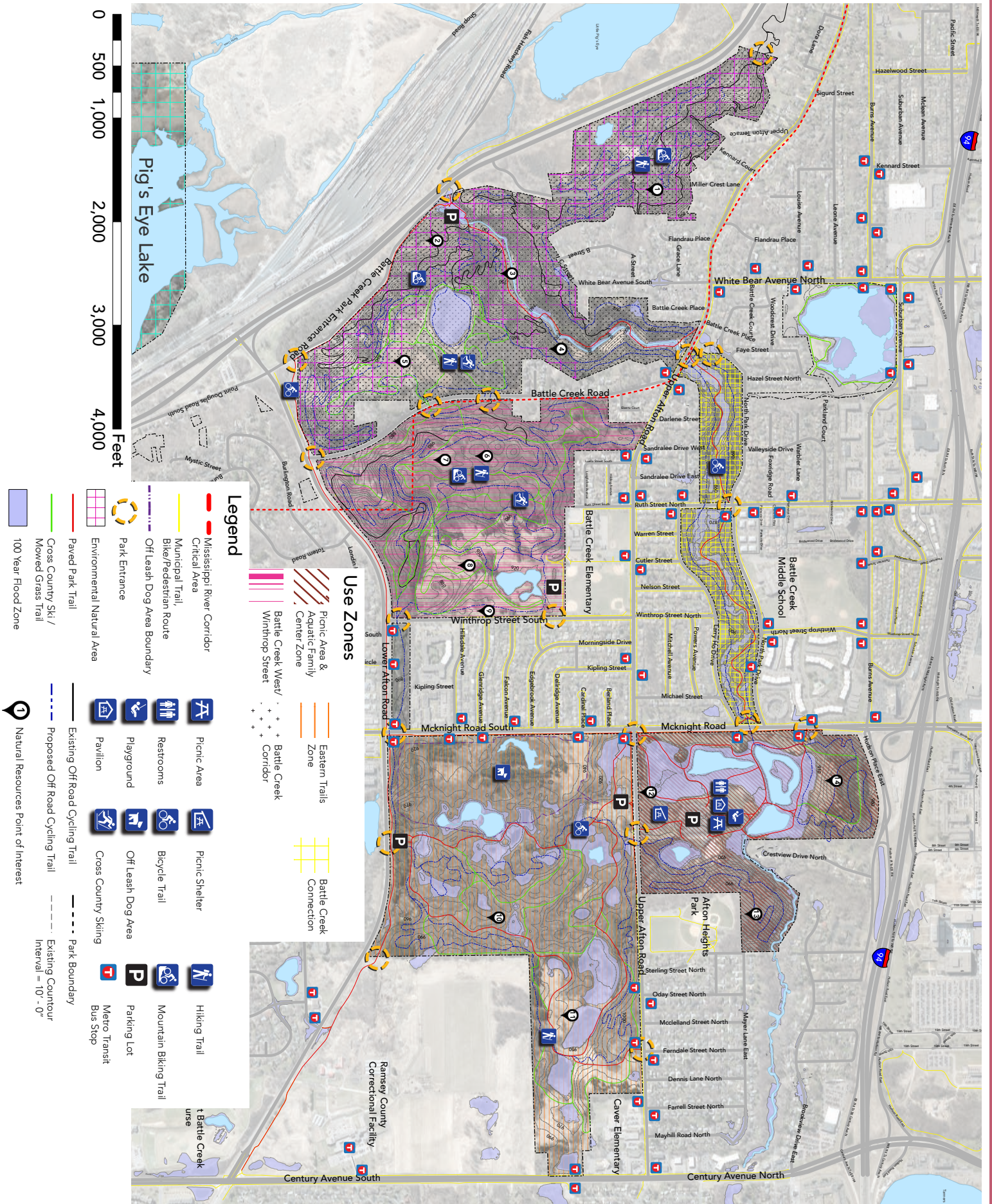
Battle Creek Regional Park Use Zones

Battle Creek Can generally be divided into two main segments, the Battle Creek segment which lies to the east of Highway 61 and the Pigs Eye Lake segment of the park which lies to the west of Highway 61. The Battle Creek segment can be further divided into 5 use zones which generally are split by major roads and intersections. Those use zones include the Picnic Area & Family Aquatic Center Zone, the Eastern Trails Zone, Battle Creek Connection, Winter Recreation & Recreation Center Zone, and the Battle Creek and Bluffs Corridor.

1. **Picnic Area & Family Aquatic Center Zone:** consisting of approximately 100-acres, the use zone is located to the northeast of the intersection of McKnight Road and Upper Afton Road and is a primary active recreation area within the park. The area includes a large picnic pavilion, medium picnic shelter, a general picnic area, 275-car parking lot, a destination play area, an open games field, and a 2.3 mile bituminous multi-use trail. Battle Creek Waterworks, a family aquatics center, is also located within this zone of the park and includes an interactive water play area, leisure pool, water slide, and sand play area. In addition to picnicking and water park activities, the area is also used as a venue for special events and cross-country running meets.
2. **Eastern Trails Zone:** consisting of approximately 245-acres, the zone is located to the southeast of the intersection of McKnight Road and Upper Afton Road. the area includes a 2.5-mile bituminous multi-use trail, and an additional 3 miles of unpaved hiking and cross-country ski trails. The bituminous trail corridors are also groomed for cross country skiing, providing approximately 5 miles of cross-country ski trails in the area. The trails are connected to the trail system located to the picnic area to the north. A 110-car parking lot is located south of Upper Afton Road to serve the area, as well as provide overflow parking for the Picnic Area and Family Aquatic zone. An additional 30-car parking lot is located on Lower Afton Road. a 44-acre fully fenced off-leash dog area is located in the southwest portion of the site. Trail access to the off-leash dog area is provided from both parking lots.

Existing Conditions

BATTLE CREEK REGIONAL PARK USE ZONES & EXISTING CONDITIONS



3. **Battle Creek Connection:** Battle Creek flows from the picnic area in the northeast to the Battle Creek and Bluffs Corridor bounded to the north by North Park Drive and Larry Ho Drive to the South. A bituminous multi-use trail follows the creek bed to connect the two trail systems within the park. This segment provides a major in-park trail connecting the Picnic Area to the Bluffs Corridor.
4. **Winter Recreation Area & Battle Creek Recreation Center Zone:** consisting of approximately 144-acres, this area of the park is generally bound by Winthrop Street to the east, Lower Afton Road to the South, Battle Creek Road to west and Upper Afton Road to the north. The area has been developed primarily for trail use and more passive recreation. The Area includes 4-miles of combined us off-road cycling and hiking trails, and 4 miles of cross-country ski trails (including 2.4 miles of lighted ski trails) which are mowed in the summer months for hiking and walking. There is also a lighted sledding hill and recreation center. The primary access to the site is provided form a 180-car parking lot located off of Winthrop Street. The parking lot and adjacent recreation center were developed by the city of Saint Paul under a joint powers agreement. According to this agreement, the parking lot is available to all trail users and the recreation serves as a visitors center for trail and winter recreation area users. Ramsey County has priority rights to the use of the recreation center for interpretive programming.
5. **Battle Creek and Bluffs Corridor:** consisting of approximately 218-acres, this area of the park is generally bound by Battle Creek Road to the east, Upper Afton Road to the north, and Highway 61 to the south and west. There is a 1.7-mile bituminous multi-use trail reaching from the Battle Creek Connection zone in the north and heads south to the main trailhead for the area. The trailhead, which consists of a 36-car parking lot, provides parking for trail users, and a small general picnic area is located at the lower reaches of Battle Creek near the parking lot. An underpass of Highway 61 provides trail access to property owned by the city of Saint Paul and the Minnesota Department of Natural Resources surrounding Little Pigs Eye Lake and eventually the trail reaches Indian Mounds Regional Park and the Sam Morgan Regional Trail.

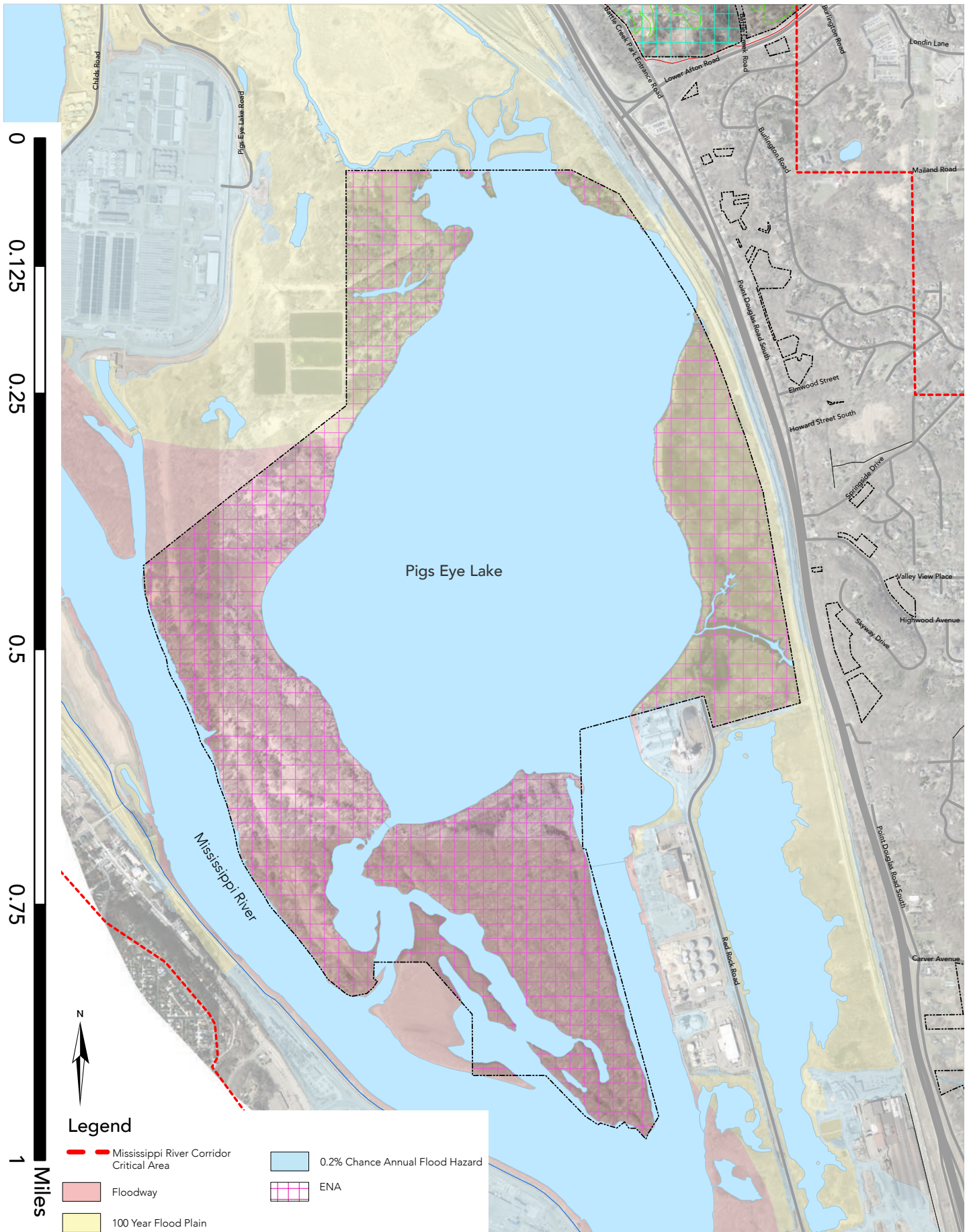
This area of the park is also largely classified as an Environmental Natural Area (ENA). Environmental Natural Areas have been defined by Ramsey County as areas within regional parks having significant, sensitive, and unique natural resources that warrant extended preservation. The habitat and vegetation within these areas is managed to support and enhance these natural communities. These areas are designated for increased habitat protection, ecological restoration, passive recreation and environmental education. Any development or expansion within these areas is limited to trails only, with nature interpretation facilities allowed within planned development areas. Public access to these areas is restricted to designated trails and the use of these areas is limited to passive recreation such as hiking, skiing, and nature observation. Bicycles and off-road cycling is allowed on designated trails only. Dogs and off trail activities are not allowed.

The use zone also falls completely within the Mississippi River Corridor Critical Area. The Mississippi River Corridor Critical area is a joint state, regional, and local program that provides coordinated planning and management for the 72-mile stretch of the Mississippi River through the seven-county metropolitan area and 54,000 acres of surrounding land across 30 local jurisdictions. The Mississippi River Corridor Critical Area shares a boundary with the Mississippi National River and Recreation Area, a unit of the National Park Service.

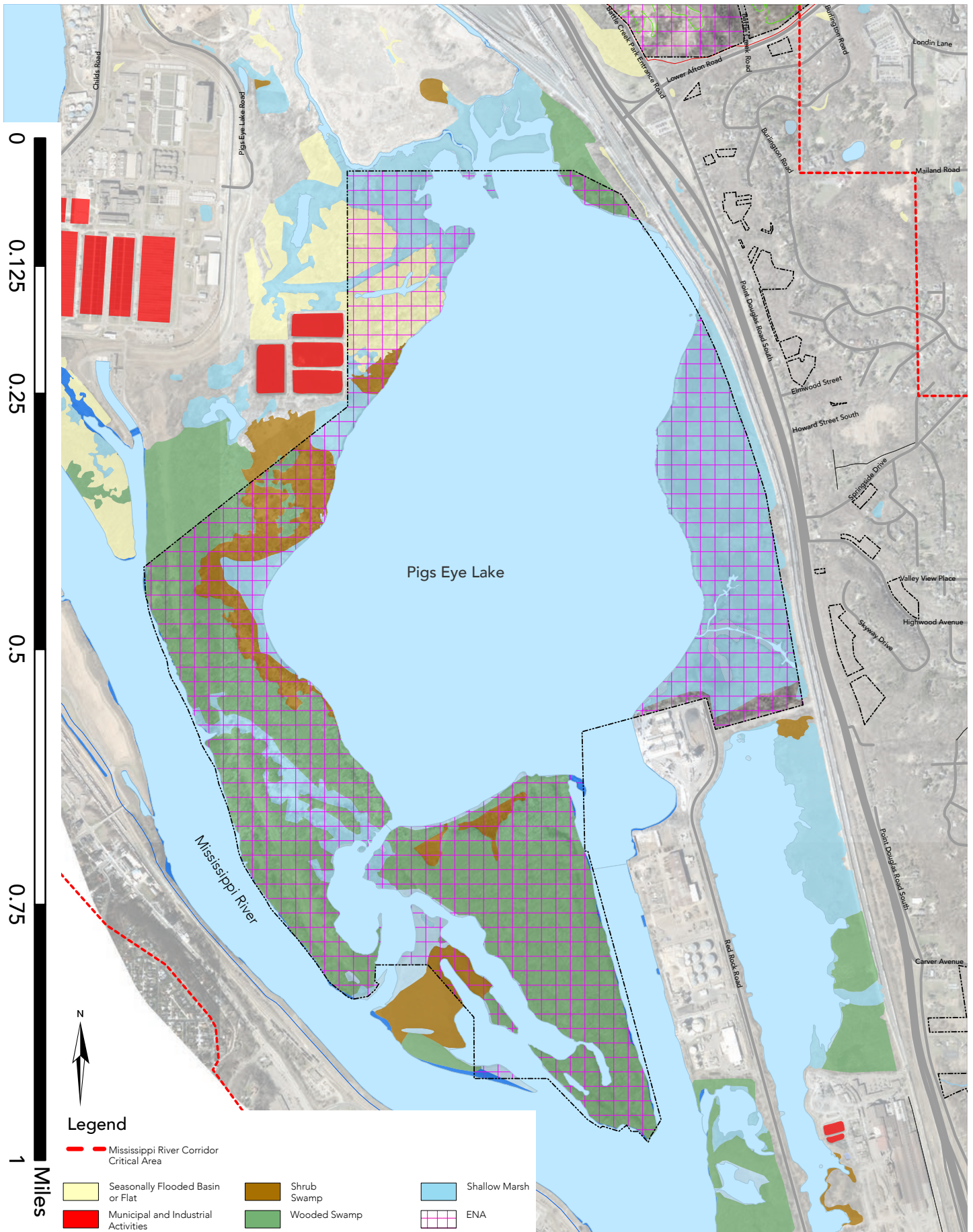
6. **Pigs Eye Lake Segment:** The Pigs Eye Lake segment of Battle Creek Regional Park lies completely within the 100-year floodplain of the Mississippi River with portions of the land laying within the river's floodway. Floodway Areas are designated by the Federal Emergency Management Agency (FEMA) and adopted by communities to provide an area that will remain free of development to moderate increases in flood heights due to encroachments of the floodplain. The entire Pigs Eye segment also lies within the Mississippi River Corridor Critical Area. The land owned my Ramsey County is primarily seasonally flooded basins, shrub swamps, wooded swamp, and shallow marsh which are all types of wetlands. There is little to no upland available to develop on land owned by Ramsey County. This makes the utilization of partners and stakeholders to ensure access to the area absolutely vital. For reference please see the floodplain and landcover maps of the Pigs Eye Lake segment on pages 42-43.

The Pigs Eye Lake Segment is located in a heavily industrialized area, close to the Metro Wastewater Treatment Plant and other major air emissions sources. Prior to planning and implementing recreational amenities, Ramsey County Parks & Recreation will need to evaluate the long-term health impacts of air quality on public users of

PIGS EYE LAKE FEMA FLOOD ZONES



PIGS EYE LAKE LAND CLASSIFICATION



Existing Conditions

proposed amenities. In addition, the land use designation for the Metro Plant is industrial and the plant is a highly industrialized facility with safety and use consistent with that designation. Noise, odors, emissions, and traffic are present at levels that are consistent with industrial land use and that meet the Metro Plant's permits but which raise concerns about conflicts between the proposed recreation and the current land use designation in the surrounding area. While the Metropolitan Council Environmental Services has invested in reducing odor generation at the Metro Plant, further reductions are unlikely to mitigate odors to a significant degree. Noise, traffic, and emissions from Metro Plant operations and maintenance activities may also negatively impact the public's ability to enjoy recreational activities.

Currently there are no developed recreational features or site amenities within the Pigs Eye Lake segment of the park.

Existing Site Amenities & Features

Picnic Area and Family Aquatic Zone

- Upper Afton Road East Trailhead
 - 275-car parking lot
 - Drinking water fountain
 - General picnic area
 - Wayfinding signage
- Large picnic pavilion
 - Integrated restrooms
 - 2 kitchen areas
- Medium Picnic Shelter
- Destination Play Area
 - Standard play equipment
 - Swings
 - Nature play area
 - Zip Line
 - Water stream nature play feature
 - Sand play water log
 - Accessible route throughout with accessible picnic tables
- Waterworks family aquatic center
 - Interactive water play area
 - Leisure pool
 - Water slide
 - Sand play area
- Open games and event staging field
- 2.3 mile bituminous multi-use trail
- 0.4 mile grass mowed walking and hiking trail
- Pedestrian access points
 - McKnight Road across from Villages on McKnight, pedestrian flashing beacon and crosswalk
 - Intersection of McKnight Road and Upper Afton Road
 - North side of Upper Afton Road next to vehicle entrance

Eastern Trails Zone

- Upper Afton Road East Trailhead
 - 110 car parking lot
 - Trash and recycling bins
 - Wayfinding signage
- Lower Afton Road Trailhead
 - 30 car parking lot
 - Trash and recycling bins
 - Wayfinding signage
- Off leash dog area
 - Trash containers throughout
 - 3 gated entrances
 - Natural surface trails throughout
 - Approximately 44 acres in size
 - Picnic tables and benches located in an open field area
- 2.5 miles of bituminous multi-use trails
- 2.7 miles of grass mowed/cross-country ski trails
- Pedestrian access points
 - Intersection of McKnight Road and Lower Afton Road
 - Southwestern edge of the site from the Afton Bluffs Regional Trail search corridor
 - Intersection of McKnight Road and Upper Afton Road
 - Northeastern edge along Upper Afton Road near Carver Elementary

Battle Creek Connection

- 1 mile of bituminous multi-use trail
- Pedestrian access points
 - Intersection of North Park Drive, Larry Ho Drive and McKnight Road
 - North Park Drive Across from Battle Creek Middle School
 - Intersection of North Park Drive and Winthrop Street North
 - Intersection of Ruth Street North and North Park Drive
 - Upper Afton Road across from the Battle Creek Corridor and Bluffs zone's northeast arm

Winter Recreation Area and Battle Creek Recreation Center Zone

- Recreation Center Trailhead
 - 180 car parking lot
 - Trash and recycling bins
 - Wayfinding signage
- Battle Creek Recreation Center
 - Benches
 - Basketball courts
 - Craft room
 - Fitness center
 - Gym
 - Restrooms

Existing Conditions

- Warming facility
 - Meeting room
 - Offers educational programs, after school activities, open gym, tot-times, family events, fitness center memberships, field rentals, rental space for parties, meetings, events and more.
- Sledding Hill
 - 5 miles of cross-country ski and grass mowed hiking and walking trails
 - 3 miles of combined off-road cycling and hiking trails
 - Cross-country ski trails in the Winter Recreation Area

The cross-country ski trails in the winter recreation area are recognized by the International Ski Federation as a homologated course. Homologation represents a system of evaluation that is designed to guide the development and upgrade of cross-country competition courses. It is not just a set of numbers and standards, but is a process for certification that provides a forum for constructive discussion between organizers, the International Ski Federation and inspectors.

The homologation evaluation includes more than just the course design. The stadium layout and the infrastructure installations are also part of the overall evaluation. The resulting certification represents an International Ski Federation stamp of approval indicating that the site is physically capable of accommodating international competitions.

The end result of the process is to provide a varied and challenging course that requires competent skiing abilities, as well as stadiums that meet the requirements of new competition formats.

It should be emphasized that homologation should not be carried out in such a way that the course marginally fits the rules. Some of the cross-country ski centers will not be capable of having a homologated course if the physical characteristics of the terrain are below the required height difference limits.

Homologation is an important aspect of the cross-country ski trails in this area. The trails are of high quality and have the ability to offer competition and difficulty not easily found. The cross-country ski trails in this area of Battle Creek are one of 32 sites in the United States to receive homologation certification. The only other trail system in the state of Minnesota is located at Theodore Wirth Regional Park
 - Pedestrian access points
 - Along Battle Creek Road
 - Intersection of Battle Creek Road and Lower Afton Road
 - Intersection of Battle Creek Road and Winthrop Street
 - Winthrop Street across from the Phoenix Apartments
 - Winthrop Street at Battle Creek Recreation Center trailhead

Battle Creek And Bluffs Corridor

- Park Entrance Road trailhead
 - 36 car parking lot
 - Trash and recycling bins
 - Wayfinding signage
- Small general picnic area
- 0.8 mile bituminous multi-use trail
- 2.4 miles of grass mowed walking and hiking, and cross-country ski trails

- 4.5 miles of combined hiking and off-road cycling trails
- Pedestrian access points
 - Intersection of White Bear Avenue South and C Street
 - Via the historic overlook at the intersection of Highway 61 and Burns Avenue
 - Upper Afton Road across from the Battle Creek Connection zone
 - Along Battle Creek Road
 - Underpass of Highway 61 from Minnesota Department of Natural Resources land and Indian Mounds Regional Park
 - Intersection of Battle Creek Road and Lower Afton Road

NATURAL RESOURCES INVENTORY AND MANAGEMENT

The natural resources of Battle Creek Park include the soils, water, plants, animals and people that are within the Park boundaries or connected with it. The particular resource elements present in the park and their landscape patterns are the result of historical processes, including climate, hydrology, plant and animal migrations and interactions, and human decisions and activities.

Current Natural Resource Quality and Issues

Despite major alteration from agriculture and urbanization, the natural resources of Battle Creek Regional Park are still of significant quality. The park contains examples of many of the native plant communities that were present in Ramsey County at the time of European settlement, though these are poorer in plant and animal species than they were originally, and have been invaded by a number of aggressive, exotic species.

Based on the findings of the Minnesota County Biological Survey (MCBS), these are some of the highest quality natural communities remaining in Ramsey County, and include some species that are now rare in Minnesota. Rare communities in the park include dry oak forest, sand-gravel oak savanna. Less than 1 percent of the original dry savanna and few examples of mature dry oak forest remain in the Twin Cities Region. Sizable populations of Kittentails, an endangered plant in Minnesota, exist in the savanna areas of the park, and evidence of Fox snake were found by the MCBS surveyors. Within the park is nesting and wintering habitat for Bald Eagles and nesting habitat for colonial waterbirds in the river valley, and provides foraging habitat for these birds.

The quality of water and aquatic habitat in Battle Creek and some wetlands in the Park is still good. Finally, the Park has significant existing and potential connections to other important natural areas along the Mississippi River corridor and bluffs, and is part of an important wildlife migratory corridor and fishery along the River.

Plant, animal, and human communities and the landscapes they inhabit are in constant change. Just as the composition and patterns of native habitats in the park have changed, the processes that built and maintain these habitats--especially hydrologic processes, fire disturbance, and activities of some native animals--have changed dramatically. Since American Indians began to manage the local landscape with fire, human decisions and choices have determined much about how the landscape appears and will determine much of its future. In developing a management plan for the natural resources of the park, the composition and quality of its plant and animal communities, the landscape processes that can be used to maintain, enhance or restore them, and the values of people and institutions affecting the Park will all be important considerations.

Major issues for management of natural resources in the park identified in this planning process include the following:

1. Inventories of plant and animal communities living in and migrating through the park are inadequate for making management decisions.
2. Natural communities in the park are valuable but degraded by fragmentation, invasion by exotic species, and other changes since settlement. The park is located in a highly urban area where such processes will continue.

Existing Conditions

3. The deer population in and around the park often exceeds the carrying capacity of the land. A population of 15 to 20 deer per square mile of deer habitat is considered desirable to maintain the health and diversity of forests and to maintain or restore other plant communities in the park. The population needs to be managed, given the habitat needs of all species in the park, and the value and interest by park users and neighbors.
4. Along with landscape fragmentation, settlement and urbanization have altered the landscape processes that maintained the natural resources of the park, and make these processes difficult to restore. These processes include fire that maintained some native plant communities like oak savanna and wet meadows; hydrologic processes that gradually infiltrate and clean storm water runoff and maintain creek flows; and soil-building processes. How far can natural processes be restored? What other options are available to maintain the quality of aquatic and terrestrial communities and habitats?
5. The need to serve a large urban population bring conflicts between maintaining the quality of natural resources and desires for recreational opportunities. Some species and communities are altered or eliminated by a high degree of human contact, trampling, or other activity. Activities also cause soil erosion and spread exotic species.
6. Conflicts concerning management of park areas adjacent to private homes, such as intrusion of neighbor's yards into park land, neighbors' objections to relaxed mowing regimes in the park, and dumping of trash and yard waste, etc. How should these conflicts be addressed?
7. These conflicts suggest that neighbors may have limited knowledge, interest or ownership of park lands. What strategies can be used to build community interest, values, and desire to care for the natural resources of the park and their own properties?
8. Funding and staff available to maintain, protect or enhance the natural resources of the park are limited. Natural resource needs in this park need to be balanced with recreation needs and needs of other parks and open space areas.

EXISTING EASEMENTS

Metropolitan Council Environmental Services Sewage Interceptor Line 1-SP-200/201

This sewer interceptor line roughly parallels the man-made Battle Creek and is an important piece of the Metropolitan Council Environmental Services infrastructure. The line receives sewage from the surrounding community and beyond taking waste to the Metropolitan Council Environmental Services Metro Plant on the Mississippi River bordering Pigs Eye Lake.

Magellan Refined Products Pipeline

A small portion of the approximately 9,800 mile pipeline covering a 15-state area across the central United States runs through Battle Creek Regional Park.

Ramsey-Washington Metro Watershed District

The Ramsey Washington Metro Watershed District has an access agreement with Ramsey County Parks & Recreation for the storm water line that runs underneath the man-made Battle Creek. The watershed district completed a significant restoration of the creek in 1982 and continues to conduct maintenance on the creek to sustain the project.

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FUTURE BOUNDARY AND EASEMENT ADJUSTMENTS

Future long-term acquisition is proposed for Battle Creek Regional Park when properties become available. Inholdings along Battle Creek Road, Suburban Pond Open Space, and properties held by the Minnesota Department of Transportation along Highway 61/10 constitute land that Ramsey County is interested in incorporating into the Battle Creek Segment. Properties falling within the Mississippi River Corridor Critical area between Fish Creek and Battle Creek, including properties held by Ramsey County that are considered the Mississippi River Bluffs Open Space are also of interest for inclusion into Battle Creek Regional Park. While some general uses and recreational amenities have been identified as a part of this master plan, additional master planning activities may be required as properties are acquired and included as a part of Battle Creek Regional Park. Acquisition of these parcels will only occur if the land becomes available and from willing sellers. The acquisition of land is a complex issue due to constraints such as property ownership and the existing conditions of the properties among other issues. Cost for these acquisitions will likely not be known until the property is ready to be acquired and all existing conditions are taken into account.

Expansion of the Battle Creek Regional Park boundary advances all four outcomes of the Thrive MSP 2040 Regional Park System Outcomes which includes:

- Expand the regional parks system to conserve, maintain, and connect natural resources identified as being of high quality or having regional importance, thereby improving climate resilience and enhancing the quality of life for the region's residents.
 - A critical component of these boundary expansions is natural resource protection and restoration opportunities. Each acquisition has unique qualities and provides long-term natural resource benefits.
- Provide a comprehensive regional park and trail system that balances the conservation and restoration of natural resources (with the provision of nature-based recreational opportunities).
 - Battle Creek Regional Park has a diverse range of outdoor recreational amenities but is lacking nature based educational and programming opportunities and access to surrounding neighborhoods. The acquisitions will provide an opportunity to expand outdoor nature based programming and educational opportunities within Battle Creek Regional Park. Acquisition parcels have unique natural resources and will become an asset to provide a balance between protection of natural resources and provide outdoor nature-based recreational opportunities.
- Expand access to regional parks and trails by connecting them with local, state, and federal parks, trails, other lands, and transportation networks, including transit, bicycle and pedestrian systems.
 - The boundary expansion acquisitions will provide an opportunity to expand outdoor recreational opportunities and will be critical for improved community access especially surrounding under-represented communities.
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- Strengthen equitable usage of regional parks and trails by all our region's residents across age, race, ethnicity, income, national origin, and ability, inspiring a legacy of stewardship that also strengthens friendships, families, health, and spirit.
 - The proposed boundary expansion areas for Battle Creek Regional Park will not only provide more geographic balance to the regional park system in Ramsey County but will provide a localized geographic balance to surrounding communities. These areas will enable Battle Creek Regional Park to integrate into the surrounding communities, provide a balanced approach for parkland and increases community access especially surrounding under-represented communities.

A summary of properties includes:

Properties owned by Ramsey County and within the County Parks System

Suburban Pond Open Space

Suburban Pond Open Space consists of 32 acres of primarily a wetland complex surrounded by an old field on the south and degraded mixed woods on the east side of the site. Suburban pond is located directly to the north of Battle Creek Regional Park, located across North Park Drive between Ruth Street North to the east and White Bear Avenue North to the west. Suburban Pond Open Space would provide the opportunity to expand the trails system along with another potential trail head. Due to the parks' proximity to Battle Creek inclusion within the regional parks system makes sense as the general public does not differentiate the two parks.

The site includes the 20-acre pond and wetland complex, as well as a 50 to 300-foot strip of upland around the entire pond. The surrounding development consists of commercial, multi-family, and single family residential real estate. The pond consists of approximately 50% open water and 50% wetland vegetation and is a significant storm water pond for Battle Creek, located ¼ mile to the south. The natural upland area surrounding the pond provides critical vegetation buffers and offers a place for habitat in a highly urbanized area.

Suburban Pond Opens Space will provide a critical access connection to Battle Creek Regional Park.

No acquisition cost will be required for this property since it is owned by Ramsey County. It is anticipated the timeline for implementation of recreational developments within Suburban Pond Open Space will vary between 0-20 years.

Mississippi River Bluffs Open Space

The Mississippi River Bluffs Open Space is a narrow 2 mile long strip of steep sloped bluff line paralleling the east side of Highway 61 between Battle Creek Regional Park to the north and Fish Creek Open Space to the south. Ramsey County Currently owns parcels totaling 19.55 acres in the area. Along with other properties within the Mississippi River Corridor Critical Area the inclusion of Mississippi River Bluffs Open Space would provide the opportunity to provide further natural resource management of the bluffs area as well as providing an unparalleled experience along the river corridor near a metropolitan downtown area. The inclusion of the bluffs would also provide for recreational amenities such as trails, trail heads, overlooks and educational opportunities along the river between Battle Creek Regional Park and Fish Creek Open Space.

This open space is all located within the Mississippi River Corridor Critical Area (MRCCA) which shares its boundary with the Mississippi National River and Recreation Area. The open space is subject to MRCCA regulations (state statute under Minnesota Rule 6106) which is in place to protect the unique natural and cultural resources and values within this corridor. The habitat within all parcels consists of mixed woods, dominated by oak trees.

Acquisition is proposed for adjacent properties for inclusion into Mississippi River Bluff Protection Open Space as they become available.

No acquisition is required for parcels currently owned by Ramsey County. Approximately 224 acres is

anticipated for full acquisition but is dependent on availability of properties along the bluff line with an anticipated timeline of 20+ years. Anticipated cost for full long-term acquisition is approximately \$57,512,000.

Fish Creek Open Space

Fish Creek Open Space, located in the southeast corner of Ramsey County neighboring the cities of Saint Paul and Maplewood. The 130 acre site is composed of Fish creek which flows for 1.5 miles from Carver Lake on the east side of Interstate 494 to Pigs Eye Lake on the west side of Highway 61. From Carver Lake to Interstate 494 the creek has a flat gradient and passes through wetlands, wooded slopes, and grasslands. From Interstate 494 to Highway 61 the creek undergoes a large elevation drop and passes through a deep wooded valley with steep slopes. A wooded bluff runs parallel to the creek as it descends the Mississippi River Valley.

The city of Maplewood owns land abutting Fish Creek Open Space and made improvements consisting of a paved trail and parking lot development utilizing both city and county owned property in 2016.

A concept master plan was prepared in 2016 in coordination with the city of Maplewood for vehicular access, trails, access to fish creek, and programming activities throughout the open space. This plan was further defined as a part of community engagement for the Battle Creek Regional Park Master Plan. Due to the size and proximity to Battle Creek, Ramsey county has been interested in incorporating Fish Creek Open Space into the Regional Park System along with the land owned by the city of Maplewood.

Fish Creek Open Space has a diverse range of natural resource land components that need to be protected and have unlimited restoration opportunities. The diverse range of land habitat components make this area unique and is the bases for why this area should be included within the regional park system. The key feature is Fish Creek and associated bluff/ravine areas, which is located on the Ramsey County section but, this area provides key components for addressing natural resource protection. The Maplewood section has critical upland mixed woodland and prairie areas that are key buffers to Fish Creek and surrounding bluff and ravine areas. These unique land features advance the priority for establishing measures for improving climate resilience and stormwater management to surrounding areas.

Fish Creek Open Space will greatly enhance access to parkland for nature-based programming and education opportunities. Fish Creek is anticipated to be connected to Battle Creek Regional Park with long-term trail connections through the Mississippi River Bluff Protection Open Space Area. Additional long-term trail connections to Fish Creek could provide access to the Point Douglas Regional Trail and Mississippi River Trail along Point Douglas.

No acquisition cost will be required for this property since it is owned by Ramsey County. It is anticipated the timeline for implementation of recreational developments within Suburban Pond Open Space will vary between 0-20 years. It is anticipated that the Maplewood owned parcels of Fish Creek would be acquired through a land transfer and that there would be no acquisition costs for these properties. Future acquisition is proposed for adjacent residential properties and long-term expansion of Battle Creek Regional Park when properties become available from a willing seller. At this time the acreage and acquisition cost are undetermined and is dependent on availability of properties surrounding Fish Creek.

Publicly Held Properties

Minnesota Department of Transportation Parcels

The Minnesota Department of Transportation owns several properties along the east side of Highway 61 which border Battle Creek Regional Park. Ramsey County is interested in including these properties as a part of Battle Creek Regional Park. Some access agreements will need to be secured as one of the properties holds a pumping station for sewer interceptor lines.

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Port Authority of Saint Paul

The Port Authority of Saint Paul owns a parcel which abuts the Pig's Eye Island Heron Rookery Scientific and Natural Area. Ramsey County is interested in acquiring this property to add to the total footprint of the scientific and natural area, further protecting the heron rookery.

Residential Properties

There are many residential properties including inholdings within the Battle Creek Segment of the park along Battle Creek Road that Ramsey County is interested in acquiring. The inclusion of these properties would provide numerous benefits to Battle Creek Regional Park including trail connectivity, an additional trail head space, and the possibility of closing Battle Creek Road and connecting two major park segments.

Additionally, there are many properties along the river bluffs within the Mississippi River Corridor Critical area surrounding the Mississippi River Bluffs Open Space and Fish Creek Open Space that the county would like to incorporate into the regional park. This is a far reaching and long term goal to connect the two park spaces. This connection would provide a vital link that would provide recreational and natural resource related amenities.

Residential properties would only be acquired when land becomes available and from willing sellers.

527 Battle Creek Road is a residential property of importance to the Battle Creek Regional Park Master Plan. This property would provide a critical access point and trail head for the regional park. Acquisition cost for this property including stewardship costs is approximately \$1,062,945. It is anticipated that the timeline for implementation of recreational development on this property will vary between 0-20 years.

Please see the table on pages 53-54 and the Battle Creek Regional Park Acquisitions map on page 55 for an overview of proposed boundary adjustments.

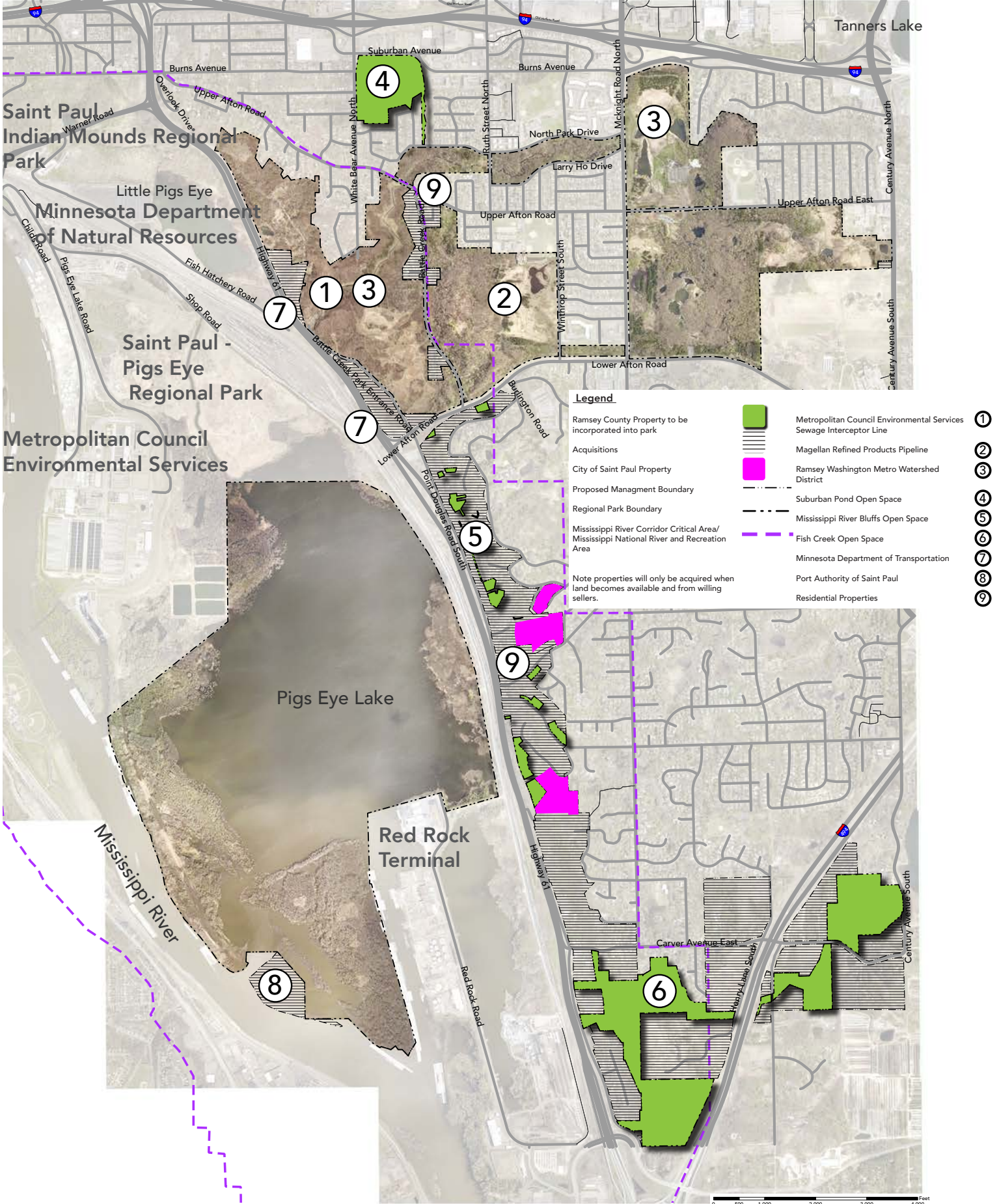
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Parcel ID	Natural Resource Quality	Recreational Benefit	Acres
Existing Administrative Boundary / Park Acreage			1,891.23
Proposed Management Boundary - Ramsey County Suburban Pond Open Space			
#022822220072	Generally low with areas of moderate quality	Trails, trailhead, park connectivity	32.73
Proposed Management Boundary - Ramsey County Mississippi River Bluffs Open Space			
#112822210018	Low to moderate	Bluff preservation, trails, park connectivity	0.81
#112822240067	Low to moderate	Bluff preservation, trails, park connectivity	0.32
#112822240083	Low to moderate	Bluff preservation, trails, park connectivity	0.45
#112822240074	Low to moderate	Bluff preservation, trails, park connectivity	0.23
#112822310075	Low to moderate	Bluff preservation, trails, park connectivity	1.07
#112822310077	Low to moderate	Bluff preservation, trails, park connectivity	0.77
#112822310010	Low to moderate	Bluff preservation, trails, park connectivity	0.08
#112822310059	Low to moderate	Bluff preservation, trails, park connectivity	0.05
#112822310056	Low to moderate	Bluff preservation, trails, park connectivity	0.23
#112822310072	Low to moderate	Bluff preservation, trails, park connectivity	3.35
#112822340036	Low to moderate	Bluff preservation, trails, park connectivity	1.13
#112822430085	Low to moderate	Bluff preservation, trails, park connectivity	1.49
#142822120050	Low to moderate	Bluff preservation, trails, park connectivity	0.04
#142822120071	Low to moderate	Bluff preservation, trails, park connectivity	0.78
#142822130100	Low to moderate	Bluff preservation, trails, park connectivity	1.11
#142822130048	Low to moderate	Bluff preservation, trails, park connectivity	0.13
#142822130098	Low to moderate	Bluff preservation, trails, park connectivity	1.73
#142822130051	Low to moderate	Bluff preservation, trails, park connectivity	0.59
#142822420040	Low to moderate	Bluff preservation, trails, park connectivity	5.22

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Subtotal			19.58
Proposed Management Boundary - Ramsey County & Maplewood Fish Creek Open Space			
#232822140018	Moderate to high	Bluff preservation, trails, education opportunity	25.72
#242822330001	Moderate to high	Bluff and creek preservation, trails, education opportunity	34.84
#232822440053	Moderate to high	Bluff preservation, trails, education opportunity	1.5
#242822230041	Moderate to high	Bluff and creek preservation, trails, education opportunity	23.77
#242822240007	Moderate to high	Bluff and creek preservation, trails	0.91
#242822130003	Moderate to high	Bluff and creek preservation, trails	16.63
#242822120002	Moderate to high	Bluff and creek preservation, trails	2.97
#242822110006	Moderate to high	Bluff and creek preservation, trails	32.23
#242822320004	Moderate to high	Trails, prairie restoration, parking, trailhead, nature center, education opportunities	68.15
#242822210013	Moderate to high	Trails, natural resource preservation	26.57
Subtotal			233.29
Proposed Management Boundary - Port Authority of Saint Paul			
#222822410001	Moderate	Limited - abuts scientific and natural area	8.8
Proposed Management Boundary - Minnesota Department of Transportation			
#0328224200008	Low to moderate	Trails, education opportunities, natural resource protection	9.82
Proposed Management Boundary - Miscellaneous Unplatted Property and Residential Properties			
	Low to moderate	Bluff and creek preservation, trails, education opportunities, natural resource protection	357.54
Proposed Management Boundary / Park Acreage			2,552.99

BATTLE CREEK REGIONAL PARK FUTURE BOUNDARY ADJUSTMENTS AND EASEMENTS



The Plan

DEVELOPMENT CONCEPT

Battle Creek Regional Park is the largest regional park under the care of Ramsey County Parks & Recreation. This master plan has a long-term goal of expanding the administrative boundary of the park to include areas of county open space as well as long-term acquisitions to link Battle Creek Regional Park and Fish Creek Open Space while preserving bluff habitat and developing recreational opportunities throughout. Battle Creek is in a rapidly growing and diverse area of Saint Paul and Maplewood, and is linked to the greater Metropolitan Park System through regional trails and parks adding to the overall connectivity of the system.

The park is also home to restored and remnant prairies, varied wildlife, and other unique vegetation types and ecosystems that should be maintained, preserved, and restored. The park's unique size and natural setting is one element that brings people to Battle Creek Regional Park and can not be easily found elsewhere in the metropolitan core area.

Many types of recreational users have all enjoyed and shared Battle Creek Regional Park and through thoughtful development of recreational infrastructure and amenities all park users will continue to find joy in Battle Creek Regional Park. Care and thoughtful planning of any new development within the park shall be practiced in order to preserve the park's natural beauty and unique features. Community members strongly advocated that new development be clustered at existing nodes of development.

Regional Development

Long term development of the park has identified land connecting the Battle Creek and Fish Creek segments of the park for acquisition. Upon acquisition of this land amenities are proposed along the bluffs including:

- Additional park access
- Scenic overlooks
- Natural surface trails along with a major multi-use connecting trail between the Battle Creek and Fish Creek segments of the park
- A multi-use trail paved trail along the Interstate 494 and Century avenue corridor which would create a loop connecting the surrounding neighborhood
- Additional picnicking opportunities

As the corridor is acquired and developed the area has a very unique ability to provide trail connections to adjacent neighborhoods while protecting and preserving bluff landscapes and wildlife habitat. The long term development of the regional connections and corridor will require additional planning as land is acquired from willing sellers.

Pigs Eye Lake Development

Development of recreational amenities and programming opportunities near Pigs Eye Lake are a long term goal of the master plan. Ramsey County acknowledges that issues including environmental contamination and clean up, public safety, and compatibility of recreational use with surrounding land use must be resolved before any new visitor access or recreational amenities can be provided. It will be important for Ramsey County to continue to work with adjacent land owners, stakeholders, and community members in developing recreational amenities.

Proposed recreational amenities in the Pigs Eye Lake segment of the park include:

- Pigs Eye Island Heron Rookery Scientific and Natural Area
 - The scientific and natural area should be left undisturbed in any new development proposed within the Pigs Eye Lake segment

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- Acquire parcel of land currently owned by the Saint Paul Port Authority that abuts the island
- Grade separated crossing(s) of Highway 61 and the railroad corridor
 - Provide additional pedestrian and bicycle access into the Pigs Eye Lake segment of the park
 - Future planning will be required, and coordination with community members, adjacent land owners, stakeholders, the Minnesota Department of Transportation, the railroad entities, and others will be necessary.
 - Possible proposed future crossings located at:
 - The intersection of Lower Afton Road and Highway 61
 - Bailey Road
 - Carver Avenue
 - Highwood Avenue
- Individual facilities and recreational amenities should be designed and constructed to net-zero standards to further support the goals of the Ramsey County Parks & Recreation Energy Action Plan
- Island building project in coordination with the United States Army Corps of Engineers
 - A separate master plan amendment has been produced regarding the island building project which includes:
 - Sequencing of natural resource and public safety improvements for Pigs Eye Lake
 - Mississippi River Corridor Critical Area policy standards and criteria
 - A public engagement process

Proposed development for the Pigs Eye Lake segment of Battle Creek Park was informed through community engagement and past planning efforts to show potential future access points and recreational amenities. Ramsey County acknowledges that issues including environmental contamination and clean up, public safety, and compatibility of recreational use with surrounding land must be resolved before any new visitor access or recreational amenities can be provided. The Pigs Eye Lake Master Plan Amendment was produced to highlight this area and take a closer look at natural resource related projects and environmental clean up.

Additional coordination for necessary security steps will need to be considered for improvements within the Pigs Eye Lake segment of Battle Creek Regional Park. For example, the Metropolitan Wastewater Treatment Plant follows the strategic guidance laid out in the National Infrastructure Protection Plan for security of critical infrastructure. Additional coordination and necessary security steps will be needed to mitigate security concerns for implementation of projects within the Pigs Eye Lake area.

The Pigs Eye Lake Segment is located in a heavily industrialized area, close to the Metro Wastewater Treatment Plant and other major air emissions sources. Prior to planning and implementing recreational amenities, Ramsey County Parks & Recreation will need to evaluate the long-term health impacts of air quality on public users of proposed amenities. In addition, the land use designation for the Metro Plant is industrial and the plant is a highly industrialized facility with safety and use consistent with that designation. Noise, odors, emissions, and traffic are present at levels that are consistent with industrial land use and that meet the Metro Plant's permits but which raise concerns about conflicts between the proposed recreation and the current land use designation in the surrounding area. While the Metropolitan Council Environmental Services has invested in reducing odor generation at the Metro Plant, further reductions are unlikely to mitigate odors to a significant degree. Noise, traffic, and emissions from Metro Plant operations and maintenance activities may also negatively impact the public's ability to enjoy recreational activities.

In addition to the challenges posed by conflicting land uses near Pigs Eye Lake there are also contamination and public safety issues that need to be addressed prior to enabling future recreation development and safe public use of the Pigs Eye Lake Segment of Battle Creek Regional Park. The Pigs Eye Lake Master Plan Amendment was written to address the natural resources existing conditions and future plans for the Pigs Eye Lake Segment. Next steps for Public Safety Planning Activities include:

- Secure funding for planning activities
- Initiate an agency-wide planning team to determine project scope, objectives, coordination, stakeholders, agency

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and public engagement, funding strategy, and process for developing a long-range plan for remediation. Initiate an agency and public engagement process

- Initiate additional site assessments and testing to determine the extent of contaminants within Pigs Eye Lake and surrounding areas
- Develop an agency-wide monitoring and stewardship plan
- Other required planning activities as required dependent on outcomes from long-term planning
- Secure funding for remediation

Recreation amenities which have been identified as a result of public engagement for the Battle Creek Regional Park Master plan such as fishing, canoe and kayak use/launches, and providing access to the shore of Pigs Eye Lake could bring park users into contact with water and soil that has been found to be contaminated. Access to the Pigs Eye Lake Segment of the park is a long-term goal of Ramsey County which can not be realized until all appropriate investigations into environmental contamination are complete and mitigation strategies concluded and verified. Ramsey County Parks & Recreation is committed to working with all stakeholders and neighboring landowners to address the environmental issues surrounding Pigs Eye Lake and to continue to develop concepts for future recreational activities that are safe and compatible with land uses in the area.

For the full report on the natural resources existing conditions and next steps in the Pigs Eye Lake segment of Battle Creek Regional Park, please see the Pigs Eye Lake Master Plan Amendment.

Recreation Development

Recreational Development for Battle Creek Regional Park includes a mixture of active and passive recreational opportunities including but not limited to walking, hiking, bicycling, off-road cycling, cross-country skiing, birdwatching, canoeing, kayaking, and interpretive and educational programming and amenities. Existing trailheads and pedestrian access points have planned enhancements to improve site amenities as well as safe access into the park. There is a desire to find a location for a community nature center and recreation center with improved amenities. Battle Creek Regional Park's unique and attractive setting along the Mississippi River bluffs and floodplain have provided the strong desire to expand the park and the many active and passive recreation opportunities and amenities that it currently provides. Some of the major amenities proposed to be enhanced or newly implemented in addition to current amenities in this master plan include:

- Gain additional access into the Pigs Eye Lake segment of the park
- New Trailhead locations along Battle Creek Road, within the Fish Creek Segment of the park, and Suburban Pond
- 9.44 miles of paved multi-use trails
 - 7.41 miles existing
 - 2.03 miles proposed
- 4.49 miles of natural surface hiking and walking trails
 - 2.23 miles existing
 - 2.9 miles proposed
 - Note: select trails within the off leash dog area are proposed to be paved for accessibility
- 10.3 Miles of existing cross country ski trails which are mowed for hiking and walking in the summer months
- 12.14 miles of combined hiking and off road cycling trails
 - 7.92 miles existing
 - 4.22 miles proposed
- All trail systems are intended to be looped systems originating and returning to major trailheads, increasing the enjoyment and minimizing or removing dead end routes
- Safe pedestrian access points

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- Interpretive and educational programming and signage to go along learning trail corridors
- Improvements to the off leash dog area
- Additional picnicking opportunities
- Working relationship with the Minnesota Department of Natural Resources to stock family friendly species within the storm ponds
- Site amenities including benches, trash and recycling bins, wayfinding signs, water fountains etc.
- Nature, history and recreation center redevelopment or a new building to house additional features not available at the current recreation center
- Waterworks redevelopment or reconstruction

Multi-Season Trailhead and Nature Center

The most significant new development that was advocated for was the redevelopment of the recreation center to also include aspects commonly found in a nature center. This redevelopment would also include improved amenities for programming and recreation currently found in the Battle Creek Recreation Center. As a part of this redevelopment, additional parking should also be explored. The final size and use will need to be determined with an additional study and master plan amendment revolving around the specific needs and costs of implementation. Public engagement and input has helped to identify some possible uses including:

- Nature/History/Outdoor Recreation Center
- Restrooms
- Warming area for cross-country skiing
- Locker rooms for active recreation users such as off road cyclists and cross-country skiers
- Programming and classroom space
- Recreation staging area
- Picnicking or shelter opportunities
- Wayfinding signage
- Enhanced trail access
- Staging and teaching area for cross-country skiing, off-road cycling and other recreational sports
- Site amenities such as benches, trash and recycling bins, bicycle racks, enhanced stormwater and resilient site design, and safety measures such as cameras and lighting
- Individual facilities and recreational amenities should be designed and constructed to net-zero standards to further support the goals of the Ramsey County Parks & Recreation Energy Action Plan

As a part of any future study or master plan amendment launched to look at the viability of redevelopment of the Battle Creek Recreation Center further community engagement will be necessary. This study should include defining needs such as storage, parking, new programming needs, and programming partners. A refined concept will need

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to be created to understand building expansion, parking, conflicts, affects to other recreation facilities such as the play area, recreation fields and building entrances. Community engagement shall again be stressed throughout this process.

Ramsey County has also located other areas within the park that may be options for a newly developed building to house some or all of the additional amenities identified through public engagement as a supplement to the existing recreation center. A history/nature/outdoor recreation center may also be located on acquired land along Battle Creek Road or within the Fish Creek segment of the park.

Suburban Pond Trailhead

A new trailhead is proposed for Suburban Pond which would increase access to the park and provide additional recreational amenities within Battle Creek Regional Park. This trailhead was identified through community engagement and the existing concept plan for the open space. Amenities proposed for this trailhead would include:

- Limited parking
- Restrooms
- Picnicking opportunities, either open picnic tables or small shelter(s)
- Wayfinding signage
- Site amenities such as benches, trash and recycling bins, bicycle racks, enhanced stormwater and resilient site design, and safety measures such as cameras and lighting
- The trailhead would provide connection to the trail encompassing Suburban Pond and south to the Battle Creek Corridor zone of Battle Creek Regional Park
- Individual facilities and recreational amenities should be designed and constructed to net-zero standards to further support the goals of the Ramsey County Parks & Recreation Energy Action Plan

Upper Afton Road Active Recreation Area Trailhead

The existing trailhead serving the active recreation zone and associated water park, playground, pavilion and shelter should be reassessed with any future redevelopment of the parking lot or site amenities. Additional parking should be investigated along with enhanced stormwater and resilient site design. Ramsey County should look to the Energy Action Plan to investigate the possibility of construction which would meet net-zero standards to further support the goals of the Energy Action Plan.

Upper Afton Road Off-Leash Dog Area and Overflow Parking Trailhead

The trailhead located at the north entrance to the off-leash dog area is well utilized and would benefit from the addition of site amenities including:

- Additional parking spaces
- Restrooms
- Wayfinding signage

- Enhanced trail access
- Site amenities such as benches, trash and recycling bins, bicycle racks, enhanced stormwater and resilient site design, and safety measures such as cameras and lighting
- Individual facilities and recreational amenities should be designed and constructed to net-zero standards to further support the goals of the Ramsey County Parks & Recreation Energy Action Plan

Lower Afton Road Off-Leash Dog Area Trailhead

The Trailhead located along Lower Afton Road at the entrance to the off-leash dog area would benefit from the addition of site amenities including:

- Additional parking spaces
- Restrooms
- Wayfinding signage
- Enhanced trail access
- Site amenities such as benches, trash and recycling bins, bicycle racks, enhanced stormwater and resilient site design, and safety measures such as cameras and lighting
- Individual facilities and recreational amenities should be designed and constructed to net-zero standards to further support the goals of the Ramsey County Parks & Recreation Energy Action Plan

Park Entrance Road Trailhead

The Trailhead located at the lower reaches of Battle Creek has been a popular destination since Battle Creek Regional Park's earliest Days. The trailhead would greatly benefit from the addition of site amenities including:

- Additional parking spaces
- Restrooms
- Wayfinding signage
- Enhanced trail access
- Additional Picnicking opportunities which could include open picnic tables or small shelter(s) along the creek corridor
- Site amenities such as benches, trash and recycling bins, bicycle racks, enhanced stormwater and resilient site design, and safety measures such as cameras and lighting
- Individual facilities and recreational amenities should be designed and constructed to net-zero standards to further support the goals of the Ramsey County Parks & Recreation Energy Action Plan

In addition to the site amenities located at the trailhead, the access gate is proposed to be moved to near the intersection of Lower Afton Road and Park Entrance Road.

Bluff Top Trailhead

527 Battle Creek Road is a park inholding and acquiring this property when it becomes available and from a willing

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seller would greatly improve access of Battle Creek Regional Park. Community engagement has indicated that development be thoughtful and whenever possible not encroach upon natural areas. This property provides the opportunity for an additional trailhead without compromising this goal. Any other trailhead development along the bluffs would injure native habitats, recreational facilities and have an adverse effect on the aspects of Battle Creek Regional Park that so many community members have identified as important to them. Development of this trailhead would provide a space for:

- A possible location for the outdoor recreation/history/nature center
- A staging area for recreational sports such as off-road cycling and cross-country skiing
- Restrooms
- Picnicking or shelter opportunities
- Parking
- Enhanced trail access
- Staging and teaching area for cross-country skiing, off-road cycling and other recreational sports
- Site amenities such as benches, trash and recycling bins, bicycle racks, enhanced stormwater and resilient site design, and safety measures such as cameras and lighting
- Individual facilities and recreational amenities should be designed and constructed to net-zero standards to further support the goals of the Ramsey County Parks & Recreation Energy Action Plan

Fish Creek Trailhead at Carver Avenue East and Henry Lane South

A new trailhead is proposed for the Fish Creek segment of the park at the intersection of Carver Avenue East and Henry Lane South. The trailhead would include:

- Restrooms
- Parking
- Enhanced trail access
- Picnicking or shelter opportunities
- Wayfinding signage
- Playground

Fish Creek Trailhead at Henry Lane South

The existing trailhead at the end of Henry Lane South currently requires community members to turn around and park along the side of the road. The trailhead would benefit from the following amenities:

- Restrooms
- Parking
- Enhanced trail access

- Picnicking or shelter opportunities
- Wayfinding signage
- Potential area for nature/history center development

Park Access Points

Battle Creek Regional Park is very segmented, requiring community members who are walking, bicycling or accessing the park by anything other than a vehicle to cross roads and intersections at grade. Ramsey County should take all necessary precautions to ensure that these access points are as safe as possible. Access points should include additional wayfinding signage to complement the physical access points.

Typical road crossing enhancements may include:

- Creative or unique painting schematic
- Rapid flashing beacons
- Additional signage
- Pedestrian refuges
- Speed Bumps
- Neckdowns
- Warning Signs
- Speed reductions
- A combination of strategies

Select intersections and crossing points warrant investigation of grade separated crossings including:

- The intersection of Lower Afton Road and Burlington Avenue
- Upper Afton Road separating the Battle Creek and Bluff Corridor from the Battle Creek Connection
 - Ramsey County has investigated the potential of an underpass here in the past, and while feasible may be cost prohibitive until such a time as road reconstruction takes place
- Ruth Street bisecting the Battle Creek Connection zone
 - Ramsey County has investigated the potential of an underpass here in the past, and while feasible may be cost prohibitive until such a time as road reconstruction takes place

Battle Creek Road between the Battle Creek and Bluff Corridor and the Winter Recreation Area is another area that needs further planning. Trails cross at a few locations and cars are coming around corners creating potential conflicts. In addition to the enhancements listed above grade separated crossing and closure of Battle Creek Road should be investigated. Closure of the road would allow for a seamless integration of the park while grade separated crossings are likely to be cost prohibitive.

Learning Trail Corridors

Learning trail corridors have been identified in 3 locations within the Battle Creek Segment of the park. One connects to the entrance across from Battle Creek Middle School, one from Carver Elementary School and the final location starts and ends at the Battle Creek Recreation Center. These corridors were identified through community

The Plan

engagement and meetings with various stakeholders and partner agencies. Battle Creek Middle School and Carver Elementary already utilize the park to take classrooms out for in field education. Friends of the Mississippi and Ramsey County also lead programming within Battle Creek Regional Park.

Learning trail corridors would utilize existing trails which would be enhanced through the implementation of additional interpretive and educational signage, as well as outdoor classrooms. Battle Creek Middle School has expressed the interest in a point along the trail to access the creek for classroom activities. Outdoor classrooms can be as simple as a space off to the side of the trail for a gathering space and some log benches. Interpretive and educational signage would also provide the opportunity for self-lead walks to learn about native vegetation, wildlife, park history, area history, and Native American history.

The trail corridors will require further planning to determine exact programming and educational needs, as well as the number and types of signs, outdoor classrooms and related site amenities to support the goals of the individual corridors. Ramsey County will need to engage the public, community members, stakeholders, partnering agencies, the Native American community to determine the final information, locations, and types of education within the learning trail corridors.

Waterworks

Through community engagement it is clear that Waterworks is a much loved and desirable asset to Battle Creek Regional Park. This was more apparent during pop up engagement sessions and among younger and more racially diverse community members. While the exact outcome for Waterworks was undecided redevelopment or reconstruction of waterworks, which is needed, includes:

- Destination water park for younger community members (replace as is)
- Destination water park for all ages
 - Small children area
 - Wading pool
 - Slides
 - Sand Play
 - Deeper pool for older ages and lap swimming
- Free splash pad

Ramsey County will need to further examine the potential of the site for a water park and what the outcome will be. Community engagement will be essential along with a detailed study addressing the costs, community needs and final development of the water park. An amenity involving water play is desirable and Battle Creek Regional Park is the only park in the system without a beach or other natural water body suitable for interaction with water.

Fishing

Fishing opportunities were indicated throughout community engagement, but were stressed more by racially diverse community members and at the Battle Creek Middle School engagement. Ramsey County has had preliminary discussions with the Minnesota Department of Natural Resources Fishing in the Neighborhood program. The program stocks is aimed at increasing angling opportunities, public awareness and environmental stewardship within the seven-county metro region. As the state's population has become increasingly urbanized, it has become evident that there is a growing need for easily accessible fishing opportunities close to where people live. Fishing in the Neighborhood builds on existing urban fisheries management activities such as stocking, aeration and enhancement of shore-fishing and pier-fishing opportunities. By reaching out to a wider variety of interests, such as local parks departments, lake associations and schools, Fishing in the Neighborhood promotes a greater awareness of aquatic habitat needs and the importance of good stewardship. By getting more people involved in angling, Fishing in the Neighborhood will assure that this family-oriented activity continues to be one of Minnesota's most popular pastimes. Stocking the storm ponds located in the active recreation area would allow Ramsey County to promote the shared goals of environmental stewardship and awareness of aquatic habitats. Recreational amenities and opportunities in

addition to the stocking of fish would include:

- Fishing Access
 - Fishing Pier or boardwalk
 - Fishing nodes along the storm water ponds
- Programming introducing fishing to new and experienced audiences for a family friendly experience

Cross-Country Skiing

Cross country skiing is an area of recreational demand that was greatly supported throughout public engagement. There has been a long term goal to turn the Winter Recreation Area into a destination for cross country skiing in the county. Battle Creek is unique for its ability to provide a space which is a homologated system, a rarity anywhere in the world. The trail system exists but there is a desire to add lighting, snow making, improved facilities, and a staging area for races and events. The staging area may include:

- Start Gates
- A timing booth
- Ski repair and waxing stations, space for temporary outdoor seating
- Other components compatible with a premier cross country ski destination

There are 10.3 miles of cross country ski trails available when weather allows for the trails to be groomed, snow-making would make the trails at Battle Creek much more reliable. This reliability is paramount for the many schools, community members, recreation groups and others who consistently rate Battle Creek as their favorite location for cross country skiing.

Off Road Cycling

Off road cycling and trail riding have continued to gain in popularity throughout the metropolitan region. In addition to adult riders, schools are creating more off road cycling clubs and leagues, such as the Minnesota High School League, to introduce riders of all abilities at a younger age. Statewide there are over 60 high school clubs in Minnesota, with around 25 clubs in the metropolitan area. In addition to feedback gathered as a part of this master plan process, there was also a demand placed on off road cycling heard during public outreach for the 2018 System Plan and Off Road Cycling Master Plan.

Battle Creek Regional Park is currently the only county facility and the only park in Ramsey County to offer off road cycling trails. Off road cyclists and clubs such as Minnesota Off Road Cyclists have been primarily responsible for the implementation and build-out of most of the combined hiking and off road cycling trails within Battle Creek regional park and have been active since the earliest days of the park.

There are a number of trails that cross each other throughout the park, however these have been limited as much as possible. In the event that a vehicular road is crossed by a trail, additional signage or other enhanced crossing elements along the trail and road will notify drivers and trail users of the intersection and to use caution. In the event that two trails cross each other and on shared trails, faster moving recreational elements will be asked to stop for slower moving recreation elements. In areas where there may be crossing conflicts with cross country ski trails, hiking trails, off road cycling trails, and paved trails alternate crossing improvements should be considered to minimize conflicts, improve safety, and to allow through movement dependent on the location and activity.

There are 12.14 miles of combined hiking and off road cycling trails proposed as a part of this plan. In addition to the trails themselves a number of recreational elements are also proposed including:

The Plan

- Wayfinding signage at all trailheads
- Rules Signs indicating proper etiquette on trails, when to ride, whom has the right of way, etc.
- Skills area
- Bike repair stations
- Mileage markers and associated trail signage and wayfinding throughout the trail system
- Winter use of trails is not allowed

The full Off Road Cycling Master Plan and Summary of Engagement can be found in the appendix.

Hiking, Walking and Trail Running

Hiking and walking within Battle Creek remain some of the most common activities locally as well as regionally in parks. With a proposed 13.92 miles of combined hiking and off road cycling trails, 10.3 miles of mowed grass trails, 9.45 miles of multi-use paved trails and 4.5 miles of dedicated natural surface hiking trails for a total walking and hiking system of 38.17 miles providing the most comprehensive access to the park of any recreation group. Within the Fish Creek segment of the park dedicated natural surface trails along the bluffs for hiking and walking are provided where there is no shared use of off-road cycling allowed.

Winter Hiking and Snowshoeing

Throughout public engagement Ramsey County heard from residents who enjoy winter hiking and snowshoeing in Battle Creek Regional Park. Generally these users report enjoying the trails west of Battle Creek Road, however they prefer to park at the Battle Creek Recreation Center trailhead. The trails leading from the recreation center to the trails in the Battle Creek and Bluffs Corridor are all signed for cross-country skiing only for winter use. Generally this does not cause too much conflict if pedestrian traffic stays to the side of the groomed trails. Ramsey County shall further study the use of trails for winter use. Currently the park trails are dominated by a single sport, cross country skiing. While the homologated trails should remain untouched other areas should be looked at for expanded use outside of the snow-making operations that are proposed.

The Trails west of Battle Creek would be a good area to look at for snowshoeing and hiking winter uses while maintaining some cross country ski opportunities. Until the Bluff Top Trailhead is established a trail to the side, or new separated trail from the recreation center through the Winter Recreation area should be established to aid in accessibility of this area.

Ramsey County may need to further engage community members, stakeholders, partnering agencies and others in regards to the development of winter recreation trails in Battle Creek Regional Park to determine final uses, areas, and trail lengths for winter snowshoeing and hiking.

Off-Leash Dog Area

Ramsey County finalized a plan for off-leash dog area in 2018. Improvements to the off-leash dog area should follow the findings of that plan and community engagement for the Battle Creek Regional Park Master Plan which include:

- The addition of an accessible route for the inclusion of all park users as well as maintenance operations
- Accommodate an area within the off-leash dog area for small dogs only by fencing off a portion of the existing site with a double gated entry
- Accessible concrete bench pads and trash receptacles
- Bring a dog and human drinking fountain and water line up to the off-leash dog area entrances

- Double gated entry at the north and west entrances
- Removal of miscellaneous and duplicative signage on fences and relocate to a bulletin board/rules sign
- Standardize rules signs at entrances, currently not the same rules are posted at each entrance
- Install trash receptacles throughout the off-leash dog area along with waste bag dispensers.

A copy of the Off-Leash Dog Areas Master Plan can be found in the appendix.

Wayfinding, Rules and Trail Signage

Wayfinding is the way people navigate from place to place. A consistent system is essential for orientation, navigation and public safety. Signage should be consistent across the system and should guide trail corridor users to local services, cultural destinations, transportation connections, activity centers, recreational destinations, cities, neighborhoods, and other landmarks. Battle Creek Regional Park will utilize the existing Ramsey County Parks & Recreation Department Wayfinding Master Plan for consistency with other regional parks and trails. Ramsey County Parks & Recreation is currently starting to plan for an updated wayfinding and signage plan, the new plan upon completion would become the guiding document for wayfinding, rules and trail signage within Battle Creek Regional Park.

All trailheads and parking lots should have standardized signage including park wayfinding and rules signs to aid in park accessibility and knowledge of where amenities are located. In Addition select trailheads and parking lots should have specialized signage for trail systems including:

- Battle Creek Recreation Center
 - Wayfinding and rules sign for cross country ski system
 - Wayfinding and rules sign for off-road cycling system
 - Wayfinding and informational sign for learning trail corridor
- 527 Battle Creek Road Trailhead
 - Wayfinding and rules sign for cross country ski system
 - Wayfinding and rules sign for off-road cycling system
- Park Entrance Road Trailhead
 - Wayfinding and rules sign for off-road cycling system
- Lower and Upper Afton Road Trailheads
 - Wayfinding and rules sign for cross country ski system
 - Wayfinding and rules sign for off-road cycling system

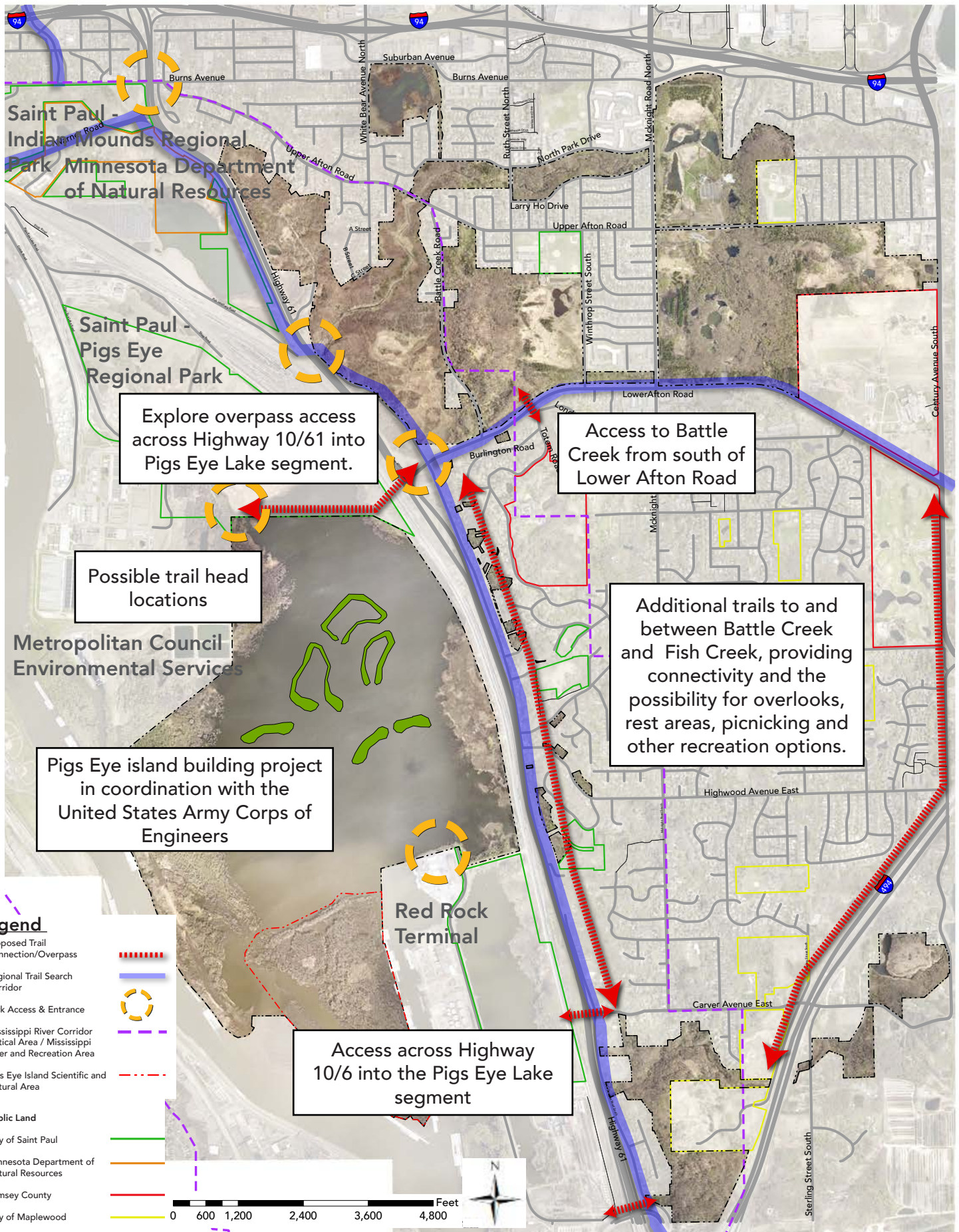
Community access points where pedestrians, bicyclists and others enter the park will also require updated signage. Select access points should also have wayfinding signage. Please see the wayfinding plan on page xx for more information.

Park rules signs will also be posted at all trailheads. Rules for Battle Creek Regional Park include the following:

- General Park Rules
 - No alcoholic beverages except beer and wine
 - Park Hours: 1/2 hour before sunrise to 1/2 hour after sunset
 - Vehicles and trailers permitted only on roadways and parking lots
 - Leashed pets permitted on paved trails only. Owners must clean up pet feces. No pets allowed in picnic areas
 - Bikers and inline skaters must stay on paved trails and yield to pedestrians
 - No motorized vehicles allowed
 - Park ordinance in effect. Enforced by the Ramsey County Sheriff's Department. To report violations, please call 651-767-0640
- Nordic Ski Trails Winter Rules
 - Minnesota Department of Natural Resources ski pass required on all trails

The Plan

BATTLE CREEK CONCEPT MAP - REGIONAL CONNECTIONS



BATTLE CREEK SEGMENT OVERALL CONCEPT MAP

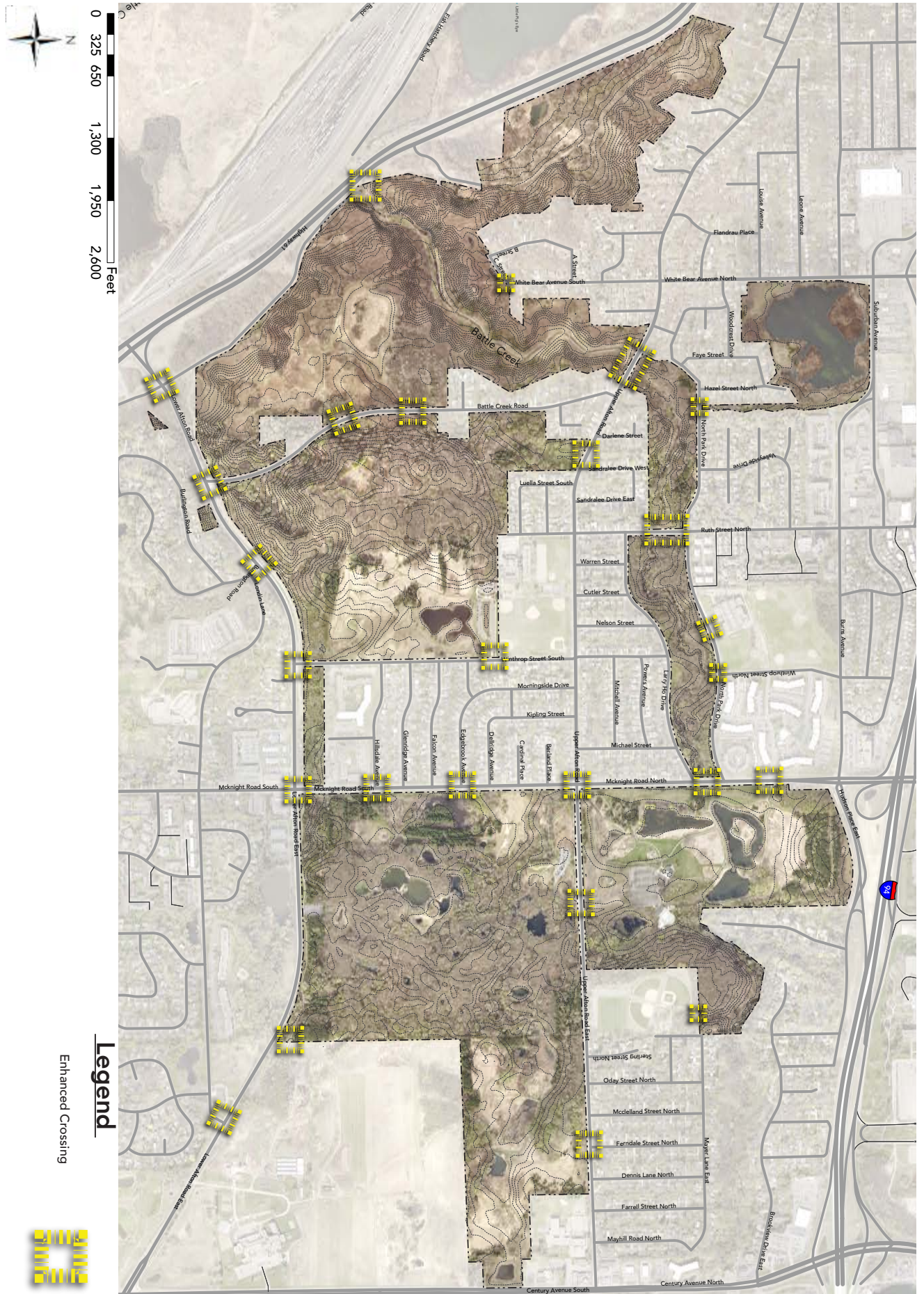


Legend

- | | | | |
|--|--|--|------------------------|
| | Paved Trail | | Pavilion |
| | Existing | | Picnic Shelter |
| | Proposed | | Restrooms |
| | Turf/Art Trail | | Outdoor Nature Station |
| | Existing | | Pavilion |
| | Proposed | | Picnic Shelter |
| | Off Road Cycling/Hiking Trail | | Restrooms |
| | Existing | | Outdoor Nature Station |
| | Proposed | | Pavilion |
| | Nature Trail Corridor | | Picnic Shelter |
| | Regional Trail Search Corridor | | Restrooms |
| | Proposed Acquisition | | Outdoor Nature Station |
| | Education Opportunity | | Pavilion |
| | Mississippi River Corridor Critical Area / Mississippi National Park and Recreation Area | | Picnic Shelter |

The Plan

BATTLE CREEK SEGMENT PEDESTRIAN ACCESS POINTS



BATTLE CREEK SEGMENT PEDESTRIAN ACCESS POINTS

Explore the possibility of separated grade crossings or other enhanced trail connections along Battle Creek Road to better connect the Battle Creek and Bluffs Corridor to the Winter Recreation Area and create a more contiguous Battle Creek Regional Park.

Note: Enhanced access points should also consider additional wayfinding signage to complement physical access features

Grade separated crossing or other enhanced crossing elements at Burlington Avenue to aid in connecting neighborhoods south of Lower Afton Road

Explore possible road underpasses to connect trail segments without crossing at grade for select intersections

Ramsey County Public Works has converted McKnight Road to a 3 lane system and has plans to install pedestrian refuges and other enhanced crossing elements at 3 locations: Villages on McKnight crossing, Edgebrook Avenue, and Hillsdale Avenue.

0 325 650 1,300 1,950 2,600 Feet

Legend

Enhanced Crossing



The Plan

BATTLE CREEK SEGMENT PEDESTRIAN ACCESS POINTS

Note: Enhanced access points should also consider additional wayfinding signage to complement physical access features



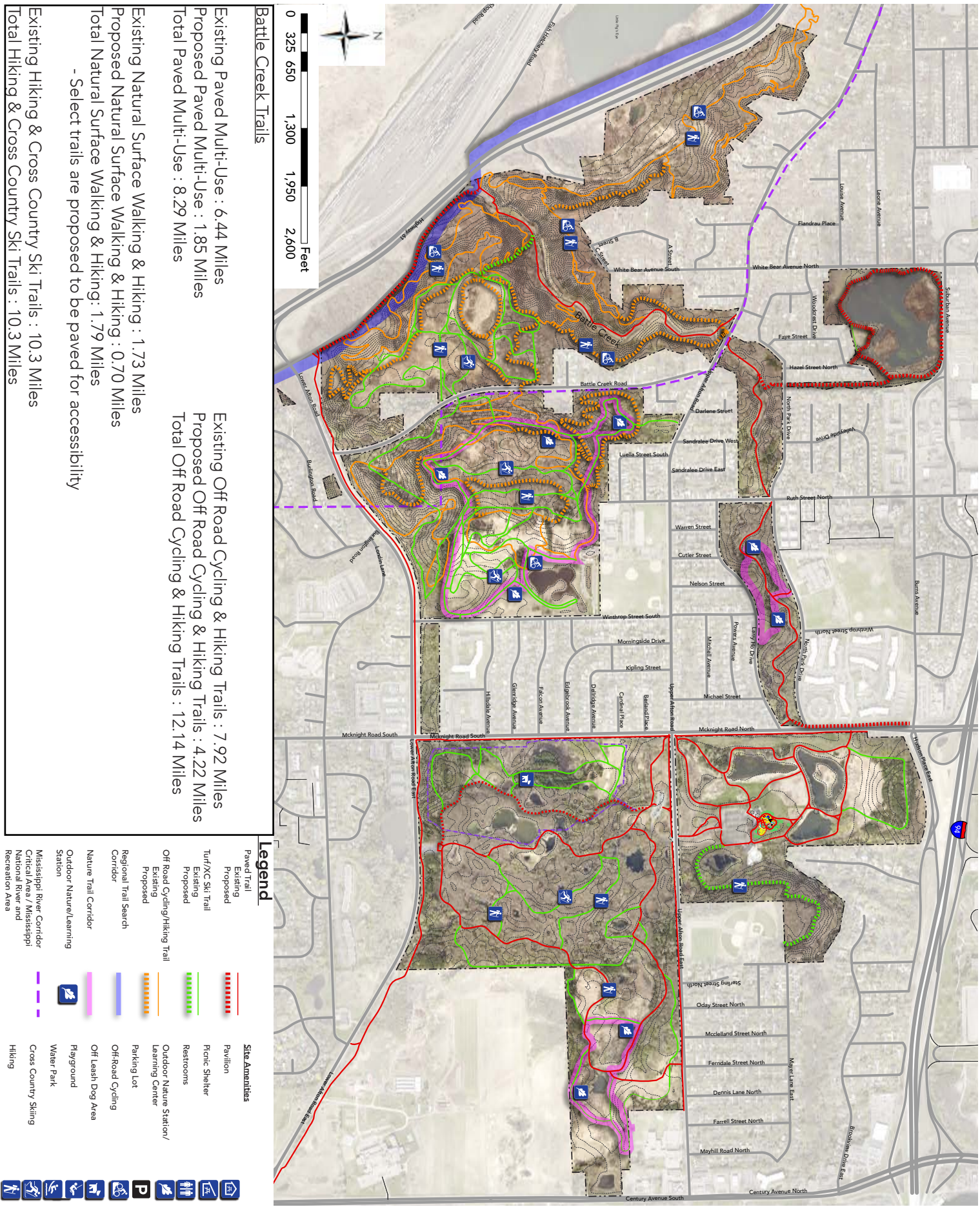
Typical road crossing enhancements may include rapid flashing beacons, additional signage, warnings for motorists or a combination of a number of strategies

Legend

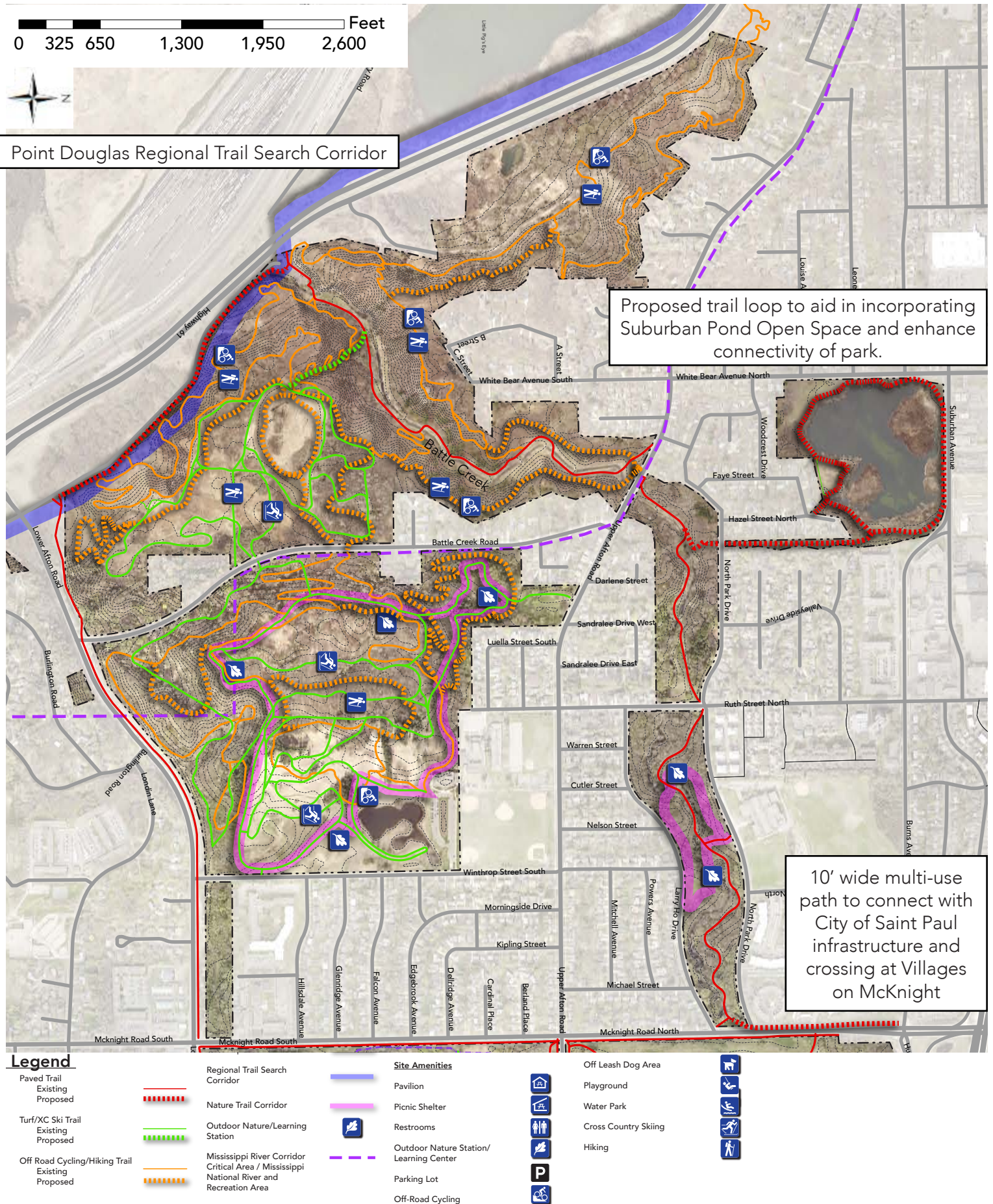
Enhanced Crossing



BATTLE CREEK SEGMENT TRAIL SYSTEM AND AMENITIES



BATTLE CREEK SEGMENT TRAIL SYSTEM AND AMENITIES



BATTLE CREEK SEGMENT TRAIL SYSTEM AND AMENITIES

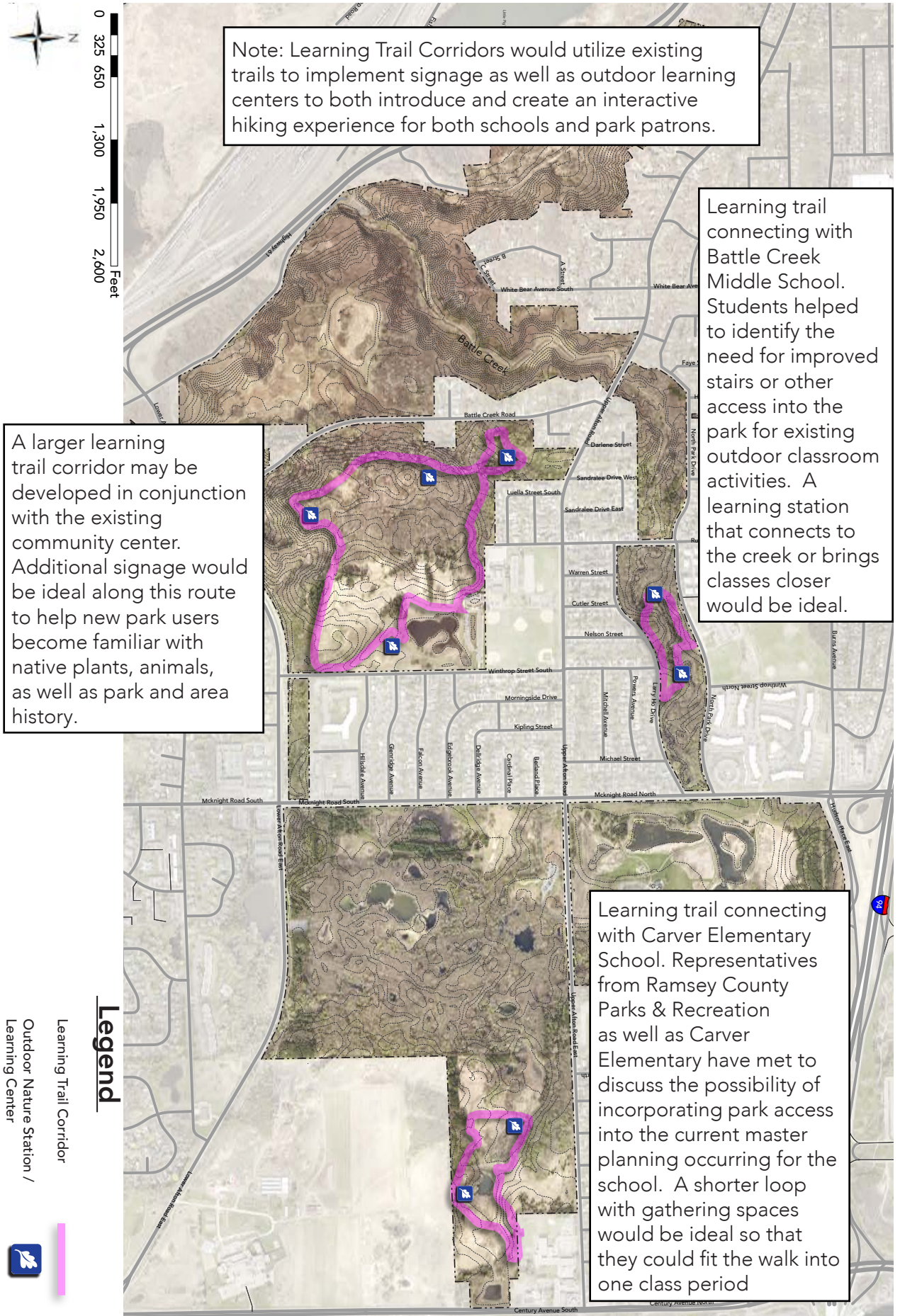


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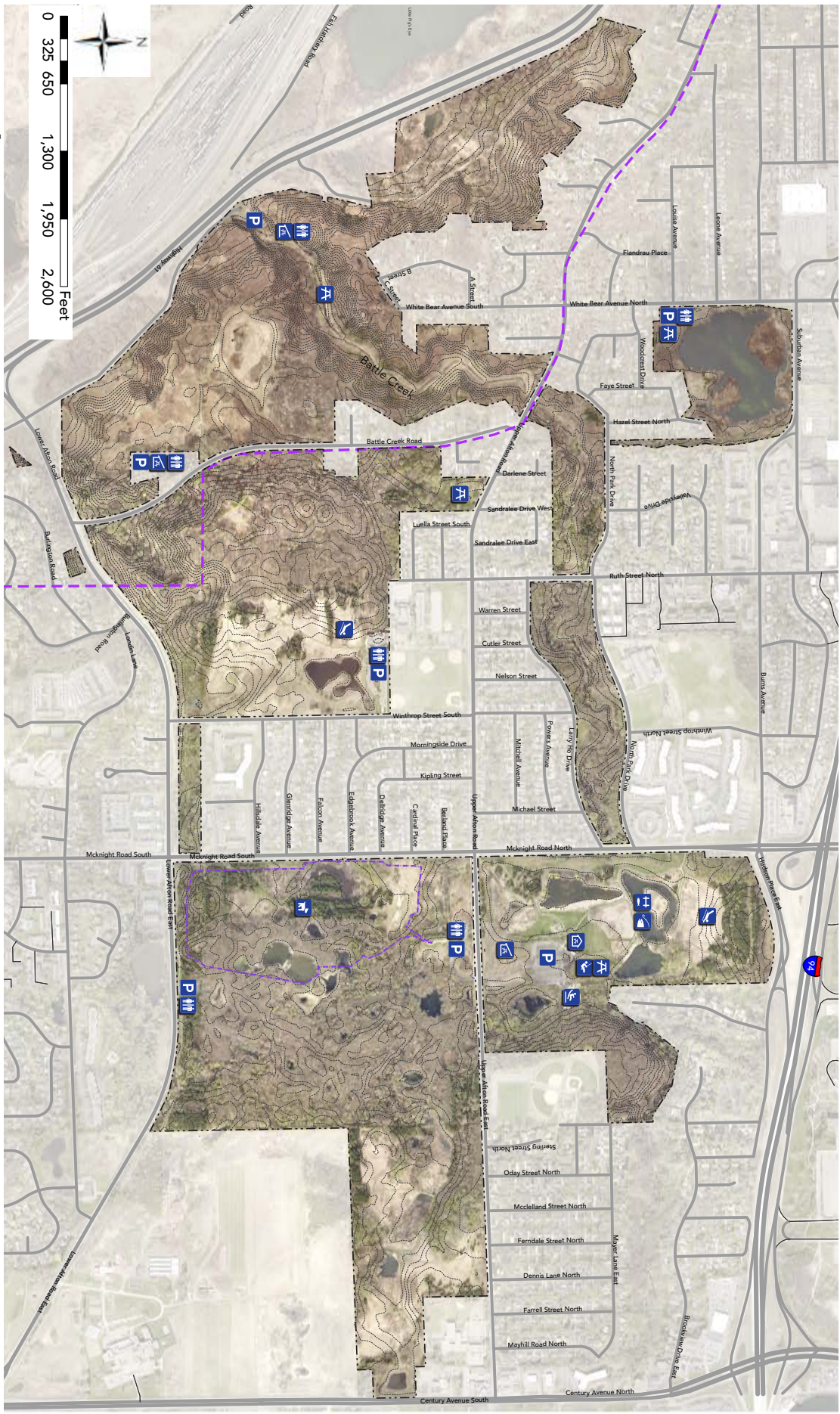
- | | | | |
|--|--|---|--|
| <ul style="list-style-type: none">Paved Trail<ul style="list-style-type: none">ExistingProposedTurf/XC Ski Trail<ul style="list-style-type: none">ExistingProposedOff Road Cycling/Hiking Trail<ul style="list-style-type: none">ExistingProposed | <ul style="list-style-type: none">Regional Trail Search CorridorNature Trail CorridorOutdoor Nature/Learning StationMississippi River Corridor Critical Area / Mississippi National River and Recreation Area | <ul style="list-style-type: none">Site Amenities<ul style="list-style-type: none">PavilionPicnic ShelterRestroomsOutdoor Nature Station/Learning CenterParking LotOff-Road Cycling | <ul style="list-style-type: none">Off Leash Dog AreaPlaygroundWater ParkCross Country SkiingHiking |
|--|--|---|--|

The Plan

BATTLE CREEK SEGMENT LEARNING TRAIL CORRIDORS



BATTLE CREEK SEGMENT TRAILHEADS AND AMENITIES



Legend

Site Amenities

- Pavilion
- Picnic Shelter
- Restrooms
- Outdoor Nature Station/
Learning Center



Parking Lot

- Off Road Cycling Skills Area
- Off Leash Dog Area
- Playground
- Water Park
- Fishing Opportunity / Pier

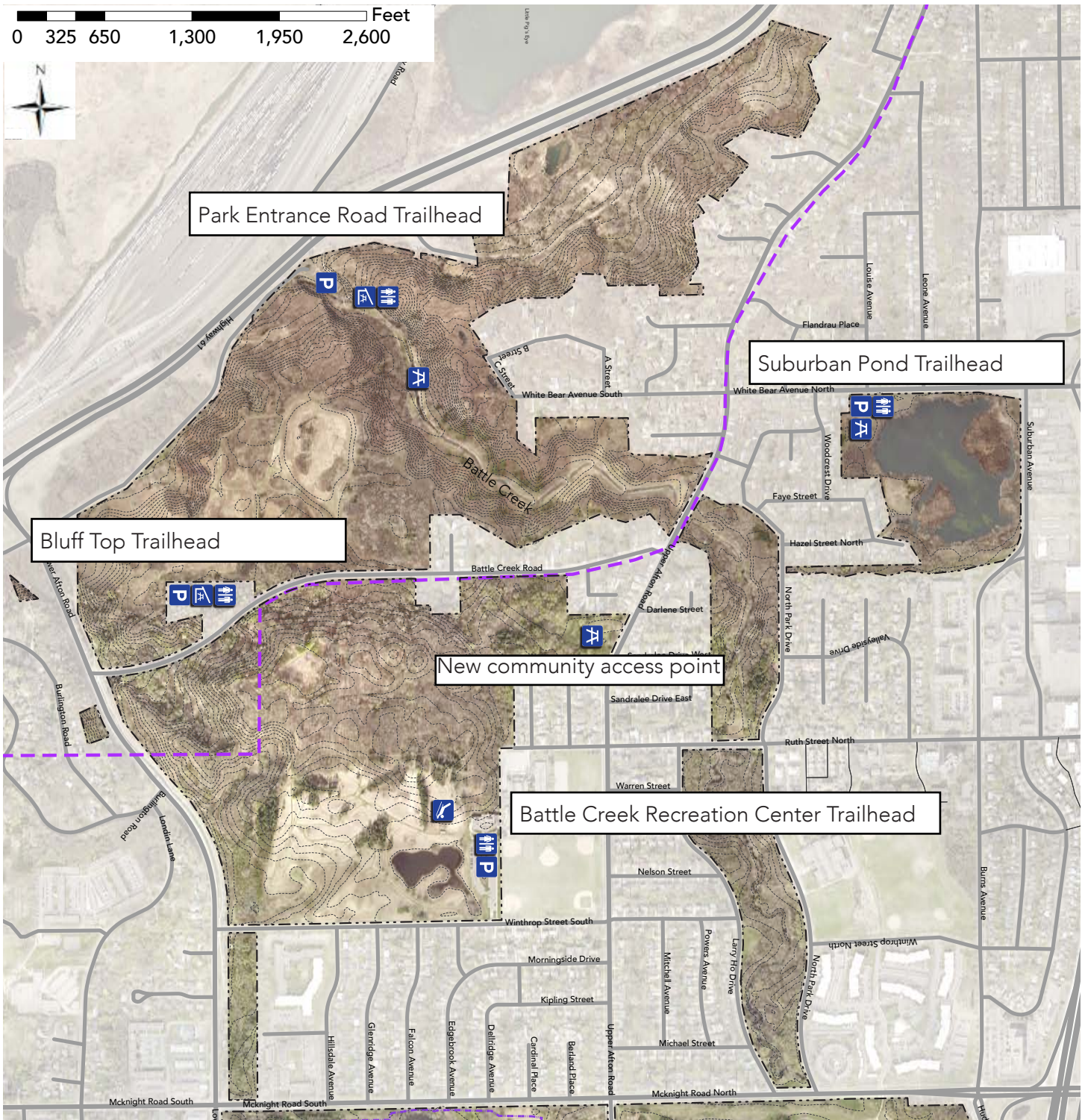


Mississippi River Corridor
Critical Area / Mississippi
National River and
Recreation Area



The Plan

BATTLE CREEK SEGMENT TRAILHEADS AND AMENITIES



Legend

Site Amenities

Pavilion



Picnic Shelter



Restrooms



Outdoor Nature Station/
Learning Center



Parking Lot



Off Road Cycling
Skills Area



Off Leash Dog Area



Playground



Water Park



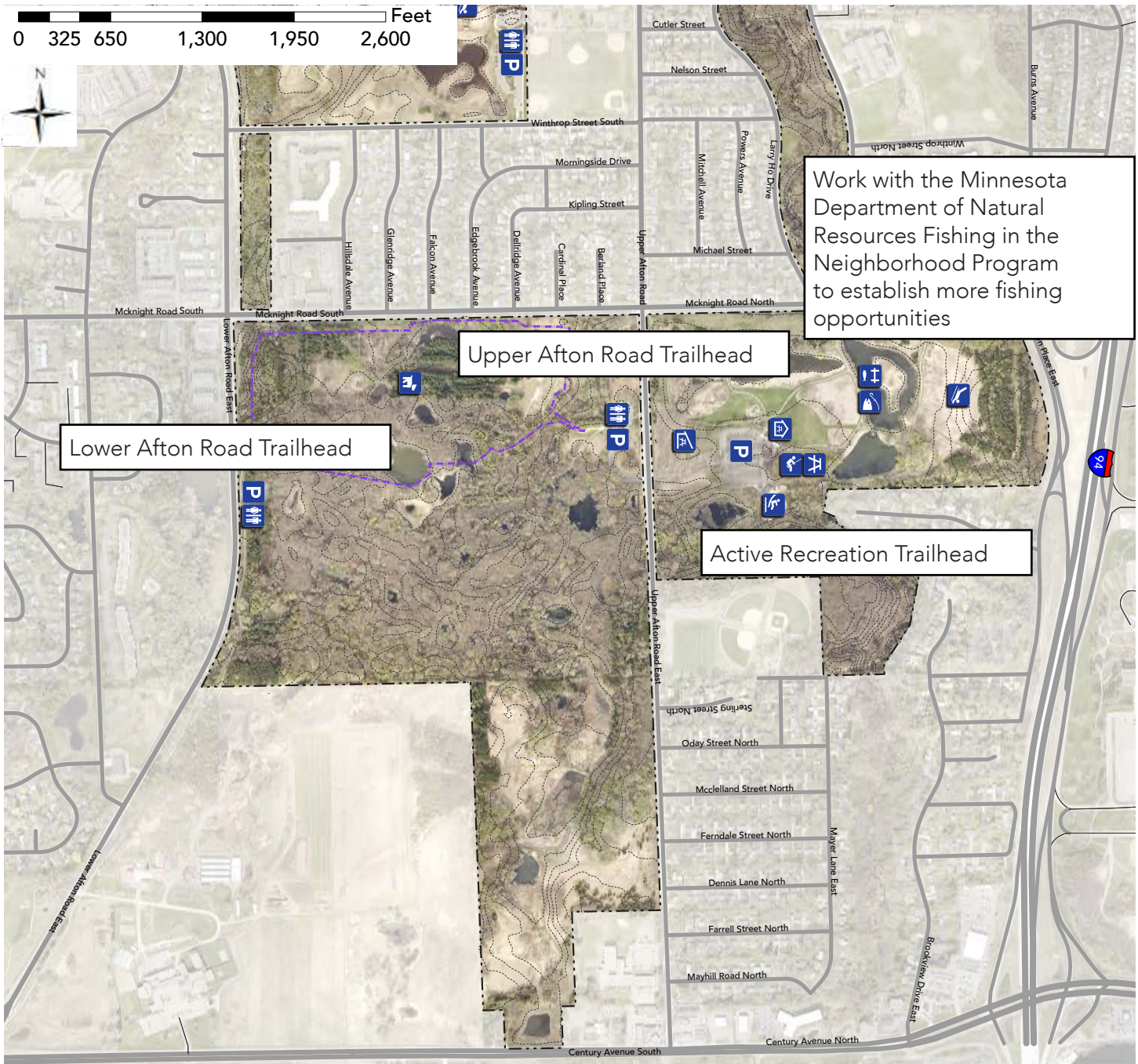
Fishing Opportunity / Pier



Mississippi River Corridor
Critical Area / Mississippi
National River and
Recreation Area



BATTLE CREEK SEGMENT TRAILHEADS AND AMENITIES



Legend

Site Amenities

Pavilion



Picnic Shelter



Restrooms



Outdoor Nature Station/
Learning Center



Parking Lot



Off Road Cycling
Skills Area



Off Leash Dog Area



Playground



Water Park



Fishing Opportunity / Pier



Mississippi River Corridor
Critical Area / Mississippi
National River and
Recreation Area

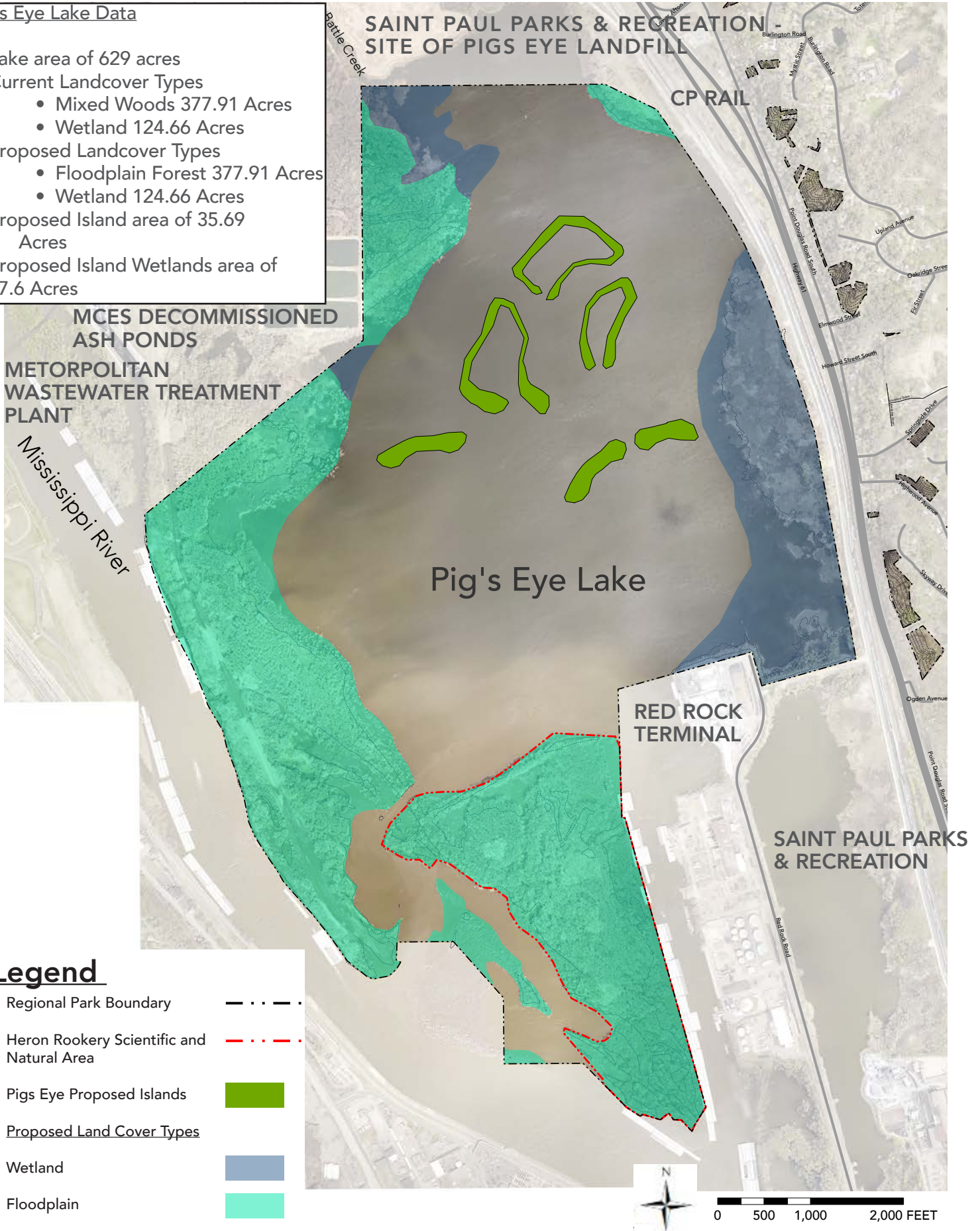


The Plan

PIGS EYE LAKE SEGMENT CONCEPT

Pigs Eye Lake Data

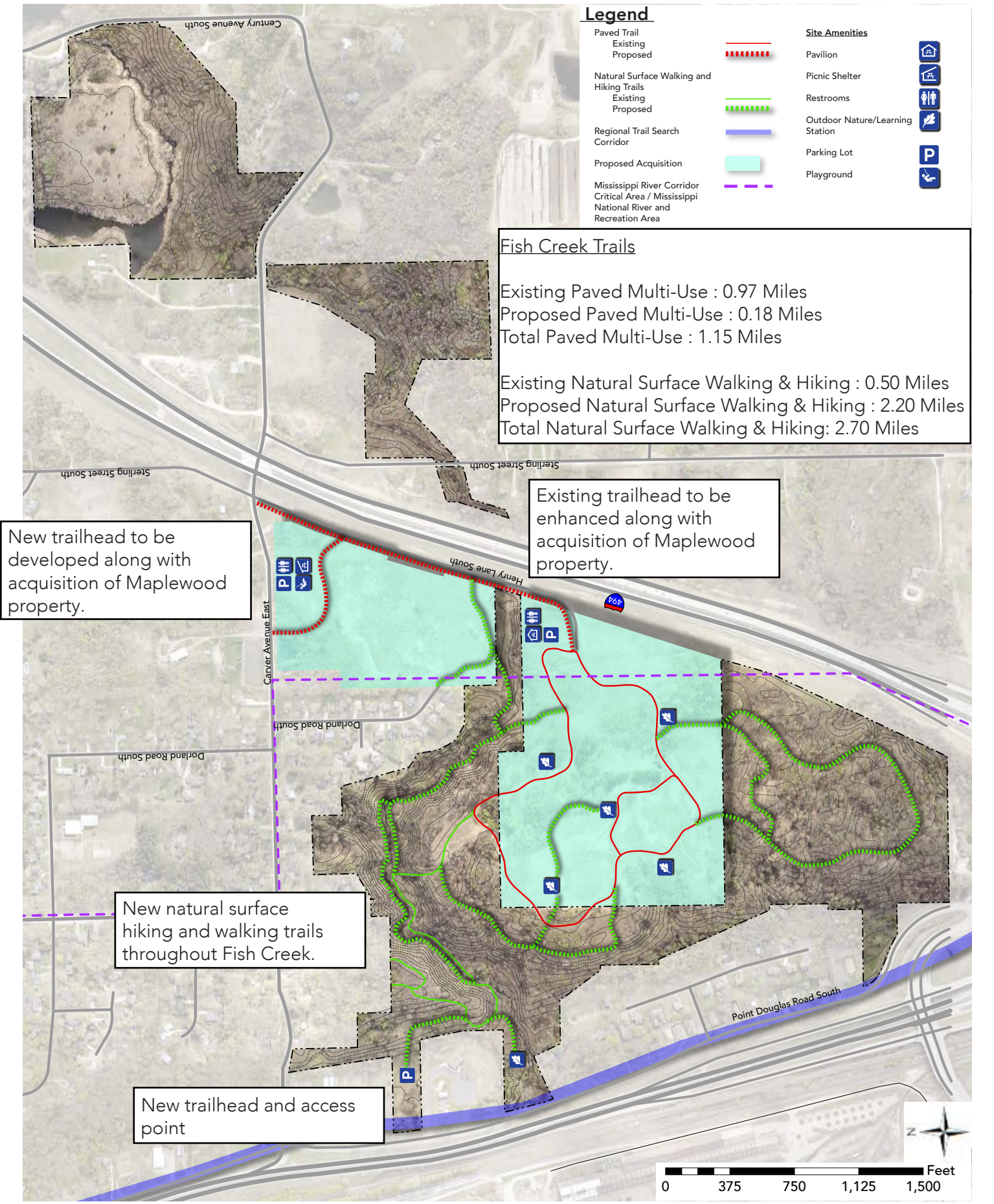
- Lake area of 629 acres
- Current Landcover Types
 - Mixed Woods 377.91 Acres
 - Wetland 124.66 Acres
- Proposed Landcover Types
 - Floodplain Forest 377.91 Acres
 - Wetland 124.66 Acres
- Proposed Island area of 35.69 Acres
- Proposed Island Wetlands area of 17.6 Acres



Legend

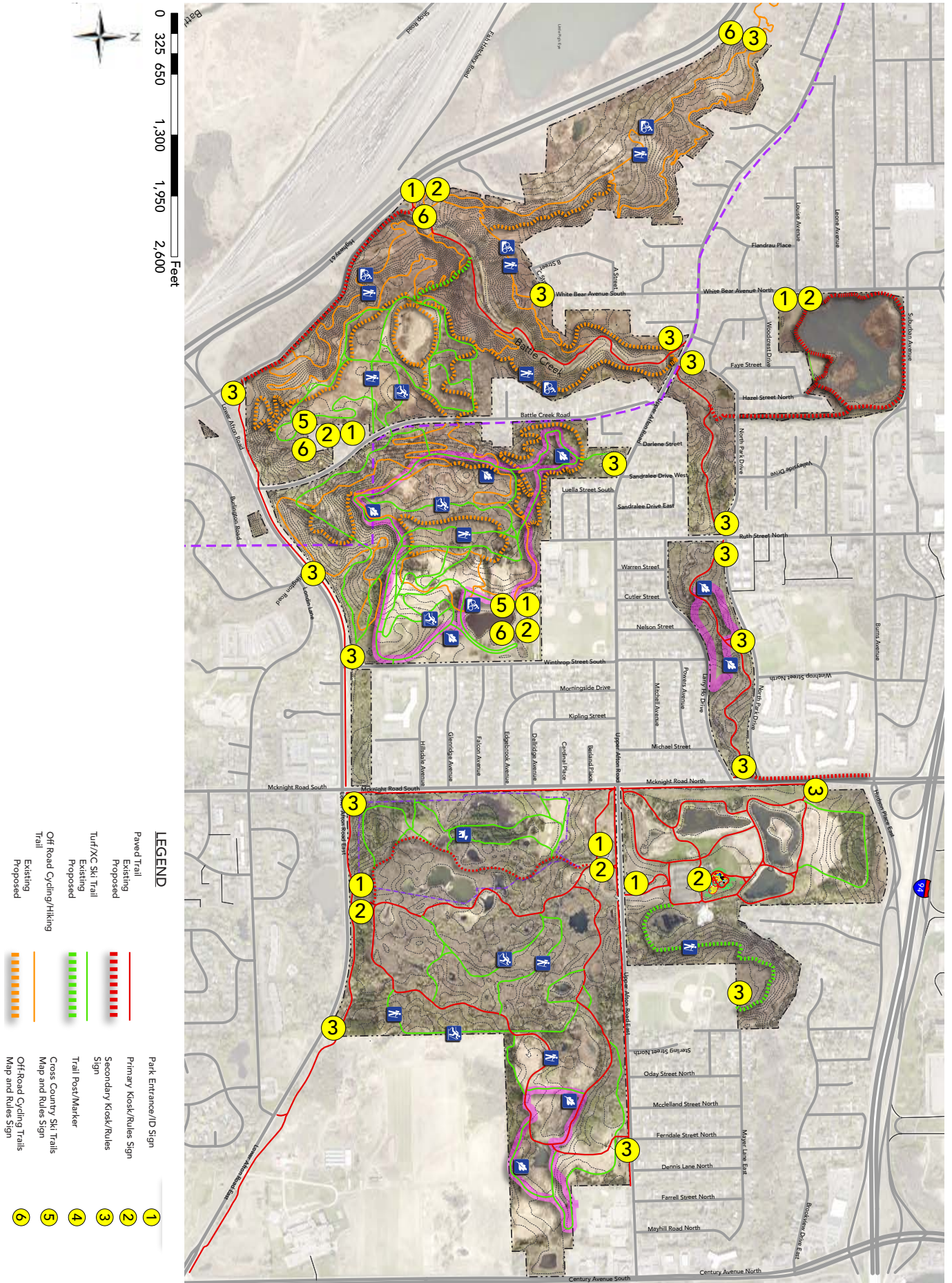
- Regional Park Boundary — — — — —
- Heron Rookery Scientific and Natural Area - - - - -
- Pigs Eye Proposed Islands
- Proposed Land Cover Types
- Wetland
- Floodplain

FISH CREEK SEGMENT CONCEPT

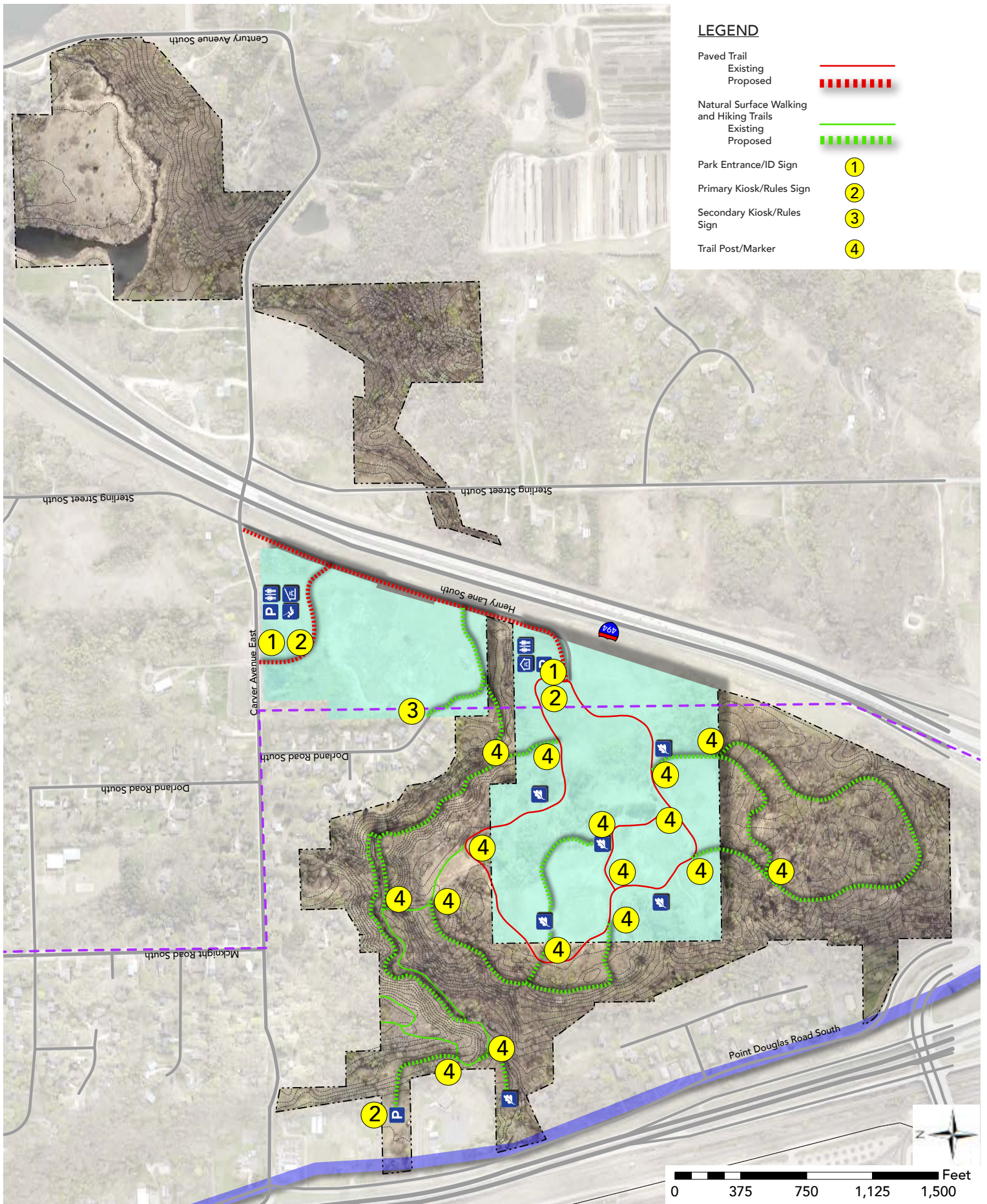


The Plan

BATTLE CREEK WAYFINDING PLAN



FISH CREEK WAYFINDING PLAN



The Plan

- Trails open 1/2 hour before sunrise to 1/2 hour after sunset
 - Groomed trails are for cross country ski use only
 - No snowshoeing, skijoring, hiking, walking, biking or sledding on groomed trails
 - Snowmobiles or other motorized vehicles are not allowed
 - Pets are not allowed on ski trails
 - All ski trails are one-way unless otherwise noted
 - Please observe arrows and directional signs. Ski only on marked and groomed trails
 - Park ordinance in effect. Enforced by the Ramsey County Sheriff's Department. To report violations, please call 651-767-0640
- Off Leash Dog Area Rules
 - Owners must clean up and dispose of feces
 - Dogs must be leashed prior to entering and upon leaving the off-leash dog area and in transition corridors
 - Owners must be in verbal command of their dogs at all times and prevent aggressive behavior, biting, fighting, or excessive barking. If a dog becomes aggressive, or gets into a fight it shall be leashed and escorted out of the park immediately
 - Owners must have a visible leash at all times
 - Owners are liable for damage or injury inflicted by their dogs
 - Dogs must stay within signed boundary
 - Dogs must be properly licensed and vaccinated
 - Dogs in heat are not allowed
 - For every handler there shall be a maximum of two dogs
 - Children under the age of 12 must be accompanied and supervised by an adult, and should be educated about safe behavior around dogs (do not run, scream, offer food, pet a strange dog without permission, etc.)
 - Owners must comply with all park rules and regulations
 - Park ordinance in effect. Enforced by the Ramsey County Sheriff's Department. To report violations, please call 651-767-0640
- Off-Road Cycling Rules
 - Trail hours 1/2 hour before sunrise to 1/2 hour after sunset
 - Ride only on marked trails
 - Observe: one way arrows, do not enter signs and trail closed signs
 - Yield to pedestrians
 - Control your speed pass with care
 - Maintain a safe distance when following another biker
 - Keep environmental impacts to a minimum
 - Stay off wet or snow covered trails
 - Wear a helmet
 - Respect Wildlife
 - Park ordinance in effect. Enforced by the Ramsey County Sheriff's Department. To report violations, please call 651-767-0640

Currently Ramsey County is taking a look at current park ordinances and along with any changes new rules signs shall be posted at all trailheads and parking lots.

Trail signage is also important for recreational users to find their way through the different systems. Cross country skiing and off-road cycling both have trail markers stating direction of travel, trail number/letter, and difficulty. Trail markers shall be installed per the wayfinding plan and Off-Road Cycling Master Plan. Upon the completion of new trails or trail sections trail markers should be added.

There are connections to other public land and regional parks and trails that are important access points of Battle Creek Regional Park. Ramsey County should continue to work with the community and partnering agencies to ensure that proper wayfinding signage to these facilities is included in the park's signage and wayfinding plan. These facilities include land owned by the Minnesota Department of Natural Resources, Pigs Eye Regional Park, Indian

Mounds Regional Park, the Point Douglas Regional Trail, the Afton Bluffs Regional Trail (currently a search corridor), and local facilities managed by the cities of Saint Paul and Maplewood.

Park Amenities

Additional site amenities are proposed throughout Battle Creek Regional Park to provide a high-quality experience. These amenities may consist of benches, additional drinking fountains where feasible, pedestrian and bicycle amenities, additional wayfinding, and nature interpretation and educational signage. In park bridges should be widened when they are at the end of their life cycle so that more multi-use trails can be paved for winter use. Implementation of restroom buildings is proposed at trailhead locations.

Lighting

Consistent with other Ramsey County Regional Parks, lighting is only provided at the trailhead and parking lot areas, with the exception of a short segment of cross country ski trails. Currently, there is no lighting provided for other park areas, in-park trails, or regional trails per park and trail ordinances.

Through public engagement it became apparent that no additional lighting of in-park trails, or recreational amenities is needed or wanted by the community. The only exception to this would be lighted sections of cross-country ski trails in the winter recreation area.

Utilities Required for New Development

New utility line extensions into Battle Creek Regional Park will be required to accommodate portions of new development for the park.

New restrooms, lighting, cameras and drinking fountains are proposed for all trailheads. Trailheads that would require new water, sanitary sewer, and electrical services to be extended from the road way into the site in the event of development include:

- Suburban Pond Trailhead
- Upper Afton Road Off-Leash Dog Area and Overflow Parking Trailhead
- Lower Afton Road Off-Leash Dog Area Trailhead
- Park Entrance Road Trailhead
- Bluff Top Trailhead
- Fish Creek at Carver Avenue East and Henry Lane South
- Fish Creek at Henry Land South Termination

Dependant upon long-term improvements for cross-country skiing water and electrical service may be required in multiple locations.

PROGRAMMING

Throughout public engagement it has become apparent that there is a lack of adequate programming in Battle Creek Regional Park. Community members expressed interest in a wide variety of programming from after school classes, summer camps, art education, nature education, outdoor recreation courses from beginner to advanced, among many others.

With the closure of the Maplewood Nature Center a void in education and programming may become more apparent in the area. The nature center was a gathering place for community members to learn about plants, and animals as well as their relationships to each other. The Friends of the Maplewood Nature Center and Preserves have a desire to not only see a nature center reestablished somewhere in the area, they have also expressed an interest in partnering with Ramsey County in finding programming opportunities within Battle Creek Regional park.

The Plan

Environmental groups such as Friends of the Mississippi River, Battle Creek Middle School, and Carver Elementary Middle School already utilize the park for education opportunities. Ramsey County should continue working with these groups as well as expand partners to local hiking, bird watching, and environmental groups to provide more educational opportunities throughout the park.

Recreation groups such as Minnesota Off-Road Cyclists, Endurance United, The Lopped Foundation, Friends of the Mississippi River and others are an invaluable asset as well as stakeholders in the park. Ramsey County should continue to build strong relationships with these groups to expand recreational programming. These groups already have the expertise needed to design and implement programming in Battle Creek Regional Park. Through partnerships with these groups introducing new and experienced community members to new activities. Many members have already had good ideas on how to get new riders out and active in the park, as well as supply them with the necessary equipment to do so.

Ramsey County should both study and invest in the infrastructure to make park programming a reality. Parks & Recreation should launch a study into the programming needs of the park and use resources to make it a reality.

FUTURE PLANNING

Ramsey County Parks & Recreation should increase awareness of the cultural and indigenous history present in the area and specifically within the boundary of Battle Creek Regional Park. An Indigenous peoples and cultural study of the area should be launched with the support and inclusion of all stakeholders and community members. This study could also be accomplished by requiring a study of specific areas of the park as they are developed and/or programmed.

STEWARDSHIP PLAN

Battle Creek Park contains some of the highest quality natural resources remaining in Ramsey County. The goal for managing the resources of the park is to protect and improve the health and native diversity of these resources. Working toward this goal will accomplish a variety of worthy objectives to:

- Enhance the unique resources that the park was established to preserve for the community
- Provide attractive and interesting recreation areas for people
- Allow the living communities of the park to adapt to change and disturbance in the future

The plan considers the best in available scientific knowledge and the interests of people who care about and use the park in developing recommendations and action steps to protect and improve the health of the park for the long term.

The character of the park and resource have been influenced for thousands of years by climate, water patterns, and by the activities of people. Since the mid-1800's, agriculture and urban development in St. Paul and surrounding area have greatly changed the landscape of the parks. Many valuable natural resources remain, including resources now rare in the county and in the state. However, these resources are threatened by degradation that results from human activities in the landscape. In many places, these trends will not be reversed if the area is simply "left alone"; so much has changed that people must actively care for and manage the landscape to return it to health. The plan suggests ways to care for and restore the natural resources of Battle Creek Park to improve the long-term health of the park, and benefit park users and the natural communities of the park.

The key sections of the plan recommend management tasks and schedules for each of the management units of the park, of which many habitat areas traverse. These recommendations are made by prioritizing each of the habitat areas as high, medium, and low. While all resources of the park are important, this prioritization recognizes the limits of staff time and other resources available to the park, and tries to prioritize management activities based on several criteria:

1. Remaining habitats of the highest quality and native diversity should receive attention first. If these resources are lost, it may not be possible to replace them; and restoration of such resources, if possible, is generally more costly than protection.
2. Medium quality areas still have valuable resources, but will require much higher inputs than “high” quality areas to reverse degradation and improve habitat quality, and outcomes of management activities may be uncertain.
3. Low quality communities have been so changed that they exhibit little native diversity, and would need intensive management or virtual reconstruction to achieve the quality of “high” or “medium” areas. Some of these “low quality” areas have been developed for recreation activities that are not compatible with resources of higher quality habitat areas, but are important to park users, and can usefully remain dedicated to these activities.

Battle Creek Park is a valuable resource for the citizens of Ramsey County, and part of a significant ecological community associated with the Mississippi River Corridor and its bluff lands. The park was originally proposed for acquisition as a public resource based on the quality and beauty of natural resources there. This plan was developed in a spirit that hopes to protect and restore the resources of the park so that they will not diminish, but rather increase in value for future generations. Involvement of people in carefully considering and choosing management options, in learning about the park and its resources, in participating in recreation activities that are compatible with various habitat areas of the park, and in volunteer activities that care for and restore natural resources of the park will be key to the success of the park.

The goals are high, but hopefully achievable in the long term. Shorter term goals and actions compatible with these overall goals are provided for each proposed management area. In addition to prioritizing natural resources management based on the quality and native diversity of habitat areas in the park, and working to restore native diversity and habitats where possible, the plan suggests the following broad goals:

- Additional inventories of plants, animals, and trails should be completed to help guide future management;
- Management should seek to control or eliminate exotic invasive species that are damaging the health of park habitats;
- The white-tail deer population should be managed to protect existing plant communities and aid the success of restoration activities;
- Restoration of native animals should be considered where appropriate when habitat has been improved;
- Water resources should be protected using vegetative buffers and other methods;
- New proposals for recreation should be evaluated in light of their effects on natural resources;
- Efforts should be made to work with park users, surrounding landowners and other organizations to inform them about the natural resources in the park and management options, and identify and meet common goals in managing the park and resources connected to it, such as the bluff lands along the Mississippi River; and
- The effects of management activities should be monitored, to provide guidance for future efforts

Ecologically-Based Management Principles

This plan suggests that the resources of Battle Creek Park be managed on an ecological basis. Simply put, an ecosystem (or “habitat”) is where things live--it is the interacting group of physical elements (soils, water, etc.), plants, animals, and human communities that inhabit a particular place. All of these elements and their interactions need to be considered in developing goals and plans for management. Ecosystem-based management suggests that people are part of the community, and that maintaining a healthy ecosystem is the best way to meet human needs as well as those of other organisms in the community for the long-term.

Managing on an ecosystem basis integrates scientific knowledge and human values toward a general goal of protecting the health of the ecosystem for the long term. (Grumbine, 1993) A key measure of the health of ecosystems is the level of diversity of plants and animals native to the area--a higher diversity of native plants and animals probably indicates a healthier ecosystem (or habitat). A healthy, diverse Battle Creek ecosystem is a desirable goal because it will provide for the basic needs of all living things, allow for successful adaptations to change and disturbance, and allow long-term evolutionary processes to continue with as much genetic diversity as possible so

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that natural communities in the park can adapt to changing conditions.

The following are some overall ecosystem-based principles for managing Battle Creek park. They are paraphrased from current literature on ecologically-based management. Later sections of the plan use these principles to develop goals and objectives for managing the park as a whole, and for management of individual units within the park, but these principles should also be considered when new issues arise that have not been considered in this plan.

Goal and Principles for Management

Management goal for the park: management should protect and enhance the ecosystem of the park and native biological diversity of its habitats. This is generally defined as giving first priority to protecting and restoring the native diversity (including species and communities), and the ecological patterns and processes needed to maintain that diversity. When the highest quality areas have been protected, next steps include buffering and connecting these areas, and restoring and maintaining healthy, diverse communities and habitats in surrounding areas.

Managing for ecosystem health in the park will include identifying and conserving viable populations of native species, using natural disturbances such as controlled fires to maintain and restore communities, and increasing native species diversity in the park and surrounding areas when possible. Recreation uses should be balanced with the ability of resources to sustain use without damage--areas most sensitive to human use should be considered for least intensive uses; areas that can sustain more use without negative impacts to plant and animal communities or natural systems should be considered for more intensive use.

While maintaining some native species and processes offers challenges in an urban setting, it is worth pursuing for a variety of reasons:

1. Native plant and animal species and communities have evolved together in the park area for a long time and are particularly suited to this environment. Over the long term, they will maintain a healthy system that can adapt to disease, weather or other natural disturbances, and should require less management inputs than species less suited to the environment of the park.
2. These species and communities offer human visitors a varied and interesting park environment that illustrates the ecological history of our region and provides diverse opportunities for recreation and education; and
3. High quality natural communities are rare in Minnesota, and particularly in the Twin Cities Metro Area, and are worth protecting and enhancing because they are rare and difficult, if not impossible, to restore to natural condition. Such areas can serve as a source of native seed for restoration of other park areas and areas nearby and as habitat for unique species adapted to these environments.

Some ecological principles that are important components of this goal include the following:

1. Species are interdependent; planning should be focused on maintaining healthy communities and habitats, and the processes that sustain them, and saving all the parts, since we don't always understand how all components function.
2. Introductions of generalist species (exotic species not native to the area) reduces native diversity, the quality of habitat, and the health of communities, and therefore exotics should be excluded or controlled. Appropriate methods for controlling exotic species include cutting, burning, herbicide application, and biological controls.
3. The health of communities depends on their size--in general, smaller and more fragmented communities support fewer species, are more vulnerable to extinctions and invasions, and are less able to recover their diversity, particularly if other sources of native populations are not available nearby. Management therefore emphasizes improving connectivity, avoiding fragmentation of contiguous habitats, protecting natural waterways, and identifying and protecting critical habitats. Connections between communities along natural corridors may help

to maintain diversity and health by allowing plants and animals to migrate and reproduce.

4. People are part of nature. The decisions and actions of humans have been a major force shaping the natural resources and processes of the park for a long time. Humans and their values must be an important factor in shaping park management. Recreation is an important goal of park management. Natural resources management needs to consider providing for appropriate active and passive recreation opportunities in the park.
5. Planning should be based on ecological boundaries and long time frames. Natural systems and communities that make up the park extend beyond political boundaries and influence the quality of resources in the park. For example, the natural communities of the park continue along bluff areas to the west and south; common management goals for these areas could improve long-term health and survival of plant and animal communities here, and their value for human residents and recreational users. Effective management needs to consider broader spatial areas that influence the park and be based on time frames that consider natural processes.
6. Management should be based on good data collection and monitoring. Baseline species and population assessments, habitat inventories and classification, and monitoring data are critical to evaluating the quality of the park's resources and determining appropriate management.
7. Management should be a learning process, and an ongoing experiment, based on the results of previous actions, allowing managers to be flexible and adapt to changing conditions.
8. Management should be based on inter-agency cooperation. All organizations that make decisions or take actions that affect the resources of the park should be involved as appropriate in developing management plans, implementing actions, and evaluating outcomes.
9. Management should provide for permanent protection of important natural resources, particularly those of county-wide, metro or state significance.

Natural Resources Management Objectives for Battle Creek Park

The following are park-wide management objectives that support the overall goal to improve the ecological health and diversity of the park. Detailed objectives for each of the management units in the park are detailed in sections that follow.

1. Identify and map existing plant communities in the park. Complete inventories of plants, birds, mammals, fish, amphibians and reptiles and important habitat areas, beginning with high priority communities. Coordinate with other agencies to complete invertebrate and mussel surveys of Battle Creek and Pig's Eye Lake as part of water quality monitoring of the major water bodies. Collect any additional natural resources inventories and information available from other sources, such as the Minnesota Department of Natural Resources, Ramsey-Washington Metro Watershed District, local birdwatchers, and other volunteers, etc.
A first step in natural resource management is identifying current plant and animals within the communities. These plant and animal surveys are necessary to help guide management decisions for wildlife habitat improvement. Existing data includes plant survey data collected for the 1996 natural resource management plan and general land cover data (current and future land cover types) created by park staff for the 2018 park system plan and state Geographic Information System data layers, such as the Minnesota Land Cover Classification System and the natural heritage information system. Beyond this, current survey information for each management unit is lacking and needs to be updated.

Depending on funding, timeline and ecological significance of each management unit, the method for gathering plant information could be as detailed as a plot survey to as general as a ground truth land cover update to delineate cover types no less than one acre in size. Ideally a baseline plant survey should be completed prior to and following a restoration project to determine wildlife habitat improvement succession.

Task: Baseline plant inventories of high and medium quality natural communities should be completed in 5 years. Quality ratings and management priorities given to these communities in sections that follow should be changed as needed to reflect the findings of the inventories.

2. Prioritize management of community/habitat areas based on ecological quality and issues. While all habitat areas may have some value, management resources are limited. Prioritizing communities based on ecological value suggest the following criteria for rankings:
 - Highest priority habitats are those with the highest native diversity, particularly with rare species or rare plant communities remaining. If these communities are lost, it may be impossible to replace them; if restoration is possible, it is generally more costly than protection. Lowest intensity recreational uses that will not compromise resource quality may be permitted in these habitat areas.
 - Medium priority habitats still have a good representation of native species but have been more degraded by past use or invasion by exotic species than “High” quality communities. They will require higher management inputs to reverse degradation and improve habitats, and outcomes of restoration activities may be uncertain. More intense recreational uses are allowed in these areas than in high priority habitats but are managed to ensure that use does not degrade these habitats or prevent restoration of these areas.
 - Low priority habitats have been changed so greatly that little native diversity remains, and these areas would need intensive management or virtual reconstruction to achieve the quality of native habitats. Some of these areas have been developed for recreation activities that are not compatible with resources of higher quality habitat areas, but are important to park users, and can usefully remain dedicated to these activities. Highest impact recreational activities are located in these areas.

Examples of management recommendations for these communities include the following:

- High priority/rare communities (such as Bluff prairie with Kittentails): Protection is a higher priority than recreational use. Initiate prescribed burns and removal of exotic species to enhance community diversity; ensure that the communities are monitored at least annually; limit recreational use to the limited number of existing paths for hiking use only; close paths where damage to natural communities is occurring. Foot traffic should be discouraged on steep slopes, and limited in other areas to just a few well-placed trails. Interpretive signage may be used to identify these communities and discuss management activities but should not identify rare species locations.
 - Medium priority communities (such as Dry Oak Forest): Inventory the community to identify highest quality areas and pinpoint resource management problems such as exotic species. Manage to increase diversity by clearing exotic species from highest quality areas in this community first, and managing deer populations; replant with native trees, shrubs, and herbaceous plants. Remove or control exotics in additional areas as resources are available. Allow recreation and paths but provide erosion control. Carefully evaluate any new recreational activities for compatibility with resources and restoration activities. Add interpretive signage.
 - Lower priority communities (such as turf or old field): No immediate management attention is needed. As funds and volunteers are available, remove groves of exotic species and/or begin prescribed burns to determine whether prairie or savanna restoration is possible. Allow a variety of recreational uses, including most intensive uses, but control erosion on paths.
3. Develop management goals and action recommendations for each habitat area based on the quality of the resource, landscape history, needs of park users, and management resources available. Areas where high quality resources remain or could be restored may be targeted for intensive management activities. For example, restoration of oak savanna communities may be a desired goal in areas where soils and topography are appropriate, and historic evidence suggests that this community once existed. Management for this plant

community may also be desirable for human uses, providing open views and areas for hiking and picnicking.

In such areas, intensive management such as cutting invasive exotics, use of periodic fires to control exotic species, and use of herbicides may be needed to restore and maintain the desired plant communities.

4. Identify areas for special protection, such as the native communities identified by the County Biological Survey, and important habitat areas identified by animals surveys. Park maps should identify these areas as "Environmental Natural Areas." Management in these areas will be directed toward protecting and improving the natural communities and native plants and animals that inhabit them. The county should explore designation of these and additional areas as natural heritage registry sites, in coordination with the Minnesota Natural Heritage and Nongame Research Program. This could provide additional, ongoing stewardship assistance and help to ensure the continued protection of these areas.
5. Exotic species control, concentrating on highest quality natural communities first. Example of species to be controlled, but not limited to, include: leafy spurge, buckthorn, honeysuckle, black locust, purple loosestrife, Siberian elm, crown vetch, Japanese knotweed, narrowleaf bittercress, Japanese hedge parsley and knapweed. For each area, determine appropriate methods of cutting, herbicide application, controlled burns, and biological controls (such as predatory insects) for initial control and for ongoing community maintenance.

Task: Presence of buckthorn, honeysuckle and black locust should be reduced by 80% throughout the park by 2030.

6. Manage white-tailed deer populations to levels that protect natural communities and allow success in plant community restoration activities and that minimize negative interaction between deer and humans. This is known as the biological and cultural carrying capacity of the park. To meet this objective a deer management plan is drafted annually that sets deer population goals and reduction methods. Currently, the plan strives to meet the Minnesota Department of Natural Resources recommendation of 20 deer per square miles of deer habitat. This equates to 25 deer within the Battle Creek park section and around 10 deer in the immediate Pig's Eye park boundary. Deer habitat transcends park boundaries, so surrounding habitat and herd numbers have to be looked at on a larger scale when making management decisions. Currently, reduction methods have been completed through special permitted archery hunts within Battle Creek and Pig's Eye parks, with some sharp shooting completed near Fish Creek open space to help reduce the herd in the area south of Battle Creek park.

Park managers may also experiment with deer exclosures to determine the effects of deer populations on plant communities and restoration efforts.

The Cities of St. Paul and Maplewood both having ordinances prohibiting feeding deer. The general public and park neighbors need to be educated on the negative effects on feeding deer. Park staff and volunteers should also monitor for other herbivory problems in the Park.

Task: White-tailed deer populations should be controlled to less than 25 per square mile of deer habitat within and around county parkland, by 2030 through recommendations outlined within the annual deer management plan.

7. Begin plant community restoration and habitat enhancement, as described under each management unit. Where possible, restore animals such as bluebirds, grassland birds and amphibians, as indicated in individual plans.

Task: Number and diversity of native plant and animal species increase in high priority community areas by 2030.

8. Maintain undeveloped/unmown buffers around wetlands and creeks. Re-establish buffers in areas where they have been mown or eliminated. Use the provisions in the Maplewood Wetland and Streams Buffer Ordinance or Ramsey-Washington Metro Watershed District Plan to determine recommended buffer sizes. Monitor water quality and plant and animal community response to determine appropriateness of buffer widths. Maintain or

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restore native wetland plants in wetlands and buffers.

Task: Buffers marked and maintained by 2025.

9. The Parks department does not have regulatory authority over water features within the park system, however, the department can coordinate with regulatory agencies such as, the Minnesota Pollution Control agency, Ramsey-Washington Metro Watershed District and other agencies as needed, to get updated information on monitoring and protection of water quality of Battle Creek, Fish Creek, Pig's Eye lake, wetlands, and other water resources of the park and assist with the following: Maintain current water quality and improve quality and aquatic habitats where possible, pursuant to watershed plans. Coordinate with Ramsey-Washington Metro Watershed District and Parks maintenance to determine a dredge plan for Battle Creek. Plan will include timing, location and volume of sediment to be dredge within Battle Creek and methods of execution.

Task: Meet with agencies that monitor water bodies annually to discuss agencies measurable objectives to reduce pollutants and loading. Determine if agencies are willing to help monitor additional in park wetlands and help with restoration decision making. Coordinate with agencies on planning for the following objectives: Numbers and species of invertebrates, fish and mussels in the creek remain the same or increase. Number and size of wetlands in the park remains the same or increases as wetlands are restored in appropriate areas. Wetland native vegetation diversity increases and purple loosestrife populations are maintained or decrease.

10. Inventory all existing trails and evaluate existing and proposed trails based on recreational need and impact to natural communities and rare species. Eliminate, relocate or improve trails that are unnecessary or causing negative impacts (such as erosion and exotic species invasion in high quality natural communities).

Task. Complete trail inventory plan with timeline and cost to meet objective by 2025.

11. Evaluate future proposed development plans for the park and their impacts on natural resources. Consider eliminating or modifying those with significant impacts on natural resources, particularly those in high quality natural communities.
12. Increase knowledge and care for park resources among neighbors and surrounding communities using education activities and demonstrations of recommended practices in visible locations in the park. Coordinate volunteer events with partners or parks staff to complete management and restoration activities in the park and adjacent areas. Work with park neighbors to extend use of native species and restore natural communities in areas adjacent to the park. Coordinate with neighboring schools to restore native plant communities on school grounds. Work through community councils, city and neighborhood associations to encourage elimination of exotic species from yards and planting native species and plants that provide bird and wildlife habitat.
13. Work with other organizations to extend linkages and management of natural communities outside the park. Participate in ecological inventory of Mississippi River and adjacent corridors, work on purchase and cooperative management of the bluffs, river bottoms, creek corridors, and other watershed areas with Cities of St. Paul and Maplewood, National Park Service, Minnesota Department of Natural Resources, non-profits, and other agencies, organizations and volunteers.
Establishment of a resource coordinator at Ramsey county parks to work to implement this plan with staff, volunteers and other organizations would help to facilitate cooperative action.
14. Restore linkages among natural communities and reduce fragmentation within the park wherever possible to increase the size and diversity of native habitats. Activities could include closing of the lower section of Battle Creek road and re-establishment of forest connections across this barrier, elimination of unneeded trails, use of low curbs and large-size culverts that facilitate movement of animals as infrastructure is built or rebuilt, or other methods.
15. Monitor results of management activities. Use management as a learning process--base ongoing management on results of previous actions and new knowledge and adapt to changing conditions. Maintain flexibility to take

advantage of opportunities and resources that benefit the health and management of the park.

Literature sources:

Grumbine, R. Edward, Environmental Policy and Biodiversity. Island Press, Washington, D.C., 1994.

Grumbine, R. Edward, "What is Ecosystem Management?", Conservation Biology, Vol. 8, No.1, March, 1994.

Jones, Stephen B. "Getting from Here to There: Implementing Ecosystem Management on the Ground, Journal of Forestry. August, 1994.

Lanegran, David, in Phalen Chain of Lakes Watershed Project Natural Resources Management Plan, 1994.

Wovcha et al, Minnesota's St. Croix River Valley and Anoka Sandplain: A Guide to Native Habitats, University of Minnesota, 1995.

Management Units

The following sections breakdown the stats, descriptions, management issues, objectives and tasks for each management unit within Battle Creek Regional park. The management units were created to partition up the park in a manner that would allow for reasonable funding requests to complete restoration throughout a unit. Most unit boundaries were created using defining features such as roads, terrain or land cover boundaries. The 1996 natural resource plan featured management areas consisting of general native plant communities and land cover types as boundaries. Since this plan, advanced digital data and field information has helped to define these communities and land cover types in greater detail. Refer to the map on the next page for the location of these management units in each park.

The stat data for each management unit includes:

- Dominant land cover, soils and terrain types listed. This gives the reader a quick glance of the defining features of the unit beyond the description.
- Frances J. Marschner's original analysis of Public Land Survey notes and landscape patterns from 1895. Marschner compiled his results in map format, which was subsequently captured in digital format to show pre-settlement vegetation patterns for the purpose of determining natural community potential, productivity indexes, and patterns of natural disturbance. The Marschner Pre-settlement Vegetation of Minnesota based on the original vegetation from public land survey records indicates three major plant communities in the Battle Creek area:
 - Oak Openings and Barrens
 - Big Woods
 - Wet Prairies, Marshes and Sloughs
- Government recognition and protection status lists plant communities or areas within the unit that are protected under statute or recognized by government entities, mostly the State of Minnesota Department of Natural Resources, as significant. These classifications are listed and defined below:
 - Mississippi River Corridor Critical Area Program (MRCCA) The Mississippi River Corridor Critical Area Program is a land corridor along the Mississippi River in the seven-county metro area in which special land use regulations guide development activity. The corridor extends 72 miles along the Mississippi River from the cities of Ramsey and Dayton in the north to the City of Hastings and Ravenna Township in the south. It includes 54,000 acres of land along both sides of the river. The State of Minnesota created the corridor and land use regulations in 1976. Local governments administer the regulations through their local plans and zoning ordinances. The Mississippi River Corridor Critical Area Program is home to a full range of residential neighborhoods and parks, as well as river-related commerce, industry, and transportation. Though the Mississippi River Corridor Critical Area Program has been extensively developed, many intact and remnant

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natural areas remain, including bluffs, islands, floodplains, wetlands, riparian zones, and native aquatic and terrestrial flora and fauna.

- Mississippi National River and Recreation Area (MNRRA) This area is a federal national park administered by the National Park Service. The Mississippi National River and Recreation Area and Mississippi River Corridor Critical Area Program share the same boundary. This is the only national park dedicated exclusively to the Mississippi River. It is located in parts of Anoka, Dakota, Hennepin, Ramsey, and Washington counties, all within the Minneapolis–Saint Paul metropolitan area. The Mississippi National River and Recreation Area was established in 1988 as a new unique type of National Park known as a partnership park. Unlike traditional national parks, the federal government is not a major landowner and therefore does not have control over land use. The National Park Service works with dozens of “partners” (local, state, and federal governments, non-profits, businesses, educational institutions, and individuals) who own land along the river or who have an interest in the Mississippi River to achieve the National Park Service’s mission to protect and preserve for future generations.
- Regionally Significant Ecological Areas and Regional Ecological Corridors. This is an analysis of regionally significant Terrestrial and Wetland Ecological Areas in the seven county metropolitan area. Individual forest, grassland and wetland models were integrated to identify and rank the Terrestrial and Wetland Ecological Areas. The scores are determined by examining important ecological attributes of the ecological patches including size, shape, cover type diversity, and adjacent land use. The results represent a probability that the modeled conditions exist in any given area, due to limitations of the data layers. The ecological models were run on the most current Minnesota Land Cover Classification System (MLCCS) data available - currently spring 2008.
- Minnesota Biological Survey. Native Plant communities. The Minnesota Biological Survey (MBS) systematically collects, interprets, monitors and delivers data on plant and animal distribution as well as the ecology of native plant communities and functional landscapes. The Native Plant Communities dataset includes polygons representing the highest quality native plant communities remaining in surveyed areas (typically counties). These native plant communities are important areas for conservation.

Native plant communities (sometimes also referred to as “natural communities”) are groups of native plants that interact with each other and their surrounding environment in ways not greatly altered by modern human activity or by introduced plant or animal species. These groups of native species form recognizable units, such as an oak forest, a prairie, or a marsh, that tend to repeat across the landscape and over time.

Native plant communities are generally classified and described by considering vegetation, hydrology, land forms, soils, and natural disturbance regimes. The native plant community types and subtypes in this data layer are classified primarily by vegetation and major habitat features.

Native habitats (with the exception of calcareous seepage fens) have no legal protection in Minnesota. However, such communities are rare, and include the highest diversity and quality of natural resources remaining in the state and in our local area. Therefore, identification, consideration, protection and management of these areas in planning for natural resources should be a high priority, and is a central focus of this plan for Battle Creek Park. Less than 1 percent of the original areas of these communities remain in the state, and the communities remaining at Battle Creek Park are among very few remaining in Ramsey County.

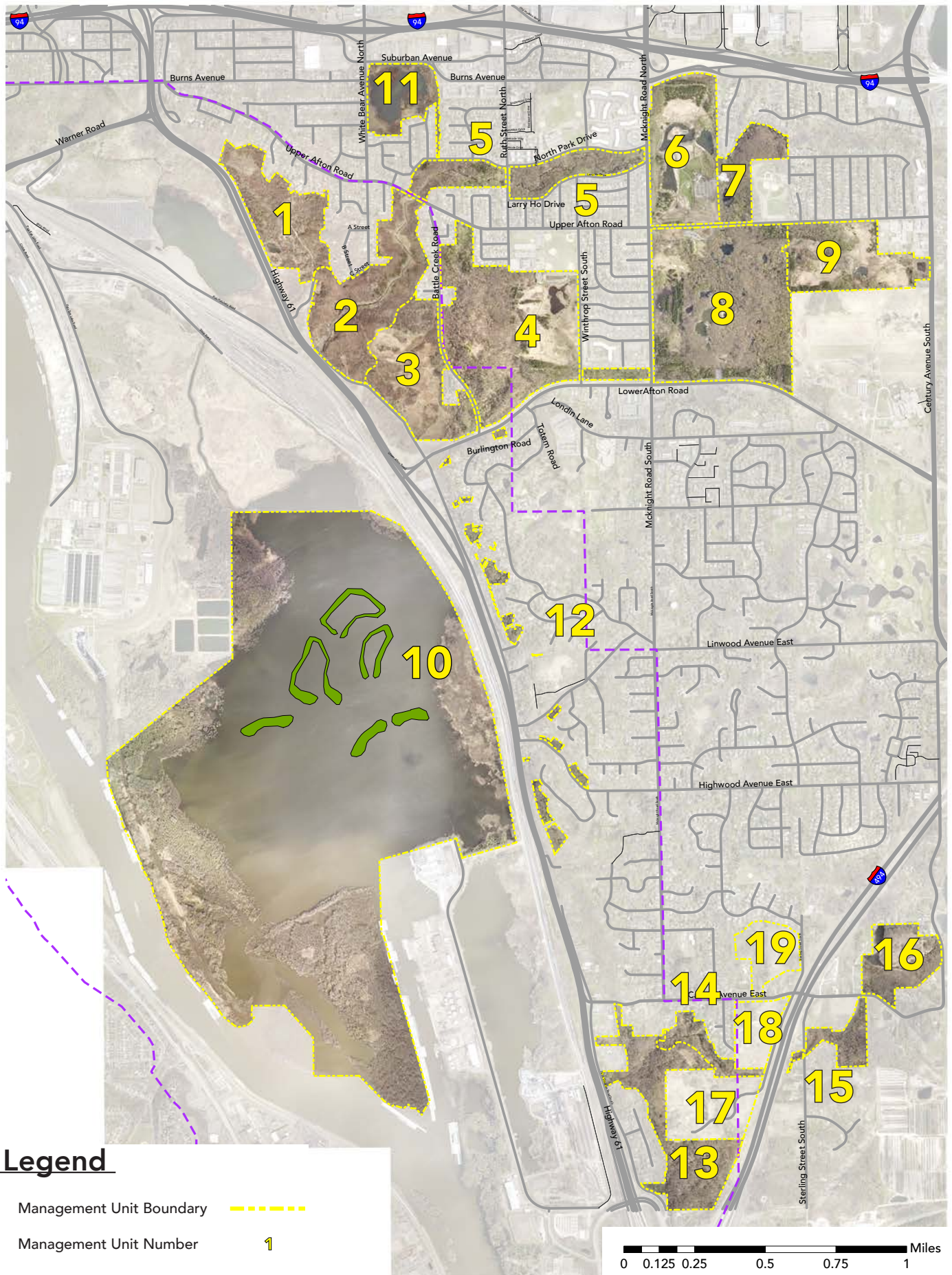
Native habitats are distinct groups of plants and animals that are “native or indigenous to a particular region.” (Wovcha, 1995) Native habitats are classified and described by considering vegetation, successional status, topography, hydrology, landforms, substrates, soils, and natural disturbance regimes (such as fire, flood cycles, and native insects and microorganisms). The Natural Heritage and Nongame Research Program of the Minnesota Department of Natural Resources has developed a classification of native habitats for the state that was used by the Minnesota County Biological Survey in evaluating natural areas in Battle Creek Park and is being used throughout the state.

These native habitats include: Dry and Mesic Oak Forests, Sand/Gravel Oak Savanna, Emergent, Shrub, and

Forested Wetlands Wet meadow

- Minnesota Department of Natural Resources Scientific and Natural Areas: Scientific and natural areas are exceptional places where native plants and animals flourish; where rare species are protected; and where we can know, and study, Minnesota's fascinating natural features. Scientific and natural areas are established to protect and perpetuate in an undisturbed natural state those lands and waters embracing natural features of exceptional scientific and educational value. The Scientific and Natural Areas Program's goal is to ensure that no single rare feature is lost from any region of the state. This requires protection and management of each feature in sufficient quantity and distribution across the landscape.
- Environmental Natural Area: Ramsey County Park & Recreation department Environmental Natural Areas have been identified in Regional Parks having significant natural resources. Environmental Natural Areas (ENA) are defined within Regional Parks as having significant, sensitive, and unique natural resources to Ramsey County that warrant extended preservation. The habitat and vegetation within these areas is managed to support and enhance these natural communities. These areas are designated for increased habitat protection, ecological restoration, passive recreation and environmental education. Any development expansion within these areas is limited to trails only, with nature interpretation facilities allowed within the planned development areas of Tamarack Nature Center only. Public access to these areas is restricted to designated trails and the use of these areas is limited to passive forms of recreation such as hiking, skiing and nature viewing. Bicycles and off-road cycling is allowed only on designated trails. Dogs and off-trail activities are not allowed.
- Community Structure and Quality / Management Priority
 - Structure, quality and management of a unit is categorized as high, medium and low, with descriptions under section Natural Resources Management Objectives for Battle Creek Park, #2.

NATURAL RESOURCE MANAGEMENT UNITS



Management Unit 1

Unit Stats

Dominant land cover type: Oak woods

Dominant soil type: loamy sand

Dominant Terrain: steep hillsides

Marschner Pre-settlement Vegetation: Wet Prairie

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)
- Regionally Significant Ecological Areas and Regional Ecological Corridors
- Environmental Natural Area: Ramsey County Park & Recreation department

Community Structure and Quality: High

Management Priority: High

Unit Description

The forest that extends north and east from the creek along Upper Afton Road, becomes drier, and is dominated by mixed red and white oak canopy, grading to more bur oaks on south and west-facing areas near the Minnesota Department of Transportation overlook. The steep hillsides in this area historically consisted of more open savanna type canopy that were likely dominated by bur oak. This land cover type stretched southward along park entrance road and east along lower Afton road, along the bluffs in management units 2, 3 and 4. There are two large concave areas along the hillsides that were areas excavated for fill. At the base of the bluffs in this area, cottonwoods, boxelders, and green ash occupy wet areas, along with wetlands. The wetlands consist of a connected complex of freshwater emergent, forested, and open water wetlands located in the southwest corner of the site. There is a remnant of an old road, that was historically highway 61, before becoming point Douglas road that runs along the base of the hill, separating the upland from the lowland areas. There were a number of homestead sites off of the road. Areas near existing homes or former home sites have the highest density of exotic species in the understory, but buckthorn is a consistent problem throughout the area. Near the end of this current remnant road is a series of wetland seeps emerging from the hillsides and flowing into the wetlands below. The wetland seeps contain high quality plants, including skunk cabbage, Joe-pye weed, swamp milkweed, amongst others. In 2015 – 2018 a restoration project was completed through this area, with a focus on invasive species removal, primarily buckthorn, and reestablishment of native ground and shrub vegetation. The upper woodlands and lowland areas were cleared of buckthorn and the excavated areas, previously dominated by invasive grasses, were seeded to native prairie. A prescribed burn was conducted through portions of the woodlands that had enough fuel to carry a burn and native woodland seed was spread throughout following the burn. Maintenance will be consistent and ongoing to control the buckthorn and other invasive species emerging, such as Japanese knotweed (which is located near the wetland seep) and narrowleaf bittercress, which is starting to spread throughout the unit. Deer are usually heard or seen in these areas, and deer evidence of deer browse is visible on forest forbs and small trees. There are a number of official and some unofficial trails, which are causing erosion, that are located within this unit. Recreation consists of hiking and off-road cycling.

Management Issues

- The level of native ground and shrub cover establishment is unknown.
- Ongoing and continued maintenance, following initial restoration, will be extensive and costly to keep the invasive species controlled while establishing native ground and shrub cover throughout all land cover types. Maintenance such as foliar spraying of buckthorn and a prescribed burn has occurred, but further maintenance has yet to be defined.

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- It is unknown if clearing trees throughout the oak woodlands to open the canopy for conversion of a savanna system would be beneficial and cost effective.
- Unofficial trails are causing erosion problems.
- Encroachments and dumping from abutting neighbors are major issues that are causing negative impacts to surrounding parkland
- Deer browse will continue to be an issue within this unit. Control of the deer population is necessary to prevent over browsing of natural regeneration of shrubs and trees.

Management objectives, tasks, schedule and costs

Objective 1

Complete observational surveys in each land cover type restored to determine location and level of native and invasive plant species re-emergence and new emerging exotics biannually.

Tasks:

- Complete biannual observation surveys and monitor areas that exhibit successful natural regeneration. Delineate areas needed for supplemental seeding and planting.
- Complete biannual observation surveys of exotic species that are spreading and create a distribution map of exotic invasive species
- Identify locations of emerging species, such as Japanese knotweed and narrowleaf bittercress.

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Objective 2

Continue ongoing preservation of restored lands at a level equal to or greater following initial restoration, using surveys and Minnesota Department of Natural Resources native plant community fact sheets for guidance. Hire contractor, implement plan and revise after three years.

Tasks:

- Draft a three year maintenance plan detailing the specifications for each land cover type maintenance needs, including efforts to stabilize eroding seep area.
- Secure funding for three year plan through state grant program or county funds and hire contractor to complete ongoing maintenance on a three year contract. At a minimum include all listed below.
- Continue maintenance by achieving a measureable reduction in exotics in restored areas of 80% or more, including buckthorn, honeysuckle, locust, Siberian elm and emerging exotics. Tools will include foliar spraying and prescribed burns.

- Monitor and eradicate new emerging invasive species.
- Increase diversity among the native shrub and herbaceous ground layer plants in the woodlands and prairie areas following the removal of exotics
- Foliar spray emerging buckthorn every fall following initial restoration for three years. Assess continued volume and timeline of foliar spraying following three year mark.
- Assess the need for an oak woodland burn after initial restoration. If woodland burn will be beneficial in setting back exotics and promoting native growth, complete burn in fuel rich areas every 3 to 5 years following initial restoration.
- If there is limited native regeneration of herbs and shrubs, observed after one season growth following restoration complete the following:
 - Increase diversity in the native herbaceous ground layer plants by casting an appropriate native seed mix in the spring or following a prescribed burn.
 - Obtain shrub saplings from Minnesota Department of Natural Resources forestry or other reliable source and plant throughout the unit at a rate that will meet the percent cover listed in native plant community fact sheet.

Schedule and costs

Year 2 Jan - March: Draft maintenance plan and hire contractor

Cost = park staff time

Year 2-5: maintenance to be completed

Cost = \$40,000.00

Year 6 – 9 spring or fall, planting of native seed, shrubs and oak trees

Cost = To Be Determined

Objective 3

Complete assessment to determine benefit and cost of converting oak woodlands to a more open canopy savanna where appropriate

Tasks:

- Survey bluff land oak woods to identify locations ecologically and economically beneficial for conversion to savanna.
- Determine, with county forester, trees for removal within identified savanna locations
- Draft a plan detailing the specifications for savanna conversion using the Minnesota Department of Natural Resources native plant community guidelines: Southern Dry Savanna

Schedule and costs

Year 2, July, collect survey information

Cost = parks staff time

Year 2, August – September, draft plan if warranted

Cost = parks staff time

Objective 4

Control encroachments and unofficial trails to prevent further impacts.

Tasks:

- Complete inventory of unofficial trails and encroachments throughout area
- Create plan to close and re-vegetate unofficial trails
- Reach out to neighbors encroaching on lands and have them stop and remove all infractions.

Schedule and costs

Year 1, April or October: inventory trails and encroachments

Cost = parks staff time

Year 2 Jan -March, April: draft trail restoration plan and encroachment letters

Cost = parks staff time

Year 2 April – May: contact/send letters to neighbors and restore and re-vegetate trails, using Minnesota Off Road Cyclists volunteer efforts

Cost = parks staff time

Objective 5

Control deer population to levels that protect native vegetation and allow woodland regeneration pursuant to the annual deer management plan.

Tasks:

- Complete annual population survey of area to determine reduction needs and methods
- Continue with annual special archery hunt to maintain population
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Schedule and costs

Annually: implement deer management plan

Cost = parks staff time

Management Unit 2

Unit Stats

Dominant land cover type: Oak woods

Dominant soil type: sandy loam

Dominant Terrain: steep hillsides

Marschner Pre-settlement Vegetation: Wet Prairie

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)
- Regionally Significant Ecological Areas and Regional Ecological Corridors
- MN Native plant Community
 - Sites of biodiversity significance, moderate
 - MHs38c - Red Oak - Sugar Maple - Basswood - (Bitternut Hickory) Forest. 13 acres. Vulnerable to Extirpation
- Environmental Natural Area: Ramsey County Park & Recreation department

Community Structure and Quality: High

Management Priority: High

Unit Description:

This area consists of mainly oak woods along south and west facing slopes and plateaus, from upper Afton road to the lower parking lot at the end of park entrance road and adjacent to highway 61. These woods have a wider variety of canopy and understory species than the dry oak forests to the east. White oaks dominate on the ridge tops. Large black cherry trees, basswood, and a few large white pines are also present in the canopy. There are sections of mesic woods within north facing aspects on both sides of the creek and with the section on the west side of the creek identified by the Minnesota Department of Natural Resources as a native plant community as a red oak, sugar maple, basswood and bitternut hickory forest, mesic hardwood forest system. Most bitternut hickory in this area have died out, with a few hickory trees remaining. Within coulees along the hillsides are remnant white pine along with some planted conifers as well. On the lower edge of the woodlands on the east side of the creek is a large wetland seep that abuts the paved trail. Growing within the seep are a number of hydrophytic plants, such as spotted joe-pye weed and skunk cabbage. While the understory of the woods is diverse, many areas are highly infested with buckthorn, particularly areas close to private homes that border the park. These areas have few or no ground layer forbs. Areas with less buckthorn are much more diverse and of good quality, include groves of ferns and a diversity of forest forbs such as, bloodroot and ginger, often seen on the north facing aspects. Deer are usually heard or seen in these areas, and deer evidence of deer browse is visible on forest forbs and small trees. The entire woodland area includes official and unofficial trails that are used for hiking and off-road cycling. Many of the unofficial trails have serious erosion problems.

Oak forest communities cover about half of the area of Battle Creek Park; these are mainly dry forest communities. Few mature dry oak forests with large diameter trees remain in the Metro Region; more remnant areas of mesic oak woodlands remain near wetlands, slopes, and in undeveloped portions of the Metro Region.

The immediate creek corridor serves as a recreational area with a paved path, numerous pedestrian bridges over the creek and picnic tables in small sections of turf mowed areas. Most of the creek consists of a buffer of invasive species of reed canary grass and cattails. This area was altered in the early 1980's when a flood control project was completed by the Ramsey-Washington Metro Watershed District which included an underground storm sewer pipe system installed beneath the creek. The creek overflow structures can be seen in the middle of the creek. This project left some hillsides exposed and covered with invasive grass. These hillsides are currently being converted to native prairie. In addition to the storm sewer a main sanitary sewer line runs within the creek corridor, with a section of the pipe, which was hand dug to place in the early 1900's, under the bluffs west of the creek and connecting to the pump station located off of highway 61.

The Plan

The southern portion of this unit includes large and small bur oaks above a diverse herbaceous ground layer on cliffs and slopes over Battle Creek and south-west facing bluffs over Highway 61. These west and south facing bluffs were historically sand/gravel oak savanna. There are unique steep limestone bluffs overlooking the creek on the most southern edge. Aerial photos from the 1940's and historic photos from earlier years suggest that south-facing slopes and forest areas adjacent to the oak savanna community were once more open woodlands than they are today, with north and east facing slopes historically occupied by more mesic, closed-canopy forest. The herbaceous openings are covered with a variety of grasses and diversity of prairie forbs. A large population of Kittentails (*Besseyia bullii*), a plant endangered in Minnesota, exists in one area and is reproducing, primarily on rocky cliffsides, overlooking the creek on the west side. Previous records identified Kittentails on the east side of the creek and with smaller populations scattered throughout the savanna openings on the west, however, a recent survey could not locate Kittentails in these areas. Larger populations on north-facing slopes above the creek were also identified by Morley in 1990, but no longer exist. The soil in south-facing areas is very loose, and much erosion is evident along the paths and cliffs due to trails and cliff climbing along bluff edge. The quality of the communities is being reduced by invasion of honeysuckle, crown vetch, black locust, and general spread of canopy with lack of fire. Deer browse is evident on prairie forbs. There was an old homestead east of the creeks east side bluff, that now grows with prairie grasses, a remnant representative of a more open canopy system. Limited areas of sand/gravel oak savanna exist in Battle Creek Park along bluffs above the river and creek. Few oak savannas survive in the Metro Region.

Over the past four years this unit, in conjunction with unit 3, has been being restored through funding provided by the Minnesota Department of Natural Resources conservation partners legacy and Ramsey County. The restoration so far has included the removal of buckthorn throughout the unit and conversion of hillsides along creek to native prairie. Other work has included foliar control of herbaceous weeds, such as garlic mustard, burdock and narrow leaf bittercress. Ongoing maintenance will include foliar control of remerging species and prescribed burns.

Management Issues

Ongoing and continued maintenance, following initial restoration, will be extensive and costly to keep the invasive species controlled while establishing native ground and shrub cover throughout all land cover types. Maintenance has yet to be defined.

Initial restoration did not include the conversion of blufflands to savanna with a more open canopy. Surveys should be completed to define the boundaries of these areas to prioritize for management and to determine what tree removal efforts will be needed to convert blufflands to savanna.

The preservation and propagation of the kitten tails within the area is not clearly defined. Surveys of other special species, specifically butternut hickory, need to be updated.

Numerous human factors are impacting this area, including:

- Encroachment from surrounding neighbors
- Pressure for more recreation
- Unofficial trails causing environmental damage throughout
- Rogue trails and hiking around bluffs surrounding southern part of creek is causing damage
- Education on the prevention of spread of emerging invasive, specifically along trail corridors, is lacking amongst the general public and users groups such as off-road cyclists and hikers.

Emerald ash borer is prevalent throughout this unit, with many ash trees infested and dying.

Deer browse will continue to be an issue within this unit. Control of the deer population is necessary to prevent over browsing of natural regeneration of shrubs and trees.

This area is a convergence of unique land cover types that warrant additional preservation. Pressure to expand trails and recreational amenities in this unit should be thoroughly assessed.

Management objective, tasks, schedule and cost

Objective 1

Complete observational surveys in each land cover type restored to determine location and level of native and invasive plant species re-emergence and new emerging exotics biannually.

Tasks:

- Complete biannual observation surveys and monitor areas that exhibit successful natural regeneration. Delineate areas needed for supplemental seeding and planting.
- Complete biannual observation surveys of exotic species that are spreading and create a distribution map of exotic invasive species
- Identify locations of emerging species, such as celandine (just south of Upper Afton Road on the east side of the creek) and narrowleaf bittercress (spotted throughout and concentrated along trails) to identify for eradication.

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Objective 2

Improve condition of sand/gravel oak savanna community, indicated by an increase in native diversity of understory plants and complete continued restoration efforts by converting to a more open canopy savanna where appropriate.

Tasks:

- Survey bluff land oak woods to identify locations ecologically and economically beneficial for conversion to savanna.
- Determine, with county forester, trees for removal within identified savanna locations
- Draft a plan detailing the specifications for savanna conversion using the Minnesota Department of Natural Resources native plant community guidelines: Southern Dry Savanna
- Acquire funding through state grant programs and/ or county parks to fully fund restoration project.
- Complete restoration of savanna.
 - Draft project specifications detailing restoration requirements
 - Hire contractor to complete restoration of each land cover type within project specifications.
 - Oversee contractors completion of restoration project

Schedule and costs

Year 2, July, collect survey information

Year 2, August – September, draft plan and apply for funding

Cost = parks staff time

Year 2, Year 3 December – Jan, draft project specifications and hire contractor

Cost = parks staff time

Year 3 – Year 6 Complete restoration

Cost = \$70,000.00

Objective 3

Continue ongoing preservation of restored lands at a level equal to or greater following initial restoration, using surveys and Minnesota Department of Natural Resources native plant community fact sheets for guidance. Hire contractor, implement plan and revise after three years.

Tasks:

- Draft a three year maintenance plan detailing the specifications for each land cover type maintenance needs, including efforts to stabilize eroding seep area.
- Secure funding for three year plan through state grant program or county funds and hire contractor to complete ongoing maintenance on a three year contract. At a minimum include all listed below.
- Continue maintenance by achieving a measureable reduction in exotics in restored areas of 80% or more, including buckthorn, honeysuckle, locust, Siberian elm and emerging exotics. Tools will include foliar spraying and prescribed burns.
- Monitor and eradicate new emerging invasive species.
- Increase diversity among the native shrub and herbaceous ground layer plants in the woodlands and prairie areas following the removal of exotics
- Foliar spray emerging buckthorn every fall following initial restoration for three years. Assess continued volume and timeline of foliar spraying following three year mark.
- Assess the need for an oak woodland burn after initial restoration. If woodland burn will be beneficial in setting back exotics and promoting native growth, complete burn in fuel rich areas every 3 to 5 years following initial restoration.
- If there is limited native regeneration of herbs, shrubs and trees, observed after one season growth following restoration complete the following:
 - Increase diversity in the native herbaceous ground layer plants by casting an appropriate native seed mix in the spring or following a prescribed burn.
 - Obtain shrub saplings from Minnesota Department of Natural Resources forestry or other reliable source and plant throughout the unit at a rate that will meet the percent cover listed in native plant community fact sheet.
 - Achieve observable regeneration of oaks by planting saplings throughout the project site as specified in the objective. Stagger the years of planting oak saplings to prevent oak wilt transfer by differing age classes.

Schedule and costs

Year 2 Jan - March: Draft maintenance plan and hire contractor
Cost = park staff time

Year 2-5: maintenance to be completed
Cost = \$51,260.00

Year 6 – 9 spring or fall, planting of native seed, shrubs and oak trees
Cost = To Be Determined

Objective 4

Continue maintenance to ensure establishment and success of established native prairie areas along creek by eliminating 90% or more of invasives found within 3 years and maintain this level annually.

Tasks:

- Inventory and map invasives encroaching in and on edges of prairies.
- Use contractor to treat and remove invasives from prairies
- Complete prescribed burns every 3 to 5 years

Schedule and costs

Year 1, mid to late July: survey inventory info
Cost = parks staff time

Year 1-3: seasonal, maintenance to remove invasives
Cost = contractor cost \$3,000.00

Every 3 to 5 years, spring. Complete prescribed burn of prairies
Cost = contractor cost \$4000.00

Objective 5

Identify current locations and protect and improve health of kittentail populations. Increase numbers and locations of kittentails in the oak savanna areas of the park.

Tasks:

- Complete desktop review of known locations given current data.
- Complete thorough field survey of kittentail populations and inventory human and exotic species impacts.
- Coordinate with Minnesota Department of Natural Resources Natural Heritage Program staff who have managed similar populations in southeast Minnesota to determine management requirements and propagation plan.
- Maintain and create a protection zone around known populations, to prevent impacts.

The Plan

Schedule and costs

Year 1, mid to late July: complete field survey
Cost = parks staff time

Year 1, August -September: review data with Minnesota Department of Natural Resources staff

Year 1-2, October – January: Draft protection and expansion plan

Year 3, June – October: Define protection zone and implement plan specifications

Objective 6

Control encroachments, unofficial trails and hiking on sensitive limestone bluff areas to prevent further impacts.

Tasks:

- Finish inventory of unofficial trails and encroachments throughout area
- Create plan to close and revegetate unofficial trails
- Reach out to neighbors encroaching on lands and have them stop and remove all infractions.
- Add interpretive sign near bluff entrances to educate park users on the importance of not climbing in and around bluffs and cave areas
- Communicate importance of sensitive areas being impacted through social media outlets

Schedule and costs

Annually, Feb: plan volunteer events
Cost = parks staff time

Annually, April: post updates and info on restoration, maintenance and invasive species
Cost = parks staff time

Objective 7

Increase environmental education and outreach for park neighbors, general public and user groups

Tasks:

- Meet annually, prior to growing season, with special user groups (Minnesota Off-Road Cyclists (MORC), hiking groups) representatives:
 - Plan for a minimum of one volunteer event to take place within unit
 - Update and post information on current exotics and steps to prevent spread
- Annually update social media and website to better connect people to the parkland and include restoration and maintenance work update
- Send an annual post correspondence to park neighbors informing them of ongoing restoration efforts and to respect park boundaries.

Schedule and costs

Annually, Feb: plan volunteer events

Cost = parks staff time

Annually, April: post updates and info on restoration, maintenance and invasive species

Cost = parks staff time

Objective 8

Control deer population to levels that protect native vegetation and allow woodland regeneration pursuant to the annual deer management plan.

Tasks:

- Complete annual population survey of area to determine reduction needs and methods
- Continue with annual special archery hunt to maintain population
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Schedule and costs

Annually: implement deer management plan

Cost = parks staff time

Objective 9

Continue current types of recreation uses to avoid impact of natural resources. Do not exceed more than 10% of land cover for recreational areas and trails.

Tasks:

- Do not expand recreational amenities beyond what currently exists in this unit. Only unpaved trails will be considered for expansion.
- Complete thorough environmental impact review and preserve sensitive areas when considering any additional unpaved trails
- Any expansion of unpaved trails should follow specifications and implementation guidelines when being constructed.

Schedule and costs

Ongoing as trail development is proposed

Cost = parks staff time

Management Unit 3

Unit Stats:

Dominant land cover type: Prairie

Dominant soil type: sandy loam

Dominant Terrain: flat plateau

Marschner Presettlement Vegetation: Wet Prairie

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)
- Regionally Significant Ecological Areas and Regional Ecological Corridors
- Environmental Natural Area: Ramsey County Park & Recreation department

Community Structure and Quality: Medium

Management Priority: Medium

Unit Description:

The bluff lands that exist on the southeast, south and west edge of this unit historically consisted of sand gravel prairie savannas that were connected to those in unit 2 and unit 4. This community is similar in structure and species composition to communities that continue outside the park along the bluffs toward Mounds Park. Only a few such areas remain in the Twin Cities Region. Much of this bluff land fringe has transitioned into more closed canopy oak and mixed woodlands with overgrown understory of aspen, sumac and buckthorn. Two sections of bluff land hillside on the west side, totaling 6 acres, were excavated for fill more than 30 years ago, which has left two concave impressions on the hillside that are now dominated by invasive grass and other species such as brome, crown vetch, garlic mustard and burdock. These two excavated areas have left gaps in what was historically a connected oak savanna bluff side. On a steep slope with in the oak woodlands located in the south east corner, west of battle creek road and north of Lower Afton Road, the water table is high and flows consistently throughout the year creating a wetland seep. There are numerous hydrophytic plants growing along this hillside wetland seep, including spotted Joe-pye weed, skunk cabbage and numerous rushes. This seep is causing erosion along the hillside. The flat plateau area overlooking the steep bluff lands was mostly cleared and farmed for the past 80 years. In the northeast corner is 13 acres of mixed woods, consisting of mostly invasive Siberian elm and black locust. An open field, being encroached by black locust, surrounds an excavated area. The open field area on the north consists of an excavated area where soil was borrowed for creek construction activities in the early 1980's, leaving a 4.3 acre depression. This rectangular bowl like depression is deep enough that the ground water table seeps through the surface, leaving standing water or saturated soil, depending on fluctuations in precipitation, throughout the footprint of the depression. This depression has now become an ephemeral wetland that exhibits hydrology, hydric soils and hydrophytic plants, such as spotted Joe-pye weed, jewel weed, willows, cattails, bulrush, swamp milkweed and a variety of sedge species. An overflow pipe near the base of the depression prevents water from accumulating in this area. The field area surrounding this depression is dominated by brome grass and is being encroached by black locust. The south section reverted to mixed woods and invasive grasses after farming had ceased. In early 2000's this area of around 12 acres was cleared of trees and converted to native prairie. This prairie is dominated by big blue stem and is being encroached by woody material, specifically buckthorn and black locust, mostly on the east and south edges.

A restoration project began in 2017 within unit 3 with funding provided by the Minnesota Department of Natural Resources Conservation partners Legacy grant program and Ramsey County. This project targeted clearing the buckthorn from all the woodlands within the unit. In addition to buckthorn removal, larger locust and Siberian elm were girdled throughout the unit and removed within the southeast corner in an attempt to open the canopy. This project also included herbaceous invasive weed control, including garlic mustard, burdock and narrowleaf bittercress. Maintenance and further tree removal throughout the unit will continue in the future to open the canopy along the bluffs, converting this area back into a savanna landscape. In addition, the invasive trees within the mixed woods

in the northeast corner were girdled and will likely be cleared to convert to prairie.

Management Issues

The initial restoration removed a massive amount of buckthorn and other invasives across the entire unit. A lot of work is being completed, however, there are standing issues that will need to be addressed:

- Native grasses, flowers and oaks started emerging immediately after the first season of buckthorn removal in certain locations. Further information is lacking to determine if supplemental seeding and planting is required and where invasives are re-emerging.
- Ongoing and continued maintenance will be extensive and costly to keep the invasives controlled while establishing native ground and shrub cover.
- The mixed woodland in the northeast corner contains no desirable trees and is mainly invasive Siberian elm and black locust.
- Initial restoration did not include the removal of trees required to convert oak and mixed woodlands in to savanna with a more open canopy. An assessment is required to define which trees should be removed.
- The old field surrounding the depression consists of invasive species such as brome, locust and other invasive.

Many new invasive exotics are emerging throughout this unit, specifically narrowleaf bittercress. Surveys of the area to locate and eradicate newly emerging invasives is required.

The planted native prairie areas contain herbaceous and encroaching woody invasives.

The wetland seep area is slowly eroding because of lack of natural vegetation throughout the seep and surrounding hillsides.

Can the wetland bowl be altered to provide more beneficial wildlife habitat? Can diversity of the wetland edges be increased with plantings or other management and would the cost of wetland management be worth the habitat benefits in this area?

Emerald ash borer is prevalent throughout this unit, with many ash trees infested and dying.

Deer browse will continue to be an issue within this unit. Control of the deer population is necessary to prevent over browsing of natural regeneration of shrubs and trees.

The trails in this unit are well established and include many off-road cycling and mowed turf trails used for skiing in the winter. The maintenance of these trails, mainly including the width and timing of flailing and mowing of trail edges needs to be defined to minimize impact on the resources.

Given heavy trail use, there are many opportunities in this area for interpretive signage, related to forest community, exotic species, wetland diversity, and prairie restoration.

Education on the prevention of spread of emerging invasive, specifically along trail corridors, is lacking amongst the general public and users groups such as off-road cyclists and hikers.

There is pressure to expand trails and recreational amenities in this unit.

Management objective, tasks, schedule and cost

Objective 1

Complete observation surveys in each land cover type restored to determine location and level of native and invasive plant species re-emergence and new emerging exotics.

Tasks:

- Complete biannual observation surveys and monitor areas that exhibit successful natural regeneration. Delineate areas needed for supplemental seeding and planting.
- Complete biannual observation surveys of exotic species that are spreading and create a distribution map of exotic invasive species

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Objective 2

Complete continued restoration efforts by converting oak woods (bluff lands) to a more open canopy savanna where appropriate and mixed woods (northeast corner) and old field (surrounding bowl depression) to native prairie

Tasks:

- Survey bluff land oak woods to identify locations ecologically and economically beneficial for conversion to savanna.
- Determine, with county forester, trees for removal within identified savanna locations
- Draft a plan detailing the specifications for prairie and savanna conversion using the MN Department of Natural Resources native plant community guidelines: Southern Dry Savanna
- Acquire funding through state grant programs and/ or county parks to fully fund restoration project.
- Complete restoration of land cover types.
 - Draft project specifications detailing restoration requirements
 - Hire contractor to complete restoration of each land cover type within project specifications.
 - Oversee contractors completion of restoration project

Schedule and costs

Year 2, July, collect survey information

Year 2, August – September, draft plan and apply for funding

Cost = parks staff time

Year 2, Year 3 December – Jan, draft project specifications and hire contractor

Cost = parks staff time

Year 3 – Year 6 Complete restoration

Cost = \$160,000.00

Objective 3

Continue ongoing preservation of restored lands at a level equal to or greater following initial restoration, using surveys and Minnesota Department of Natural Resources native plant community fact sheets for guidance. Hire contractor, implement plan and revise after three years.

Tasks:

- Draft a three year maintenance plan detailing the specifications for each land cover type maintenance needs, including efforts to stabilize eroding seep area.
- Secure funding for three year plan through state grant program or county funds and hire contractor to complete ongoing maintenance on a three year contract. At a minimum include all listed below.
- Continue maintenance by achieving a measureable reduction in exotics in restored areas of 80% or more, including buckthorn, honeysuckle, locust, Siberian elm and emerging exotics. Tools will include foliar spraying and prescribed burns.
- Monitor and eradicate new emerging invasive species.
- Increase diversity among the native shrub and herbaceous ground layer plants in the woodlands and grasses and flowers in the savanna and prairie areas following the removal of exotics
- Foliar spray emerging buckthorn every fall following initial restoration for three years. Assess continued volume and timeline of foliar spraying following three year mark.
- Assess the need for an oak woodland burn after initial restoration. If woodland burn will be beneficial in setting back exotics and promoting native growth, complete burn in fuel rich areas every 3 to 5 years following initial restoration.
- If there is limited native regeneration of herbs, shrubs and trees, observed after one season growth following restoration complete the following:
 - Increase diversity in the native herbaceous ground layer plants by casting an appropriate native seed mix in the spring or following a prescribed burn.
 - Obtain shrub saplings from MN Department of Natural Resources forestry or other reliable source and plant throughout the unit at a rate that will meet the percent cover listed in native plant community fact sheet.
 - Achieve observable regeneration of oaks by planting saplings throughout the project site as specified in the objective. Stagger the years of planting oak saplings to prevent oak wilt transfer by differing age classes.

Schedule and costs

Year 2 Jan - March: Draft maintenance plan and hire contractor

Cost = park staff time

Year 2-5: maintenance to be completed

Cost = \$51,260.00

Year 6 – 9 spring or fall, planting of native seed, shrubs and oak trees

Cost = To Be Determined

Objective 4

Continue maintenance to ensure establishment and success of established native prairie areas and savanna area along Winthrop by eliminating 90% or more of invasives found within 3 years and maintain this level annually

Tasks:

- Inventory and map invasives encroaching in and on edges of prairies.
- Use contractor to treat and remove invasives from prairies
- Complete prescribed burns every 3 to 5 years

Schedule and costs

Year 1, mid to late July: survey inventory info

Cost = parks staff time

Year 1-3: seasonal, maintenance to remove invasives

Cost = contractor cost \$8,815.00

Every 3 to 5 years, spring. Complete prescribed burn of prairies

Cost = contractor cost \$4000.00

Objective 5

Complete inventory of wetland and buffer areas for restoration decision making

Tasks:

- Coordinate with the local watershed district and parks soil and water division to complete a wetland assessment
- Assessment should identify problem areas and list wetland restoration options
- Contact state agencies to determine wetland status and option to use as a wetland bank

Schedule and costs

Year 1: July – August, complete assessment of wetlands

Cost = parks staff time

Year 1: Sept, coordinate with state agencies

Cost = parks staff time

Objective 6

Increase environmental education and outreach for general public and user groups

Tasks:

- Maintain existing boot brush station for continued use and education

The Plan

- Meet annually, prior to growing season, with special user groups (MN off-road cyclists (MORC) and ski group) representatives:
 - Plan for a minimum of one volunteer event to take place within unit
 - Update and post information on current exotics and steps to prevent spread
- Annually update social media and website to better connect people to the parkland and include restoration and maintenance work update
- Coordinate with a minimum of two volunteers per year to complete observational surveys or invasive species removal within the unit

Schedule and costs

Annually, Feb: plan volunteer events

Cost = parks staff time

Annually, April: post updates and info on restoration, maintenance and invasive species

Cost = parks staff time

Objective 7

Control deer population to levels that protect native vegetation and allow woodland regeneration pursuant to the annual deer management plan.

Tasks:

- Complete annual population survey of area to determine reduction needs and methods
- Continue with annual special archery hunt to maintain population
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Schedule and costs

Annually: implement deer management plan

Cost = parks staff time

Objective 8

Complete thorough environmental impact review and preserve sensitive areas when considering any development in this area.

Tasks:

- Coordinate with planning staff to determine locations and level of development acceptable within unit.
- Continue current types of recreation uses to avoid impact of natural resources.
- Ensure no more development (trails, amenities) are constructed within the bluff lands area or near the wetland seep. Any future recreational expansion should only be considered within the flat plateau area and follow MRCCA guidelines.
- Continue maintenance of existing off-road cycling trails to avoid environmental impacts

Schedule and costs

Ongoing as development is proposed

Cost = parks staff time

Management Unit 4

Unit Stats:

Dominant land cover type: Oak woods

Dominant soil type: loamy sand

Dominant Terrain: steep hills

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status:

- The southwest corner of unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)
- Regionally Significant Ecological Areas and Regional Ecological Corridors
- MN Native plant Community
 - Sites of biodiversity significance, moderate
 - MHs37a - Red Oak - White Oak Forest, Mesic Hardwood Forest System. Southern Dry-Mesic Oak Forest. 61.5 acres. Vulnerable to Extirpation
 - UPs13b - Dry Sand - Gravel Prairie (Southern), Upland Prairie System. 1.54 acres. Imperiled
- Environmental Natural Area: Ramsey County Park & Recreation department

Community Structure and Quality: Medium

Management Priority: High

Unit Description:

The west central area of this unit includes seventy-five acres of dry oak forest, dominated by various oaks, including pin, red, white oak and bur oak. Other native trees include large and small black cherry trees, cottonwoods, and aspen. Oak wilt is widespread among the red oaks in the forest, and removal of diseased trees is an ongoing management activity. There is a 1.5 acre open prairie area containing remnant native plants, located on a plateau in the middle of the oak forested area. Aerial photos indicate that in 1945 this area was a more open oak woodland, with only about half of the current forest canopy evident. Some of the woodland was used for haying and pasture. Buckthorn is widespread in the shrub layer, with high density throughout. Buckthorn and sumac are particularly numerous where the canopy has been opened by oak wilt; these are also the areas where small oaks are numerous. The ground layer includes dry forest herbs, though diversity is much reduced in areas of heavy buckthorn infestation. Southern portions of this community area or south-facing slopes may be areas suitable for savanna or open woodland restoration. Northern parts of this area, and north and east-facing slopes may be more suitably left as forest. Dry oak forest communities cover about half of the area of Battle Creek Park. Mature forests of this type with large canopy trees are uncommon in the Metro Region; this area is recognized by the MN Department of Natural Resources as a native plant community of significance that warrants preservation and is vulnerable to extirpation. The area has wide trails, and is heavily used by hikers, joggers, bikers and cross-country skiers. Off-road cycling trails exist in this unit, with additional tracks proposed.

The south portion of this unit consists of south and west facing bluff tops that are dominated by large bur oaks, with some, white, red and pin oaks. These areas were historically very open, with minimal tree cover. The understory is much overgrown with aspen, sumac and buckthorn encroaching on the steep hillsides. Small openings of prairie grasses and forbs are scattered, though they are gradually being overgrown by aspen and sumac. Prairie forbs include spiderwort, flowering spurge; and grasses including little bluestem are scattered throughout under the canopy with concentrations in more open areas. This area includes a small, dry prairie opening dry prairie, sand-gravel subtype recognized by the MN Department of Natural Resources as a native plant community that is

imperiled. In this area is a small but diverse collection of prairie grasses and forbs at opening in woods at south end of trail as it turns west--below large bur oaks. Includes little bluestem, leadplant, coreopsis, and others. Needle grass and hoary puccoon were listed within the 1996 plan as being present in these areas, but have not been observed recently. Small patches of prairie forbs continue in woods along edge of bluff under heavy buckthorn & undergrowth to east and west of this clearing. Aspen and sumac clones are also encroaching on the prairie opening and shading other prairie remnant areas along the bluff. This community is similar in structure and species composition to communities that continue outside the park along the bluffs toward Mounds Park. Limited areas of sand/gravel savanna exist in Battle Creek Park, along river and creek bluffs. Only a few such areas remain in the Twin Cities Region. Southwest, downslope, of this sand gravel prairie along the hillside north of Lower Afton Road and east of battle creek road, the water table is high and flows consistently throughout the year creating a wetland seep. There are numerous hydrophytic plants growing along this hillside wetland seep, including spotted Joe-pye weed, skunk cabbage and numerous rushes.

The eastern section of this unit consists of 24.72 acres of planted native prairie, with scattered oak trees and conifer plantations stands which were planted in the late 1980's. The native prairie areas are mostly flat and were historically farmed. There are wetlands on the northeast (freshwater pond and emergent) and southeast (freshwater forest/shrub and emergent) corners of the site that were never altered by previous farming activities. On the east edge, west of Winthrop St, is an area of open old growth oak woodlands, resembling a savanna, which was not historically farmed. The linear section east of Winthrop street is a mostly steep south facing slope that is mixed woods that is highly degraded with buckthorn. There is also planted conifers. This section was historically farmed and pastured in the steeper areas. On the west edge of this piece is an open area where some native prairie plants growing. This open area is being encroached by invasives and undesirable spreading trees, such as aspen.

The north end of this unit is flat and was historically one large farm field. The area now consists of mixed woods, consisting of quaking aspen, boxelder and the occasional oak and an open field that is currently mowed. There is also less than a half-acre forested/shrub wetland within this area.

Management Issues

General plant and animal surveys are lacking for the entire unit. The MN county biological survey native plant community information defining the oak woods and sand gravel prairies was completed in 1990 and updated surveys are necessary to redefine boundaries and prioritize areas for management.

All of the woodland areas are heavily infested with exotic invasive species, primarily buckthorn. This is putting a strain on oak regeneration and native shrubs and herbaceous vegetation. The planted native prairies are being encroached by woody and herbaceous invasives. The conifer plantations conflict with the native landscapes open oak woods and native prairie. The conifer stands are overgrown and understory is high density buckthorn. The historically open canopy areas, mostly the south and southwest facing hillsides, are being overgrown with tree species, such as aspen, black locust and Siberian elm, which is suppressing the native prairie grasses and forbs. The native plant community, sand gravel prairie is degrading from encroachment of invasive shrubs and trees. The mowed field north in unit provides little to no habitat. The restoration of this unit may have to be phased or partitioned to allow for adequate time and funding.

Oak wilt occurs in much of the woodland but the extent is unknown. A forest management plan for restoration and oak wilt remediation does not exist.

The wetlands health and level of habitat quality are unknown.

Overpopulation of deer can set back the natural succession of native shrubs and trees by over browsing.

There is pressure to expand trails and recreational amenities in this area that would impact the native prairies and oak woodlands.

Continued management of all land cover types following initial restoration will be extensive until regeneration of

The Plan

native vegetation is dominant

Management objective, tasks, schedule and cost

Objective 1

Complete surveys within each upland land cover type throughout unit prior to and following restoration planning and implementation. Determine which areas should be managed for prairie, open savanna or oak woodland given data on soils, slopes, and vegetation. Natural resource manager will determine which level of plant survey will be completed for each land cover type. Animal surveys will be completed following, given the tasks below.

Tasks:

- Identify areas with highest vegetation quality and areas where exotic species are a problem. At a minimum, create the following for entire area:
 - Distribution map of exotic invasive species
 - Delineation of vegetation of highest quality
 - General land cover data update
- Complete baseline plant plot survey or ecological assessment of the entire unit if funding and time allows. At a minimum complete plot survey and update boundaries of native plant communities (oak woodlands, savanna, and sand/ gravel prairies) prior to restoration.
- Complete annual plant community observational surveys after restoration to monitor invasives and determine success in oak and understory regeneration.
- Complete observational animal surveys, including insect, bird and amphibian/reptile following plant surveys.
- Monitor breeding and migrating bird populations after buckthorn removal activities to determine effects on populations.

Schedule and costs

Year 1: July – August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: Spring – summer of first season complete baseline plot survey or ecological assessment of native plant communities and other land covers within unit if funding allows.

Cost = contractor cost, native plant communities: \$8,000.00

Cost = contractor cost, for entire unit: \$15,000.00

Year 2: Summer, complete observational animal surveys

Cost = parks staff time

Annually: Summer: complete observational plant and animal surveys for each defined land cover type

Cost = parks staff time

Objective 2

Use survey data to develop plan to restore and convert upland land cover to quality savanna, oak woodlands or prairie. Use the following Minnesota Department of Natural Resources native plant community fact sheets for restoration requirements and metrics: Southern Dry-Mesic Oak Forest for the upland oak woodlands, Southern Dry Prairie for designated sand/gravel prairie areas and Southern Dry Savanna for south, southwestern facing bluff areas. In addition to these communities, restore all other land cover types to reduce the amount of exotic species by 80%

or more and maintain control of exotic species so that there is an observable regeneration of canopy tree and native ground vegetation. Determine if conversion of planted conifers and mowed field to native prairie or oak woodlands is beneficial and cost effective.

Tasks:

- Draft two separate plans detailing the specifications for:
 - Project 1: Savanna conversion and sand gravel prairie restoration which will include:
 - A measureable reduction in woody understory plants, including buckthorn, sumac and aspen, to restore the oak savanna and prairie community's.
 - An increase in native diversity among the herbaceous community.
 - Observable regeneration of bur oaks.
 - Project 2: Oak and mixed woodland restoration which will include
 - Conversion of mowed turf and conifer plantations to prairie if warranted
 - Increase diversity in native shrub and herbaceous ground layer plants following removal of exotics
 - Achieve observable regeneration of oaks and black cherry
- Acquire funding through state grant programs and/ or county parks to fully fund restoration project.
- Complete restoration of land cover types.
 - Draft project specifications detailing restoration requirements
 - Hire contractor to complete restoration of each land cover type within project specifications.
 - Oversee contractors completion of restoration project

Schedule and costs

Year 3 August – September, draft plans and apply for funding for both projects.

Cost = parks staff time

Year 3, Year 4 December – Jan, draft project specifications and hire contractors for both projects

Cost = parks staff time

Year 4 – Year 6 Complete restoration of both projects within unit

Cost = \$400,000.00

Objective 3

Continue maintenance to ensure establishment and success of established native prairie areas and savanna area along Winthrop by eliminating 90% or more of invasives found within 3 years and maintain this level annually

Tasks:

- Inventory and map invasives encroaching in and on edges of prairies.
- Use contractor to treat and remove invasives from prairies
- Complete prescribed burns every 3 to 5 years

Schedule and costs

Year 1, mid to late July: survey inventory info

Cost = parks staff time

Year 1-3: seasonal, maintenance to remove invasives

Cost = contractor cost \$52,816

The Plan

Every 3 to 5 years, spring. Complete prescribed burn of prairies

Cost = contractor cost \$6800.00

Objective 4

Draft a three year maintenance plan that will include tasks and projected costs for oak woods, savanna and native prairies, pursuant to associated MN Department of Natural Resources native plant community fact sheet. Implement plan and revise after three years.

Tasks:

- Draft a three year maintenance plan detailing the specifications for each land cover type maintenance needs
- Secure funding for three year plan through state grant program or county funds and hire contractor to complete ongoing maintenance on a three year contract. At a minimum include all listed below.
- Continue maintenance by achieving a measureable reduction in exotics in restored areas of 80% or more, including buckthorn, honeysuckle, locust, Siberian elm and emerging exotics. Tools will include foliar spraying and prescribed burns.
- Increase diversity among the native shrub and herbaceous ground layer plants in the woodlands and grasses and flowers in the savanna and prairie areas following the removal of exotics
- Foliar spray emerging buckthorn every fall following initial restoration for three years. Assess continued volume and timeline of foliar spraying following three year mark.
- Assess the need for an oak woodland burn after initial restoration. If woodland burn will be beneficial in setting back exotics and promoting native growth, complete burn in fuel rich areas every 3 to 5 years following initial restoration.
- If there is limited native regeneration of herbs, shrubs and trees, observed after one season growth following restoration complete the following:
 - Increase diversity in the native herbaceous ground layer plants by casting an appropriate native seed mix in the spring or following a prescribed burn.
 - Obtain shrub saplings from MN Department of Natural Resources forestry or other reliable source and plant throughout the unit at a rate that will meet the percent cover listed in native plant community fact sheet.
 - Achieve observable regeneration of oaks by planting saplings throughout the project site as specified in the objective. Stagger the years of planting oak saplings to prevent oak wilt transfer by differing age classes.

Schedule and costs

Year 5 July- August: Draft maintenance plan and hire contractor

Cost = park staff time

Year 6 - 9 October: maintenance to be completed

Cost = \$51,260.00

Year 7 – 9 spring or fall, planting of native seed, shrubs and oak trees

Cost = To Be Determined

Objective 5

Work with forester to map current oak wilt and develop an oak wilt management plan for this unit

Tasks:

- Survey the woodlands and GPS polygon boundaries around active oak wilt sites
- Survey for natural regeneration and determine if oak tree planting is required
- Draft plan including: sites, access, management methods and costs

Schedule and costs

Year 6: July – Sept, map oak wilt, survey for natural regeneration

Cost = parks staff time

Year 6: October – December, draft oak wilt management plan

Cost = parks staff time

Objective 6

Gather wetland information and complete wetland surveys for restoration decision making

Tasks:

- Gather existing State wetland data
- Complete plant surveys on wetlands that lack existing data
- Prioritize wetlands to determine if restoration is cost effective
- Work with local watershed district and state agencies to secure funding and coordinate restoration of wetlands

Schedule and costs

Year 6: July – August, complete assessment of wetlands

Cost = parks staff time

Objective 7

Control deer population to levels that protect native vegetation and allow woodland regeneration pursuant to the annual deer management plan.

Tasks:

- Complete annual population survey of area to determine reduction needs and methods
- Continue with annual special archery hunt to maintain population
- Coordinate and contract sharp shooting removal service if population exceeds State standards

The Plan

Schedule and costs

Annually: implement deer management plan

Cost = parks staff time

Objective 8

Ensure the long term preservation of this unit, especially sensitive native plant communities.

Tasks:

- No development within the designated native plant communities beyond approved unpaved trails
- Identify and remove rogue trails causing erosion or negative impact
- Draft a flail and mow plan that highlights cutting widths and time of year to complete activities
- Additional recreation uses, park features, trails should be assessed to determine environmental impact prior to implementation.
- Off-road cycling trails should follow implementation guidelines when proposed
- A public engagement process of park amenities should involve environmental groups

Schedule and costs

Year 1 October - November: identify rogue trails, review mowing patterns

Year 1,2: December – Jan. : draft mowing plan for unit

Year 2. April – May: reestablish rogue trails, revegetate and regrade

Cost = parks staff time, conservation corp for trail establishment. \$3000.00 for vegetation materials.

Management Unit 5

Unit Stats:

Dominant land cover type: Oak woods

Dominant soil type: loamy sand

Dominant Terrain: steep banks, creek corridor

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status: N/A

Community Structure and Quality: Low

Management Priority: Medium

Unit Description:

This is a relatively short, narrow creek corridor, with a mature forest canopy over Battle Creek. Upper slope areas are a dry oak woodland dominated by a mix of oaks, like other forest areas to the east, with river bottom species in low areas along the creek. Historically much of this corridor was not farmed likely due to the terrain and soils. The tree canopy was more open than it is presently, and many old growth oaks still exist throughout the woodlands. The understory has high density invasion of buckthorn; other shrub and ground species are sparse, and similar to those found in other dry oak woodland areas of the park. Battle Creek flows from the east to west through the site. The water quality of the creek is good, with reed canary grass, sedges, and other forbs along the meandering banks.

Small fish, mussels, and amphibians are evident in the creek. Narrow dirt foot paths follow the creek and occasionally traverse the slopes. Deer and heron tracks are evident.

This area serves as a connecting corridor between larger tracts of land for wildlife.

Dry oak forest covers about half of Battle Creek Park, but mature forests are uncommon in the Metro Region. Creeks with mature forest canopy cover are rare habitat types in this watershed and the urbanized Twin Cities area.

Management Issues

Plant and animal survey information for this entire unit is lacking and needs to be updated.

Riparian area and creek shoreline over health is unknown and survey information needs to be updated for future restoration decision making.

This unit is inundated by exotic invasive species, particularly highly dense stands of buckthorn. Extent of invasive trees within the woodlands is unknown.

Education and outreach with neighbors and adjacent school can be increased to promote the preservation and protection of this area.

Management objective, tasks, schedule and cost

Objective 1

Coordinate initial and ongoing surveys (annually) of plants, birds, and other animal species in this community area, and map areas with invasive species or other problems.

Tasks:

- Identify areas with highest vegetation quality and areas where exotic species are a problem. At a minimum, create the following:
 - Distribution map of exotic invasive species
 - Delineation of vegetation of highest quality
 - General land cover data update
- Complete baseline plant plot survey or ecological assessment of the entire unit if funding and time allows.
- Complete observational animal surveys, including insect, bird and amphibian/reptile following plant surveys.
- Annually complete observational plant community surveys after exotics removal to determine success in oak and understory regeneration and to locate reestablishing invasives.
- Annually monitor breeding and migrating bird populations after buckthorn removal activities to determine effects on populations.

Schedule and costs

Year 1: July – August, complete minimum surveys to capture the majority of invasive and native plant species.
Cost = parks staff time

Year 1: Spring – summer of first season complete baseline plot survey or ecological assessment of unit.
Cost = contractor cost \$8,000.00

Annually, July: ongoing surveys to monitor area following restoration.

Objective 2

Complete inventory of riparian zone and creek shoreline for restoration decision making

Tasks:

- Coordinate with the local watershed district and parks soil and water division to complete a shoreline assessment
- Assessment should identify problem areas and list shoreline restoration options to be installed in the future.

Schedule and costs

Year 2: July – August, complete minimum surveys to inventory the majority of invasive and native plant species following restoration.

Cost = parks staff time

Objective 3

Restore and convert upland land cover types to native plant communities using the Minnesota DNR native plant community fact sheet for Southern Dry-Mesic Oak Forest to determine restoration requirements and metrics for the upland oak woodlands. Restore riparian areas to reduce the amount of exotic species by 80% or more and maintain control of exotic species so that there is an observable regeneration of canopy tree and native ground vegetation.

Tasks:

- Draft a plan detailing the specifications for each land cover type restoration and conversion.
 - Focus will be on restoration of the oak woodlands primarily and riparian areas secondary.
 - There is a stand of planted conifers and an area of old field that is currently mowed. Determine if the benefit to convert these areas to oak woodlands is cost effective.
- Acquire funding through state grant programs and/ or county parks to fully fund restoration project.
- Complete restoration of land cover types.
 - Draft project specifications detailing restoration requirements
 - Hire contractor to complete restoration of each land cover type within project specifications.
 - Oversee contractors completion of restoration project

Schedule and costs

Year 3 August – September, draft plan and apply for funding

Cost = parks staff time

Year 3, Year 4 December – Jan, draft project specifications and hire contractor

Cost = parks staff time

Year 4 – Year 6 Complete restoration of unit

Cost = \$168,935.00

Objective 4

Connect parks education and communication staff with nearby school to determine interest in using parkland for projects or outdoor education and develop plan. School has completed buckthorn removal projects in the past and

shown interest. Send information on restoration efforts to adjacent neighbors prior to the start of project.

Schedule and costs

Year 1, 2 school year, connect with school staff and develop plan

Cost = parks staff time

Year 4, March – Provide information and educate neighbors on restoration project

Cost = parks staff time

Management Unit 6

Unit Stats

Dominant land cover type: Wetlands and active use

Dominant soil type: silt loam

Dominant Terrain: rolling hills

Marschner Presettlement Vegetation: Oak openings and barrens

Government recognition and protection status: N/A

Community Structure and Quality: Low

Management Priority: Medium

Unit Description

This unit consist of a series of open water wetlands, in stream of Battle Creek, that were constructed by the Ramsey-Washington Metro Watershed District for flood control. These wetlands are surrounded by a mix of native shrubs, and exotics such as amur maple, reed canary grass and cattails. Active use area of around 15 acres consists of pavilions, picnic areas, open turf and a water park feature within the center of the unit. One large section of turf that remains is on the west side of the site adjacent to McKnight road. Within this turf are stands of conifers and amur maples. North within the site is a conifer plantation that was planted in the late 1980's surrounded by mixed woods to the east and west, with these sections of woods containing some old growth oak trees. There are also conifers that were planted on the west and southwest corner of the unit. There is a grove of old growth oak trees on the south side abutting upper Afton road and west of the park entrance road. In 2016, a restoration project began that successfully converted 7.47 acres of old field and 2.51 acres of unused turf grass areas into planted native prairie. The areas north of the pavilion were planted with Minnesota State Seed mix 35-241 (Mesic Prairie General) and the areas to the south were planted with State Seed Mix 35-221 (Dry Prairie General).

Although this area is geared toward active use, there is quality wildlife habitat that is used by numerous grassland birds, insects and mammals, such as whitetail deer, fox and coyotes.

Management Issues

The planted native prairie areas contain herbaceous and encroaching woody invasives.

The conifer plantations conflict with the historic landscape of open oak barrens. The conifer stands are overgrown causing trees to die off.

The mixed woodlands are overgrown with invasives, mainly buckthorn and unwanted tree overgrowth, such as boxelder, Siberian elm and some locust.

The use of turf grass areas, mainly the section on the west side, is unknown. Unused turf grass areas provide little to no wildlife habitat benefit.

The health of the wetland buffer areas are unknown.

The Plan

Management objective, tasks, schedule and cost

Objective 1

Continue maintenance to ensure establishment and success of native prairie areas ongoing by eliminating 90% or more of invasives found within 3 years and maintain this level annually

Tasks:

- Inventory and map invasives encroaching in and on edges of prairies.
- Use contractor to treat and remove invasives from prairies
- Complete prescribed burns every 3 to 5 years
- Complete annual survey of prairie areas at the peak of growing season to determine:
 - Quality, ensure there is an appropriate mix of grasses and forbs pursuant to the MN DNR seed mixes installed
 - Encroachment of invasives

Schedule and costs

Year 1, mid to late July: survey inventory info

Cost = parks staff time

Year 1-3: seasonal, maintenance to remove invasives

Cost = contractor cost \$16,500

Every 3 to 5 years, spring. Complete prescribed burn of prairies

Cost = contractor cost \$2,500.00

Objective 2

Maintain health of conifer stands through selective harvest. Consider plan for removal of conifer stands, focusing on north stand, for conversion to native prairie or oak woodlands.

Tasks:

- Survey conifer stand with county forester to determine volume of removal and projected cost
- Thin conifer stands as recommended.
- Start the planning process to determine cost/benefit of conifer conversion to native landscapes

Schedule and costs

Year 1, summer: survey conifer stands

Cost = parks staff time

Year 2. Planning process to determine conversion

Cost = parks staff time

Year 2-4, winter: thinning or removal of conifer stands.

Cost = contractor cost \$15,000.00 – \$40,000.00

Objective 3

Complete the restoration of the woodlands on the north side of site to reduce 80% or more of invasive species and removal of unwanted tree species to preserve and improve oak woodlands.

Tasks:

- Draft a plan detailing the specifications for each land cover type restoration and conversion. Focus will be on restoration of 3.35 mixed and 2.10 oak woodlands and conversion of 5.9 acres of mixed woods to oak woods
- Acquire funding through state grant programs and/ or county parks to fully fund restoration project.
- Complete restoration of land cover types.
 - Draft project specifications detailing restoration requirements
 - Hire contractor to complete restoration of each land cover type within project specifications.
 - Oversee contractor's completion of restoration project

Schedule and costs

Year 1 August – September, draft plan and apply for funding

Cost = parks staff time

Year 1, Year 2 December – Jan, draft project specifications and hire contractor

Cost = parks staff time

Year 2 – Year 5 Complete restoration of unit

Cost = \$31,573.76

Objective 4

Inventory the use of turf grass area, specifically the west side section, to determine which areas could be converted to native prairies.

Tasks:

- Survey use and determine special interest groups that use existing turf
- Delineate turf grass areas that are unused
- Convert turf grass areas to native prairie

Schedule and costs

Year 1, use communication and outreach staff to survey turf grass use

Cost = parks staff time

Year 2. Delineate unused turf grass areas

Cost = parks staff time

Year 2, August - September: draft plan and submit for funding to convert areas to native prairie

Cost = parks staff time

Objective 5

Complete inventory of wetland buffer areas for restoration decision making

Tasks:

- Coordinate with the local watershed district and parks soil and water division to complete a wetland buffer assessment
- Assessment should identify problem areas and list wetland restoration options

Schedule and costs

Year 1: July – August, complete assessment of wetlands

Cost = parks staff time

Management Unit 7

Unit Stats

Dominant land cover type: Oak Woods. Dry Oak forest on well drained soils.

Dominant soil type: loamy sand

Dominant Terrain: steep hills

Marschner Presettlement Vegetation: Oak openings and barrens

Government recognition and protection status: N/A

Community Structure and Quality: High

Management Priority: High

Unit Description

A deciduous forest community with a canopy dominated by large pin and white oaks. Mature trees are widely spaced, have single stems, and are of varying size. There are large black cherry in the canopy as well, and a few bur oaks. Smaller trees include white birch, black cherry, slippery elm and basswood. The shrub layer is dominated by chokecherry and elder. The ground layer is patchy, with north-facing slopes dominated by various fern species, and other areas with a variety of dry forest herbs and Virginia creeper. Battle Creek flows from east to west on the north edge of this unit.

The forest is in a little-used corner of the park, with large private residences adjacent across Battle Creek. A few narrow dirt paths and deer paths cross the area. Slopes are steep, and trails are narrower and appear to have less use than most areas of the park. The forest was once part of the Ramsey County Work Farm. There is an abutting City park in the southeast corner of the park that consists of stormwater features, oak forest and planted native prairies.

This oak forest is small, but of high quality. Mature dry oak forest covers about half the area of Battle Creek Park, but mature forests, particularly of high quality, are rare in the Metro Region.

Park neighbors have been voluntarily removing buckthorn on the north east section of this unit, which has kept a few acres within this section cleared of buckthorn. A woodland restoration focused on invasive removal (buckthorn) began in 2019 and will continue into 2022. This restoration was funded through MN DNR Conservation Partners Legacy grant and county funds. The restoration work completed includes the removal, treatment and burning of buckthorn piles.

Management Issues

Though small, this is a high-quality oak forest. It can serve as a model and seed source for improvement of other forest areas in the park, both for forest structure and species composition. The forest and adjacent creek provide habitat for large raptors, migratory songbirds, and waterfowl, evident in spring field trips to the area. Removal and management of established exotics and complete eradication of emerging exotics should be a priority to maintain diversity of forest trees and ground vegetation. Reed canary grass has invaded the edges of the creek and wetland adjacent to the forest--it should be monitored and controlled if it begins to invade forest areas. Coordination with the City of Maplewood to complete work on abutting natural areas should be a priority.

The creek thorough this unit is a valuable resource, but serves as a corridor for emerging exotics and shows signs of shoreline degradation in many areas. Since 2015, newer invasive exotic species have been emerging along the creek corridor and include Japanese knotweed (*Polygonum cuspidatum*), Butterbur (*Petasites*) and bishop weed (*Aegopodium podagraria*). Known locations of these exotics are currently being treated in an attempt to eradicate within this area.

Invasive tree species such as black locust and Siberian elm have emerged on the edges of the woodlands, especially along the south edge abutting Upper Afton road. Toward the south area of the forest and on south slopes, some disturbance has occurred, and invasion of nettles is evident along trails and areas where canopy has been disturbed.

Control of deer population may aid in maintaining the continuing health and diversity of the oak forest community. Deer activity is evident, and browse is occurring on small trees and forest herbs.

Homeowners across the creek have extensive perennial gardens consisting of many non-native species, with some non-native species like red monarda and ligularia planted along the edge of the forest. Invasion of the native community by aggressive non-natives from this source are a problem.

Management objective, tasks, schedule and cost

Objective 1

Coordinate surveys of plants, birds, and other animal species in this community area, and map areas with invasive species or other problems.

Tasks:

- Complete inventory and/ or ecological assessment to collect baseline plant vegetation data.
- Following plant inventory, parks staff will monitor plant communities annually to determine success in exotics removal, oak regeneration, and deer control.
- Staff and volunteers can be used to complete insect and breeding and migrating bird surveys to determine management effects on populations through observation surveys.

Schedule and costs

Year 3: July – August, complete minimum surveys to capture the majority of invasive and native plant species following restoration.

Cost = parks staff time

Objective 2

Complete inventory of creek shoreline for restoration decision making

Tasks:

- Coordinate with the local watershed district and parks soil and water division to complete a shoreline assessment
- Assessment should identify problem areas and list shoreline restoration options to be installed in the future.

Schedule and costs

Year 3: July – August, complete minimum surveys to capture the majority of invasive and native plant species following restoration.

Cost = parks staff time

Objective 3

Complete restoration of entire unit, converting mixed woodlands to oak woods and placing emphasis on the restoration of understory within the upland oak woodlands.

Tasks:

- Continue coordination of contractors completion of restoration work pursuant to project specifications entitled “Battle Creek Forest Restoration” dated April 2019 and Conservation Partners Legacy grant program approved plan
- Add on project work as time and funding allows

Schedule and costs

Year 1-3: complete restoration.

Cost = \$150,000 of funding was secured for contractor services (Jan 2019)

Objective 4

Draft a three-year maintenance plan that will include ongoing maintenance tasks and projected costs. Implement plan and revise after three years.

Tasks:

- Continue maintenance by achieving a measureable reduction in exotics in restored areas of 80% or more, including buckthorn, honeysuckle, locust, Siberian elm and emerging exotics. Tools will include foliar spraying and prescribed burns.
- Increase diversity among the native shrub and herbaceous ground layer plants in this area following the removal of exotics using the Minnesota DNR native plant community fact sheet for Southern Dry-Mesic Oak Forest. s a guide for plant composition.
- Secure funding for three year plan through state grant program or county funds

Schedule and costs

Year 3-6: implement maintenance plan.

Cost = \$25,550 for contractor services

Objective 5

Control deer population to levels that protect native vegetation and allow woodland regeneration pursuant to the annual deer management plan.

Tasks:

- Complete annual population survey of area to determine reduction needs and methods
- Continue with annual special archery hunt to maintain population
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Schedule and costs

Annually: implement deer management plan

Cost = parks staff time

Objective 6

Increase education and outreach for adjacent landowners and general public

Tasks:

- Host an annual meeting with adjacent neighbors and general public to better connect people to the parkland and include the following topics:
 - Promote ecological awareness in an effort to expand restoration and the use of native plants on private lands
 - Talk with adjacent landowners to suggest control of non-native perennial plantings
 - Restoration and maintenance work update
- Send mailing update to neighbors on restoration work completed
- Coordinate with a minimum of two volunteers per year to complete observational surveys or invasive species removal within the unit

Schedule and costs

Annually: implement outreach

Cost = parks staff time

Objective 7

Ensure the long term preservation of this unit

Tasks:

- Limit recreation, development and encroachment by adjoining land uses, such as the water recreation features and picnic areas to the west.
- No increase in number or size of trails should be considered within this area and remove rogue trails, primarily those causing erosion issues.

Schedule and costs

Ongoing coordination

Cost = parks staff time

Management Unit 8

Unit Stats

Dominant land cover type: Oak Woods.

Dominant soil type: silt loam

Dominant Terrain: flat with rolling hills

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status:

- Regionally Significant Ecological Areas and Regional Ecological Corridors
- MN Native plant Community
 - Sites of biodiversity significance, moderate
 - MHs37a - Red Oak - White Oak Forest, Mesic Hardwood Forest System. Southern Dry-Mesic Oak Forest. 72 acres. Vulnerable to Extirpation

Community Structure and Quality: Medium

Management Priority: Medium

Unit Description

This is mainly a deciduous forest community, with large white and bur oaks dominant, and some large red oaks. Bur and white oaks with spreading canopies originally grew in a more open conditions. This is shown in historic aerial photos and pre-settlement data. Dry oak forest communities cover about half the area of Battle Creek Park, but mature forests of this type with large canopy trees are rare in the Metro Region. Subcanopy, shrub and ground communities consist of elderberry, ninebark, but with less diversity, and much invasion by buckthorn and honeysuckle, especially on south, southwest facing aspects. Sections of the unit have had buckthorn removal completed in the past decade with no follow up maintenance completed. The buckthorn through much of the area now consists of 2 -3 inch diameter at breast height and high density stands. There are numerous invasive tree species throughout the unit as well, consisting of Siberian elm and black locust. Plantations of white spruce and red pines have been planted in several areas within the forest, and are now mature in size. These plantations are overcrowded and should be thinned. Approximately 11 acres of these conifer plantations is slated for removal and conversion to oak woods. Several paved trails form loops through the woodland. A 35-acre fully fenced in off-leash dog area is located in the west portion of this unit.

Wildlife using of this area include migrating warblers, waterfowl, shorebirds, pileated and other woodpeckers, raptors, turtles, and a variety of frog species. Diversity of wetland community, large oaks and the adjacent old field

contribute to diversity of wildlife in this area.

Numerous small, emergent wetlands are enclosed within the forest in low areas. Vegetation communities among these vary greatly in size, diversity and quality. Some are dominated by sedges, others by cattails or reed canary grass, and some with forest canopy and understory fringing the wetland. Amphibian and bird use varies among the wetlands as indicated in species lists included in the Appendix.

Management Issues

Plant and animal survey information for this entire unit is lacking and needs to be updated.

This unit is inundated by exotic invasive species, particularly highly dense stands of buckthorn, and needs to be restored. This unit is spatially large and there is a high projected cost for initial restoration targeting the removal of buckthorn and honeysuckle. Securing funding for initial restoration of the unit could pose a problem, especially if removal of invasive tree species is included in restoration. Parceling the unit into subsections for restoration phases may be required.

There are areas of quality habitat and wetlands within the off-leash dog area. An inventory of the off-leash dog area is required to determine size and quality of remaining habitat types. Once these habitats are identified the need for restoration and ongoing protection of these areas can be determined. This may include restricting areas of quality habitat from off-leash dog use temporarily or indefinitely.

The wetlands in this unit are very important as they provide habitat and improve surface and groundwater quality. Survey data is lacking and inventories of each wetland should be completed and include, at a minimum, vegetation transect surveys and observation surveys of birds, amphibians and reptiles. The focus would be to determine management recommendations to protect or increase diversity. Other agencies, specifically the Minnesota Pollution Control Agency wetland monitoring program and the Ramsey Washington Metro Watershed District, may be available to help partner to complete surveys and restoration of the wetlands.

The trails in this unit are well established and include a paved loop and numerous grass trails that are mowed. The maintenance of these trails, mainly including the width and timing of flailing and mowing of trail edges needs to be defined to minimize impact on the resources.

Several pine and spruce plantations were planted within this unit. According to the historic aerial photos the first of the plantations were establish in the late 1960's to early 1970's, with the other plantations planted following this time frame. All of these plantations understory are bare or consist of buckthorn. Management or conversion of the plantations is necessary.

Given heavy trail use, there are many opportunities in this area for interpretive signage, related to forest community, exotic species, wetland diversity, and prairie restoration.

Deer browse will continue to be an issue within this unit. Control of the deer population is necessary to prevent over browsing of natural regeneration of shrubs and trees.

Adjacent school may offer opportunities to expand prairie restoration or include students in management and interpretive activities in the Park.

Management objective, tasks, schedule and cost

Objective 1

Complete plant and animal surveys within the upland portions of the entire unit prior to and following restoration planning and implementation. Natural resource manager will determine which level of plant survey will be completed, which will be heavily dictated by time and funding.

The Plan

Tasks:

- Identify areas with highest vegetation quality and areas where exotic species are a problem. At a minimum, create the following:
 - Distribution map of exotic invasive species
 - Delineation of vegetation of highest quality
 - General land cover data update
- Complete baseline plant plot survey or ecological assessment of the entire unit if funding and time allows.
- Complete observational animal surveys, including insect, bird and amphibian/reptile following plant surveys.
- Monitor plant community after exotics removal to determine success in oak and understory regeneration.
- Monitor breeding and migrating bird populations after buckthorn removal activities to determine effects on populations.

Schedule and costs

Year 1: July – August, complete minimum surveys to capture the majority of invasive and native plant species.
Cost = parks staff time

Year 1: Spring – summer of first season complete baseline plot survey or ecological assessment of unit.
Cost = contractor cost \$15,000.00

Objective 2

Restore and convert upland land cover types to native plant communities using the Minnesota DNR native plant community fact sheet for Southern Dry-Mesic Oak Forest to determine restoration requirements and metrics for the oak woodlands.

Tasks:

- Draft a plan detailing the specifications for each land cover type restoration and conversion. Restoration will likely be partitioned into phases in order to provide adequate funding and time to restore entire unit. If phased each project will follow the same schedule below.
 - Focus will be on restoration of the oak woodlands and conversion of around 11 acres of conifer plantation to oak woods.
 - Plan should include steps for public education and awareness of conifer to oak woods conversion areas and to thin remaining conifer stands by about half to improve stand health. As these plantations die, replace them with native species. (This may be fifty years in the future.)
- Acquire funding through state grant programs and/ or county parks to fully fund restoration project.
- Complete restoration of land cover types.
 - Draft project specifications detailing restoration requirements
 - Hire contractor to complete restoration of each land cover type within project specifications.
 - Oversee contractors completion of restoration project

Schedule and costs

Year 1 August – September, draft plan and apply for funding

Cost = parks staff time

Year 1, Year 2 December – Jan, draft project specifications and hire contractor

Cost = parks staff time

Year 2 – Year 5 Complete restoration of unit

Cost = \$399,880.00

Objective 3

Following initial restoration: complete ongoing maintenance of unit to control re-emerging exotic invasive vegetation specifically buckthorn, at an eradication level of 80% or more and increase diversity of native vegetation pursuant to native plant community fact sheet.

Tasks:

- Draft a 10 year maintenance plan detailing the specifications for each land cover type maintenance needs and hire contractor to complete ongoing maintenance on a three year contract. At a minimum include tasks listed below.
- Foliar spray emerging buckthorn every fall following initial restoration for three years. Assess continued volume and timeline of foliar spraying following three year mark.
- Assess the need for an oak woodland burn after initial restoration. If woodland burn will be beneficial in setting back exotics and promoting native growth, complete burn in fuel rich areas every 3 to 5 years following initial restoration.
- If there is limited native regeneration of herbs, shrubs and trees, observed after one season growth following restoration complete the following:
 - Increase diversity in the native herbaceous ground layer plants by casting an appropriate woodland seed mix in the spring or following a prescribed burn.
 - Obtain shrub saplings from MN DNR forestry or other reliable source and plant throughout the unit at a rate that will meet the percent cover listed in native plant community fact sheet.
 - Achieve observable regeneration of oaks by planting saplings throughout the project site as specified in the objective. Stagger the years of planting oak saplings to prevent oak wilt transfer by differing age classes.

Schedule and costs

Year 5 July- August: Draft maintenance plan and hire contractor

Cost = park staff time

Year 6 - 9 October: maintenance to be completed, foliar spray and/or woodland burn

Cost = \$66,136.50

Year 7 – 9 spring or fall, planting of native seed, shrubs and oak trees

Cost = \$61,083.00

Objective 4

Gather wetland information to prioritize wetland survey and restoration needs.

Tasks:

- Gather existing State wetland data
- Complete plant surveys on wetlands that lack existing data
- Prioritize wetlands to determine if restoration is cost effective
- Work with local watershed district and state agencies to secure funding and coordinate restoration of wetlands

Objective 5

Control deer population

Tasks:

- Complete annual survey of area
- Continue with annual special archery hunt
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Objective 6

Work with internal staff and dog park patrons to improve wildlife habitat within the off-leash dog park area

Tasks:

- Survey and prioritize habitats within the OLDA that warrant protection and restoration. An example would be to restore existing native wildflower areas to benefit insects
- Work to obtain funding for restoration and preservation of these areas
- Fence off areas to ensure preservation

Objective 7

Maintain trails to have the least impact on the natural habitat.

Tasks:

- Inventory unpaved trails and close and revegetate unneeded rogue trails.
- Draft a flail and mow plan that highlights cutting widths and time of year to complete activities
- Drive trails annually to determine trees to trim or remove to protect trails and park users

Objective 8

Continue current types of recreation uses to avoid impact of natural resources.

Tasks:

- Do not expand recreational amenities beyond what currently exists in this unit without a thorough review of environmental impacts.
- Off-road cycling trails should follow the implementation guidelines when proposed

Management Unit 9

Unit Stats

Dominant land cover type: Prairie and emergent wetlands

Dominant soil type: silt loam

Dominant Terrain: rolling hills

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status: N/A

Community Structure and Quality: Medium

Management Priority: Medium

Unit Description

This unit consists of 62.79 acres, of which 20.30 acres of old field was converted to native prairie starting in 1996 – early 2000's. These are now well-established mesic prairies dominated by big blue stem grasses. A low central portion includes a linked group of emergent wetlands with sparse fringe vegetation and dominated by cattails in most incidences. These freshwater emergent wetlands overflow east to west. There are 4 plots of conifer plantations on the edges of the unit. In reviewing historical aerial photos, the three southern/western plantations were planted in the mid 70's and the plantations in the northeast corner were planted in the late to mid-1990's. There is 25.49 acres of mixed woodlands within the unit. The north and western most section of mixed woodlands are dominated by larger old growth oaks and were historically more of an open canopy oak dominated system.

Deer and a variety of open meadow and edge bird species are evident in these area, including white-throated and song sparrows, cardinals, finches, and others. Deer are seen frequently in the area, with many "bedding areas" close to tree groves. Raptors, woodpeckers, and songbirds such as warblers, white-throated sparrows, chickadees, and finches are part of this community.

Particularly if other nearby areas of the Ramsey County Work Farm can be managed for the same species.

Management Issues

It has yet to be determined if the established prairies are providing quality grassland habitat for birds and insects.

The prairies are constantly being encroached by exotic invasive herbs and tree species, such as black locust, Siberian elm, spotted knapweed, and emerging tansy. The mixed woodlands are dominated by buckthorn and undesirable deciduous trees, such as boxelder, Siberian elm and black locust.

Unwanted trees and shrubs, mainly buckthorn, Siberian elm, boxelder, black locust, etc. are high in density within the mixed woodlands area, choking out existing quality trees and preventing oak regeneration. The conifer plantations are out of place in this entire unit and separate naturally transitioning native land cover types. The conifer plantations

The Plan

provide little wildlife habitat and take up space where native landscapes could exist to better provide habitat for local wildlife.

Can diversity of the wetland edges be increased with plantings or other management and would the cost of wetland restoration be worth the habitat benefits in this area?

Invasive exotic species dominate surrounding lands, including landowners to the east and on adjacent Ramsey county correction lands to the south.

Management objective, tasks, schedule and cost

Objective 1

Determine and complete survey methods necessary to help define the diversity level and habitat quality of the prairies to help guide resource decision making.

Tasks:

- Coordinate with local and state agencies, such as the MN DNR and Xerces Society, to help determine sound survey methods for plant and insect data collection
- Parks staff complete surveys if applicable or hire contractor to complete survey and draft restoration guide.

Schedule and costs

Year 1: Jan – Feb. determine survey method

Cost = parks staff time

Year 1: July – September, complete surveys of prairies

Cost = contractor cost \$15,000.00

Objective 2

Maintain and preserve existing prairies by eliminating 90% or more of invasives found within 3 years and maintain this level annually

Tasks :

- Inventory and map invasives encroaching in and on edges of prairies.
- Use conservation corp crew or contractor to remove invasives from prairies
- Complete prescribed burns every 3 to 5 years
- Complete annual survey of prairie areas at the peak of growing season to determine encroachment of invasives

Schedule and costs

Year 2, mid to late July: inventory invasives

Cost = parks staff time

Year 3-6: seasonal, maintenance to remove invasives

Cost = contractor cost \$5,000.00

Every 3 to 5 years, spring. Complete prescribed burn of prairies

Cost = contractor cost \$5,150.11

Objective 3

Restore and convert uplands within this unit into a quality mix of converging native prairies and open oak woodlands with a canopy up to 50%.

Tasks:

- Draft a plan detailing the specifications for each land cover type conversion.
 - Plan should detail items necessary for the conversion of the 6.06 acres of conifer plantations to oak woods (1.44 acres) and native prairie (4.61 acres). The southernmost plantation of red oaks could remain if proven to provide some wildlife habitat, and conversion of 25.49 acres of mixed woods to native prairie and oak woods
 - Plan should include steps for public education and awareness of conifer to oak woods and prairie conversion and to thin remaining conifer stands by about half to improve stand health.
- Acquire funding through state grant programs and/ or county parks to fully fund conversion project.
- Complete conversion of land cover types.
 - Draft project specifications detailing conversion requirements
 - Hire contractor to complete conversion of each land cover type within project specifications.
 - Oversee contractors completion of restoration project

Schedule and costs

Year 3 August – September, draft plan and apply for funding to MN DNR CPL grant program and/or county funds
Cost = parks staff time

Year 3, Year 4 December – Jan, draft project specifications and hire contractor
Cost = parks staff time

Year 4 – Year 7 Complete conversion of unit
Cost = \$114,345.27

Objective 4

Complete assessment of wetlands to determine wetland survey and restoration needs.

Tasks:

- Gather existing State wetland data
- Complete plant surveys on wetlands that lack existing data
- Prioritize wetlands to determine if restoration is cost effective
- Work with local watershed district and state agencies to plan restoration of wetlands if found to be beneficial

Schedule and costs

Year 5, April – September: Gather existing wetland data and coordinate vegetation surveys on priority wetlands.
Cost = parks staff time

Year 5-6, September – March: Draft wetland restoration plan for sites to be beneficial and cost effective

The Plan

Cost = parks staff time

Objective 5

Coordinate with adjacent landowner and Ramsey county corrections department to promote habitat improvement on lands

Tasks:

- Coordinate with Ramsey county corrections department to determine if restoration on park land can be continued onto corrections adjacent property
- Host an annual meeting with adjacent neighbors and general public to better connect people to the parkland and include the following topics:
 - Promote ecological awareness in an effort to expand restoration and the use of native plants on private lands
 - Talk with adjacent landowners to suggest control of non-native perennial plantings
 - Restoration and maintenance work update
- Send mailing update to neighbors on restoration work completed
- Coordinate with a minimum of two volunteers per year to complete observational surveys or invasive species removal within the unit

Management Unit 10

Unit Stats

Dominant land cover type: floodplain forest

Dominant soil type: silt loam

Dominant Terrain: flat

Marschner Presettlement Vegetation: Wet Prairie

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)
- Regionally Significant Ecological Areas and Regional Ecological Corridors
- Scientific and natural area (SNA): Pigs Eye Island Heron Rookery SNA
- MN Native plant Community
 - Sites of biodiversity significance, moderate and outstanding
 - FFs68a - Silver Maple - (Virginia Creeper) Floodplain Forest. Southern Floodplain Forest. 107.7 acres. Vulnerable to Extirpation
 - MRn93 - Northern Bulrush-Spikerush Marsh. Southern Floodplain Forest. 13.3 acres. Vulnerable to Extirpation
 - WFn55b - Black Ash - Yellow Birch - Red Maple - Basswood Swamp (Eastcentral). 11.7 acres Northern Wet Ash Swamp. Vulnerable to Extirpation

Community Structure and Quality: Medium

Management Priority: High

Unit Description

This unit is the Pig's Eye section of Battle Creek regional park and consists of an open water lake (Pig's Eye lake) of around 628 acres, which is connected to Pool 2 of the Mississippi river. Since this lake is connected to the river, the water level can fluctuate, with an average maximum depth of around 4 feet. Historically, this water body was a shallower wetland with vegetation throughout. After the lock and dam system along the Mississippi River was installed in the 1930's the water level rose along with the river, making Pigs' Eye lake an open water shallow lake. The lake is recognized as a public water by the Minnesota Department of Natural Resources, but since the water body

is connected to the Mississippi river, the US Army Corp of engineers has regulatory jurisdiction over the water body. Another surface water contributor to Pig's eye lake is Battle Creek, which discharges through a series of wetlands on the north side of the lake. The lake has the longest section of natural shoreline in the park system. The lake edge, where vegetation grows, is prime habitat for waterfowl, shoreline birds, raptors, amphibians, and reptiles. The substrate of the lake is a soft bottom throughout. Within the open lake area there is very little structure or submerged aquatic vegetation, due to the water clarity, which is less than one meter and high turbidity. The open lake produces wind-induced shoreline erosion and provides little to no habitat for waterfowl, native fish or other aquatic species in its current condition. In 2014, the US Army Corps of Engineers (USACE) began working with the Ramsey County parks department to discuss the construction of islands within the lake to address some of the environmental concerns. Since this time, the USACE completed a feasibility study for constructing island habitat enhancements and a portion of the funding was secured through a habitat grant approved by the Lessard Sam's outdoor heritage council through the Clean Water Land and Legacy amendments Outdoor Heritage Fund. A construction and design plan were completed by the USACE and the island construction will begin in 2021 with additional funding provided by Ramsey County. The project will enhance and restore backwater habitat by creating island and wetland features. Project features include six islands, sand benches, marsh habitat and land plantings. These enhancements will improve aquatic and land habitat as well as maintaining the shoreline of Pig's Eye lake. This project will utilize clean dredged material from the Mississippi to construct the islands., similar to the numerous islands the USACE has constructed in river pools to the south of the metro.

The majority of Pig's Eye area land cover consists of mixed woods located on a peninsula of land that separates the lake from the main channel of the Mississippi River. This peninsula of land is historically a floodplain forest, but is presently defined as a mixed woods with moderate biodiversity significance, within the Ramsey County Parks & Recreation department system plan, due to a number of invasive and tree species that have encroached into the area, such as buckthorn and boxelder, however, the woods consists of typical floodplain trees such as cottonwood, silver maple, green ash, willows, American elm, and some swamp white oak. The constant flooding of the area creates an open understory with few shrubs or saplings. Ground cover can consist of forest pools, mucky depressions, bare silt or sand, and dense patches of wood nettle (*Laportea canadensis*) or impatiens (*Impatiens capensis* or *I. pallida*), which can all constantly shift due to movement of water. The wetlands within the park consist of native vegetation, such as prairie cord grass, and various rushes and sedges. Invasive cattails and reed canary grass also dominate a lot of the wetland edges. The east side of the lake has some cattail wetlands and patches of lotus. The island in the south portion of the park is of great significance, outstanding biodiversity and is a state protected scientific natural area: Pigs Eye Island Heron Rookery SNA. This island, around 137 acres, is a floodplain forest of green ash, silver maple, cottonwood and black willow which provides excellent nesting habitat for colonial waterbirds. The Pig's Eye Island rookery is the largest and longest-occupied site for colonial nesting birds in the metro area, and among the largest in the state.

Floodplain forest systems as large as the Pig's Eye unit are rare within the metro and additional preservation and protection, especially for the designated SNA, should be ongoing. The Pig's Eye section is also within the Mississippi River Corridor Critical Area (MRCCA), which shares the boundary with the Mississippi National River and Recreation Area. This section of park is subject to MRCCA regulations (State statute under Minnesota Rule 6106) which is in place to protect the unique natural and cultural resources and values within this corridor. The Pig's Eye section is included in the "National Great River Park" and is also defined as an Environmental Natural Area, within the Ramsey County Parks & Recreation department system plan, which warrants additional protection and preservation.

Surrounding land use has had historic and current environmental impacts in this area. The open space, owned by the City of St. Paul, abutting the Pig's eye section to the north, was historically the largest unpermitted dump site in the state and was listed as a federal superfund site. Past remediation efforts continued cleanup and monitoring is being completed by the MN Pollution Control Agency. The Met Council wastewater treatment facility is located to the northeast of the site and land use practices, such as abandoned pond holdings, previously used for containing ash sludge, are on the edge of the parkland. To the east is commercial and industrial land use consisting of railroad yards and shipping docks. Barges are docked and line the channel to Pigs eye lake throughout the shipping season. Recreation within the unit is minimal because of limited to no access from land due to surrounding land use. Kayakers and other small boats use the lake.

The wildlife diversity of the park is very high and includes a variety of nesting songbirds, waterfowl, raptors, and

The Plan

wild turkeys. Larger mammals include white-tailed deer, coyotes, red fox, raccoons, and river otters. The Pig's Eye section of the park is especially unique and contains the heron rookery, nesting area for bald eagles, and habitat for countless amphibian, reptiles, migratory waterfowl, and shorebirds. Fish species within the lake consist of common native river fish, such as, black bullheads, crappie, bluegill, catfish, sunfish, freshwater drum. Invasive fauna species within the lake include zebra mussels and carp.

Management issues

Continued coordination with the USACE is required to ensure the island building project will be successful. A native planting plan and implementation is required, beyond the current willow and grass base design, to ensure quality wildlife habitat following island build.

The extent of survey work being completed by State and local agencies is unknown. Internal park surveys of the Pig's Eye area are severely lacking and will need to be completed to gather more information about the current state of the area prior to any restoration work.

There is pressure for increased access and recreation within the unit.

Coordination and communication with surrounding land use owners is lacking and knowledge of development or restoration on adjacent lands is unknown.

The deer population can exceed the carry capacity of the land in this area.

Management objective, tasks, schedule and cost

Objective 1

Communicate with USACE monthly to review status and receive updates of island building progress until islands are established.

Tasks:

- Review current design, budge and plan and discuss any changes
- List stakeholders to involve in developing native planting plan
- Engagement with stakeholders to develop and implement plan following island build.

Schedule and costs

2020 - 2024, Monthly: meet with USACE

Cost = parks staff time

Objective 2

Review existing survey data and determine and complete survey methods necessary to define the diversity level and habitat quality to guide resource decision making.

Tasks:

- Connect with agencies, such as the MN PCA, MN DNR, and National Park Service, to find most current survey information completed in the area.
- Coordinate with local and state agencies, such as the MN DNR, to help determine sound survey methods for plant and animal data collection

- Surveys and will focus on determining restoration needs for shoreline erosion, invasive plant species removal, and reforestation of floodplain tree species, such as cottonwood.
- Parks staff complete surveys if applicable or hire contractor to complete survey and draft restoration guide.

Schedule and costs

Year 1: Jan – March. Complete review of existing survey data and determine required surveys and methods to meet objective

Cost = parks staff time

Year 1: April – October, complete surveys of Pig's eye area and draft guide

Cost = contractor cost \$20,000.00

Objective 3

Ensure that this unit exists foremost as natural land for wildlife habitat and that all proposed recreation and development will have minimal impact on resources and avoid sensitive areas

Tasks:

- Coordinate with all stakeholders, primarily environmental groups and government agencies, to review any proposed development plans.
- While reviewing plans, the following should be considered at a minimum, but not limited to:
 - No development or recreation will be considered on or around the south portion of the island and peninsula. This area will remain protected for the protection of the scientific natural area heron rookery and follow all state rules.
 - Natural phenomena, such as hydric soils, areas prone to flooding, water features, and wetlands, make up most of the park and will dictate which recreational amenities should be planned for the area. These entities will not be altered for development.
 - List and follow all federal and state regulations, including, but not limited to wetlands will remain protected under the State and Federal wetland conservation act, County recognized Environmental Protection zone, MRCCA rules, National park rules, etc.

Schedule and costs

Ongoing: as development is proposed.

Cost = parks staff time

Objective 4

Build stronger relationships with surrounding land use representatives to promote the environmental preservation and improvement of the area.

Tasks:

- Connect with surrounding landowners (St. Paul Parks, Railroad personnel, Met Council staff) annually to share work being completed by the parks department and learn about tasks being completed on surrounding lands.
- Share natural resource survey data and promote the importance of preserving unique features in and around the park

Schedule and costs

Annually: ongoing

Cost = parks staff time

Objective 5

Control deer population

Tasks:

- Complete annual survey of area
- Continue with annual special archery hunt
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Suburban Pond Management Unit 11

Unit Stats

Dominant land cover type: wetland

Dominant soil type: silty clay loam

Dominant Terrain: flat

Marschner Presettlement Vegetation: Oak openings and barrens

Government recognition and protection status: N/A

Community Structure and Quality: Low

Management Priority: Low

Unit Description

The Suburban pond unit consists of a large shallow open water wetland complex consisting of freshwater emergent and pond wetland types surrounded by upland consisting of mowed turf on the southwest corner and mixed woods on the east. Suburban pond was historically a shallow water wetland that started to be used as a stormwater collection pond when the area was developed in the 1960's. The watershed draining to the pond consists of dense impervious urban land use. The wetland complex is inundated with invasive vegetation, consisting of cattails on the fringe and highly dense stands of purple loosestrife. The upland areas were historically wider open with larger trees likely consisting of oaks. The mixed woods presently consist of boxelder, some oak trees with an understory dominated by buckthorn and other invasives.

Management issues

Complete survey information of vegetation types is lacking throughout the unit to give a clear assessment of restoration needs.

The invasive species are prominent throughout the entire unit. Buckthorn dominates the understory throughout the mixed woods area and aquatic invasive, such as narrowleaf cattail and purple loosestrife dominate the wetland area, providing little room for native species.

Encroachments, litter and dumping are a constant problem within this unit. A lot of trash accumulates on the north side of the unit, which is adjacent to numerous commercial and fast food restaurants. Dumping is often found on the east side adjacent to the large apartment complex.

The mowed turf area provides no to little natural resource habitat and only benefit neighbors for recreational opportunities.

Objective 1

Complete vegetation surveys and map invasive species or other problems to create general restoration plan.

Tasks:

- Identify areas with highest vegetation quality and areas where exotic species are a problem. At a minimum, create the following:
 - Distribution map of exotic invasive species
 - Delineation of vegetation of highest quality
 - General land cover data update
- Draft restoration plan for unit that will detail invasive species removal and costs

Schedule and costs

Year 1: July – August, complete minimum surveys to capture the majority of invasive and native plant species.
Cost = parks staff time

Year 1: September – December, draft general restoration plan for unit
Cost = parks staff time

Objective 2

Work with parks staff to develop encroachment, littering and dumping prevention plan specifically for this unit.

Tasks:

- Catalog consistent littering, areas of dumping, and encroachments.
- Staff meeting to discuss option for prevention
- Draft prevention plan or implement objectives

Schedule and costs

Year 1: April, complete catalog
Cost = parks staff time

Year 1: May -August, meet with staff and draft prevention plan
Cost = parks staff time

Objective 3

Determine appropriate use of areas that are being mowed for turf and other recreational areas within unit and manage these areas appropriately moving forward.

Tasks:

- Determine maintenance requirements and cost for area
- Complete neighborhood and public outreach to determine wants and needs of current area.
- Draft plan on land cover type for current area, considering factors of recreation, habitat and maintenance of area.

The Plan

Schedule and costs

Year 1: Jan -Feb, determine maintenance of current area

Cost = parks staff time

Year 1: March -May, collect public input

Cost = parks staff time

Year 1: June -July, draft plan

Cost = parks staff time

Mississippi River Bluffs Management Unit 12

Unit Stats

Dominant land cover type: mixed woods

Dominant soil type: loamy sand

Dominant Terrain: steep

Marschner Presettlement Vegetation: Wet Prairie

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)

Community Structure and Quality: Medium

Management Priority: High

Unit Description

The Mississippi River Bluffs unit consists of 18 parcels, totaling 19.55 acres, scattered along the bluff line east of highway 61, stretching from Battle Creek park to just north of Fish Creek open space, within the city of St. Paul. This greater bluff line, including these parcels, is an extension of the bluff lands starting near downtown St. Paul and following the river corridor through Ramsey county, southward and beyond. These bluff lands are an extension of those found in Battle Creek park and Fish Creek open space, which historically were more wide open canopy oak savanna, existing as Southern Dry Savanna. These were fire dependent plant communities thriving along the bluff sides. Development surrounding the bluff lines, the lack of fire and minimal restoration efforts has transformed these parcels into woodlands consisting of a mix of less desirable species, such as boxelder, invasive such as Siberian elm, black locust and a shrub layer dominated by buckthorn, surrounding large old growth oak trees growing throughout. These woodland areas provide habitat for numerous migratory birds along the Mississippi flyway and larger mammals, such as white-tailed deer, fox and coyote that inhabit these parcels and similar habitat that exists on adjacent private and city park parcels.

Management Issues

Plant and animal survey information for this entire unit is lacking.

Determine restoration required to convert lands to oak savanna.

Overpopulation of deer can set back the natural succession of native shrubs and trees by over browsing. This area has a consistent overpopulation problem.

Encroachments and dumping from abutting neighbors are major issues that are causing negative impacts to parkland. Education and outreach with neighbors and adjacent landowners can be increased to promote the preservation and protection of this area.

Coordination with landowners and other agencies is necessary to maintain the health of the overall bluff lands

throughout the corridor

Objective 1

Complete observational surveys in each parcel to determine level of native and invasive plant species

Tasks:

- Complete baseline observational surveys of native and exotic species
- Create a distribution map of native and exotic invasive species

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Objective 2

Complete assessment to determine benefit and cost of converting woodlands to a more open canopy savanna where appropriate

Tasks:

- Survey bluff land oak woods to identify locations ecologically and economically beneficial for conversion to savanna.
- Determine, with county forester, trees for removal within identified savanna locations
- Draft a plan detailing the specifications for savanna conversion using the MN DNR native plant community guidelines: Southern Dry Savanna

Objective 3

Control deer population to levels that protect native vegetation and allow woodland regeneration pursuant to the annual deer management plan.

Tasks:

- Complete annual population survey of area to determine reduction needs and methods
- Continue with annual special archery hunt to maintain population
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Schedule and costs

Annually: implement deer management plan

Cost = parks staff time

Objective 4

Work with parks staff to develop encroachment, littering and dumping prevention plan specifically for this unit, control encroachments and improve public education.

Tasks:

- Catalog consistent littering, areas of dumping, and encroachments.
- Reach out to neighbors encroaching on lands and have them stop and remove all infractions.
- Staff meeting to discuss option for continued education and prevention of encroachments and draft plan to implement objectives
- Communicate importance of sensitive areas being impacted through social media outlets

Schedule and costs

Year 1: April, complete inventory of encroachments, send letters to neighbors in regard to infractions
Cost = parks staff time

Year 1: May -August, meet with staff and draft prevention and education plan
Cost = parks staff time

Objective 5

Continue coordination efforts with other involved agencies for the enhancement and preservation of the river corridor

Tasks:

- Continue to be involved with MRCCA program.
- Continue restoration planning with guidance from the MN DNR

Annually, ongoing:
Cost = parks staff time

Fish Creek Management Unit 13

Unit Stats

Dominant land cover type: oak woods

Dominant soil type: loamy sand

Dominant Terrain: steep

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)
- Regionally Significant Ecological Areas and Regional Ecological Corridors
- MN Native plant Community
 - Sites of biodiversity significance, moderate

- FDs37a - Oak - (Red Maple) Woodland
Community Structure and Quality: High
Management Priority: High

Unit Description

This unit of the park is dominated by oak woodlands along steep bluff sides, which are an extension of those that exist along Battle Creek and within the Mississippi River bluffs open spaces. Mature oak trees dominate the unit with more red oak growing in the flatter area south on site and white oak and bur oak along the steeper hillsides. There is a mix of other tree species throughout, consisting of maple, cherry, boxelder and ironwood on north facing slopes. Oak wilt persists throughout the site, especially affecting the red oak stands in the southern portion of this unit. North of the creek, oak trees dominate on the slopes and quaking aspen and large tooth aspen stands exist on the plateaus overlooking the creek. The understory is dominated by invasive buckthorn with very sparse native shrub and herbaceous growth on the south and west side of this unit. Garlic mustard is dense throughout the site and Japanese hedge parsley is scattered throughout, mostly existing along the creek corridor. Throughout the creek corridor and north of the creek, consists of the most diverse and abundant native herbaceous layer consists of all types of native ferns and numerous flowers such as ginger and bloodroot, predominately on north facing slopes. Native grasses and wildflowers exist along the creek corridor as well. In the years 2015 – 2018 a restoration project was completed throughout the woodlands in unit 1. This project included removal of 90% of the buckthorn on site. Since this time the buckthorn regeneration has been aggressive and very dense. Foliar treatment of the site was completed unsuccessfully in 2018 and 2019. A treatment will occur again in the fall of 2020 in an effort to control the buckthorn regeneration. Two attempts to complete prescribed burns though the woodlands has occurred since the initial removal of buckthorn. A very small percentage of the woodlands was burned, mainly because of lack of fuel and weather conditions. Historically, this unit consisted of a fire dependent more open canopy system, especially along the western facing slopes, dominated by oaks. Mature forests of this type with large canopy trees are rare in the metro region and warrant further restoration and preservation. There are numerous unofficial foot trails that exist throughout this unit and a portion of the official paved trail that dips into this unit from the city owned property. Some of the unofficial trails are well established and could be converted to established turf trails, these consist of: a loop through the south woodlands, a trail that extends along the south side of the creek and transcends south east to the paved trail, this lies atop a service road that was created for the watershed district to be able to access creek infrastructure. There are several trails on the north side of the creek and within the corridor that have erosion issues. The wildlife diversity of the park is very high and includes a variety of nesting songbirds, waterfowl, raptors, and wild turkeys. Larger mammals include white-tailed deer, coyotes, red fox, raccoons, and river otters.

Management issues

Continued management of woodlands following initial restoration will be extensive and costly until regeneration of native vegetation is dominant and prescribed burns can be utilized for increased management.

Oak wilt occurs in much of the woodlands, but the extent is unknown. A forest management plan for restoration and oak wilt remediation does not exist.

Overpopulation of deer can set back the natural succession of native shrubs and trees by over browsing.

Recreation of area should not expand beyond what currently exists.

Management objective, tasks, schedule and cost

Objective 1

Draft a three-year maintenance plan for continued restoration efforts of oak woodlands that will include tasks and projected costs for maintenance and establishment of oaks and native understory. Implement plan and revise after three years, using the MN DNR Southern Dry-Mesic Oak (Maple) Woodland vegetation structure and composition as a guide for establishing native vegetation.

The Plan

Tasks:

- Draft a three-year maintenance plan detailing the specifications for maintenance needs
- Secure funding for three-year plan through state grant program or county funds and hire contractor to complete ongoing maintenance on a three-year contract. At a minimum include all listed below.
- Continue maintenance by achieving a measurable reduction in buckthorn of 80% or more in restored areas. Tools will include foliar spraying and prescribed burns.
- Increase diversity among the native shrub and herbaceous ground layer in the woodlands to allow for successful prescribed burns throughout 70% of the woodlands. Follow MN DNR plant community guide for percent and types of vegetation to establish
- Foliar spray emerging buckthorn every fall following initial restoration for three years. Assess continued volume and timeline of foliar spraying following three-year mark.
- Assess the need for an oak woodland burn after initial restoration. If woodland burn will be beneficial in setting back exotics and promoting native growth, complete burn in fuel rich areas every 3 to 5 years following initial restoration.
- If there is limited native regeneration of herbs, shrubs and trees, observed after one season growth following restoration complete the following:
 - Increase diversity in the native herbaceous ground layer plants by casting an appropriate native seed mix in the spring or following a prescribed burn.
 - Obtain shrub saplings from MN DNR forestry or other reliable source and plant throughout the unit at a rate that will meet the percent cover listed in native plant community fact sheet.
 - Achieve observable regeneration of oaks by planting saplings throughout the project site as specified in the objective. Stagger the years of planting oak saplings to prevent oak wilt transfer by differing age classes.

Schedule and costs

Year 1 July- August: Draft maintenance plan and hire contractor

Cost = park staff time

Year 2 - 3 October: maintenance to be completed

Cost =

Year 4 – 6 spring or fall, planting of native seed, shrubs and oak trees

Cost = TBD

Objective 2

Work with forester to map current oak wilt and develop an oak wilt management plan for this unit

Tasks:

- Survey the woodlands and GPS polygon boundaries around active oak wilt sites
- Survey for natural regeneration and determine if oak tree planting is required
- Draft plan including: sites, access, management methods and costs

Schedule and costs

Year 4: July – Sept, map oak wilt, survey for natural regeneration

Cost = parks staff time

Year 4: October – December, draft oak wilt management plan

Cost = parks staff time

Objective 3

Control deer population to levels that protect native vegetation and allow woodland regeneration pursuant to the annual deer management plan.

Tasks:

- Complete annual population survey of area to determine reduction needs and methods
- Continue with annual special archery hunt to maintain population
- Coordinate and contract sharp shooting removal service if population exceeds State standards

Schedule and costs

Annually: implement deer management plan

Cost = parks staff time

Objective 4

Ensure the long-term preservation of this unit, especially sensitive native plant communities.

Tasks:

- No development within the designated native plant communities beyond approved unpaved trails
- Identify and remove rogue trails causing erosion or negative impact
- Additional recreation uses, park features, trails should be assessed to determine environmental impact prior to implementation.
- A public engagement process of park amenities should involve environmental groups

Schedule and costs

Year 1 October - November: identify rogue trails

Year 2. April – May: reestablish rogue trails, revegetate and regrade

Cost = parks staff time, conservation corp for trail establishment. \$3000.00 for vegetation materials.

Fish Creek Management Unit 14

Unit Stats

Dominant land cover type: Maple / basswood mesic woods

Dominant soil type: loamy sand

Dominant Terrain: steep

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National

The Plan

Park Service, Mississippi National River and Recreation Area (MNRRA)

- Regionally Significant Ecological Areas and Regional Ecological Corridors
- MN Native plant Community
 - Sites of biodiversity significance, moderate
 - FDs37a - Oak - (Red Maple) Woodland

Community Structure and Quality: High

Management Priority: High

Unit Description

This unit consists of steep hillsides encompassing fish creek. The land cover on the south side of the creek is north facing slopes of mesic woods consisting of maple, basswood, ironwood and some oaks. Ferns dominate the understory. Given the aspect there is minimal invasive buckthorn growing in this area. On the north side of the creek is a south facing slope that is mostly shaded because of the steepness of the adjacent slopes. The tree cover consists of maple, basswood and oaks, with more mixed woods, including ash and aspen near the top and plateau areas. The understory is thicker consisting of more shrubs and ground cover than the south side of the creek. The present and historic canopy cover is similar at around 80-100%. Buckthorn is more dominant on the south facing slope, especially near the top of the slope and in areas where it plateaus. Given the steepness and aspect of this section there has been minimal need and accessibility issues to remove invasives along the steep hillsides. Buckthorn removal in areas that are accessible was completed under the same project completed in unit 1 around 2015. Areas like this consisting of steep terrain, dominated mostly by native vegetation, are very unique in the metro and warrant further preservation.

Management issues

A complete inventory of area is lacking

The area is steep, creating difficulty to access invasive species for removal

Recreation within this area should be prohibited to protect the steep hillsides

Management objective, tasks, schedule and cost

Objective 1

Complete observational surveys in throughout unit to determine level of native and invasive plant species

Tasks:

- Complete baseline observational surveys of native and exotic species
- Create a distribution map of native and exotic invasive species

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Objective 2

Draft a three-year maintenance plan in conjunction with management unit 1 maintenance plan, objective 1, to include tasks and projected costs for control of invasive species in accessible areas.

Tasks:

- Include unit 2 within unit 1 maintenance plan tasks listed under objective 1

Schedule and costs

Follow schedule and costs listed under unit 1, objective 1

Objective 3

Limit recreational use of this unit

Tasks:

- Review the need for steep hillsides along the creek within unit 1 and unit 2 to be defined as county environmental natural areas.

Schedule and costs

Year 1: May and July - August, while completing surveys of area, define boundaries for environmental natural areas designation.

Year 1: September, Develop maps of survey information

Cost = parks staff time

Fish Creek Management Unit 15

Unit Stats

Dominant land cover type: mixed woods

Dominant soil type: loamy sand

Dominant Terrain: rolling hills

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status: N/A

Community Structure and Quality: low

Management Priority: Medium

Unit Description

This unit consists of rolling hills surrounding fish creek. Due to the gradual grade, the creek moves slower throughout this unit as compared to unit 1 and unit 2. The land cover is 80%-100% tree cover of mixed woods, including aspen, boxelder and ash. Historically this unit was completely cleared, as seen in 1940 aerial photos, and was used for farming up to the creek edge. Invasive species dominate the understory and include mainly buckthorn and honey suckle, along with invasive tree species such as black locust and Siberian elm. White-tailed deer and other mammals, such as coyote and fox are prominent throughout the landscape. This area is also essential for woodland birds use. Recreation within the area is limited. There are very little to no walking trails and no parking access exists.

The Plan

Management issues

The extent of native and exotic plant communities is not well defined throughout the unit.

Management objective, tasks, schedule and cost

Objective 1

Complete observational surveys in throughout unit to determine level of native and invasive plant species so that management decisions can be defined.

Tasks:

- Complete baseline observational surveys of native and exotic species
- Create a distribution map of native and exotic invasive species

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Fish Creek Management Unit 16

Unit Stats

Dominant land cover type: mixed woods

Dominant soil type: loamy sand

Dominant Terrain: rolling hills

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status: N/A

Community Structure and Quality: Medium

Management Priority: High

Unit Description

In this unit Fish Creek runs through a wetland complex consisting of freshwater emergent and freshwater pond wetlands. The land to the north of the creek is flat and consist of brome and reed canary grass. This area is often too wet for trees to establish and was historically farmed up the wetland edge. There are some mixed woods on the north side of the open brome field area. South of the creek is rolling hills dominated by oak woods and a small section of lowland forest surrounding the creek in the southeast corner of the site. The oaks woods also contain cherry, ash, and ironwood, amongst other hardwoods. Historically, the woodland canopy was wider open with mature oaks and fewer other species that are growing today. This hillside is predominantly north facing aspect, which prevents invasive buckthorn from becoming dense within the understory. Buckthorn is more dominant on the few western facing aspects. Oak woodlands, like contained in this unit, are rare in the metro and warrant further preservation. Recreation within the area is limited. There are very little to no walking trails and no parking access exists. White-tailed deer and other mammals, such as coyote and fox are prominent throughout the landscape. This area is also essential for woodland birds use.

Management issues

The extent of native and exotic plant communities is not well defined throughout the unit.

Recreation of area should not expand beyond what currently exists.

In the past surrounding neighbors use all-terrain vehicles in this area

Management objective, tasks, schedule and cost

Objective 1

Complete observational surveys in throughout unit to determine level of native and invasive plant species so that management decisions can be defined.

Tasks:

- Complete baseline observational surveys of native and exotic species
- Create a distribution map of native and exotic invasive species

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Objective 2

Limit recreational use of this unit and ensure the long-term preservation of this unit, especially sensitive native plant communities

Tasks:

- No development within the designated oak woodland communities beyond approved unpaved trails
- Additional recreation uses, park features, trails should be assessed to determine environmental impact prior to implementation.
- A public engagement process of park amenities should involve environmental groups

Schedule and costs

As recreation is proposed

Objective 3

Work with parks staff to develop encroachment and park misuse prevention plan specifically for this unit, control encroachments and improve public education.

The Plan

Tasks:

- Catalog consistent littering, areas of dumping, and encroachments and misuse of parkland.
- Share park rules with surrounding neighbors
- Staff meeting to discuss option for continued education and prevention of encroachments and draft plan to implement objectives
- Communicate importance of sensitive areas being impacted through social media outlets

Schedule and costs

Year 1: April, complete inventory of encroachments and misuse and send letters to neighbors in regard to infractions
Cost = parks staff time

Year 1: May -August, meet with staff and draft prevention and education plan
Cost = parks staff time

Fish Creek Management Unit 17

Unit Stats

Dominant land cover type: oak woods

Dominant soil type: loamy sand

Dominant Terrain: rolling hills

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status: N/A

Community Structure and Quality: Medium

Management Priority: High

Unit Description

In this unit Fish Creek runs through a wetland complex consisting of freshwater emergent and freshwater pond wetlands. The land to the north of the creek is flat and consist of brome and reed canary grass. This area is often too wet for trees to establish and was historically farmed up the wetland edge. There are some mixed woods on the north side of the open brome field area. South of the creek is rolling hills dominated by oak woods and a small section of lowland forest surrounding the creek in the southeast corner of the site. The oaks woods also contain cherry, ash, and ironwood, amongst other hardwoods. Historically, the woodland canopy was wider open with mature oaks and fewer other species that are growing today. This hillside is predominantly north facing aspect, which prevents invasive buckthorn from becoming dense within the understory. Buckthorn is more dominant on the few western facing aspects. Oak woodlands, like contained in this unit, are rare in the metro and warrant further preservation. Recreation within the area is limited. There are very little to no walking trails and no parking access exists. White-tailed deer and other mammals, such as coyote and fox are prominent throughout the landscape. This area is also essential for woodland birds use.

Management issues

The extent of native and exotic plant communities is not well defined throughout the unit.

Recreation of area should not expand beyond what currently exists.

In the past surrounding neighbors use all-terrain vehicles in this area

Management objective, tasks, schedule and cost

Objective 1

Complete observational surveys in throughout unit to determine level of native and invasive plant species so that management decisions can be defined.

Tasks:

- Complete baseline observational surveys of native and exotic species
- Create a distribution map of native and exotic invasive species

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

Objective 2

Limit recreational use of this unit and ensure the long-term preservation of this unit, especially sensitive native plant communities

Tasks:

- No development within the designated oak woodland communities beyond approved unpaved trails
- Additional recreation uses, park features, trails should be assessed to determine environmental impact prior to implementation.
- A public engagement process of park amenities should involve environmental groups

Schedule and costs

As recreation is proposed

Objective 3

Work with parks staff to develop encroachment and park misuse prevention plan specifically for this unit, control encroachments and improve public education.

Tasks:

- Catalog consistent littering, areas of dumping, and encroachments and misuse of parkland.
- Share park rules with surrounding neighbors
- Staff meeting to discuss option for continued education and prevention of encroachments and draft plan to

The Plan

implement objectives

- Communicate importance of sensitive areas being impacted through social media outlets

Schedule and costs

Year 1: April, complete inventory of encroachments and misuse and send letters to neighbors in regard to infractions
Cost = parks staff time

Year 1: May -August, meet with staff and draft prevention and education plan
Cost = parks staff time

Fish Creek Management Unit 18

Unit Stats

Dominant land cover type: Prairie

Dominant soil type: sandy loam

Dominant Terrain: rolling hills

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)

Community Structure and Quality: Medium

Management Priority: Medium

Unit Description

The land in this unit was historically homesteads and farm fields until the early 2000's. In 2013, this Fish Creek natural area was purchased by the City of Maplewood, through assistance from numerous partners. Recently after the purchase the city converted the open fields to native prairie of mostly mesic and dry short grass prairie mix. There were some remnant prairie grasses on site along hillsides that were too steep for farming. These consisted of porcupine grass and mostly little bluestem. There are also mixed woods of boxelder, cottonwood, aspen, ash and some oak that run through the middle of the site. The management of the land is currently overseen by the city, however, the city partners closely with the Ramsey County Parks & Recreation department to manage the prairie and surrounding woodlands together. Currently there are multiple oak tree research plots throughout the prairie area that are being overseen by various university researchers. This area sees the most recreation throughout the Fish Creek open space, as there is a paved trail loop and small parking area within the unit.

Management issues

Partnership between city and county should continue and be strengthened

Prairie is continued to be encroached by herbaceous and woody invasive vegetation

Passive recreation use should continue throughout unit

Management objective, tasks, schedule and cost

Objective 1

City and county staff meet annually, prior to growing season, to discuss site plans for the year.

Tasks:

- Discuss annual restoration and maintenance items and how these could be combined over the landscape to save money
- Share volunteer opportunities on site
- Discuss education and outreach opportunities

Schedule and costs

Annually: April, staff meeting

Cost = parks staff time

Objective 2

City will continue to maintain prairies on city land. Maintenance should ensure establishment and success of established native prairie by eliminating 90% or more of invasive found within 3 years and maintain this level annually

Tasks:

- Inventory and map invasives encroaching in and on edges of prairies.
- Use contractor to treat and remove invasives from prairies
- Complete prescribed burns every 3 to 5 years

Schedule and costs

Year 1, mid to late July: survey inventory info

Cost = parks staff time

Year 1-3: seasonal, maintenance to remove invasives

Cost = contractor cost \$4,000

Every 3 to 5 years, spring. Complete prescribed burn of prairies

Cost = contractor cost \$10,000

Objective 3

Complete thorough environmental review and preserve sensitive areas when considering any development in this area.

Tasks:

- Coordinate with planning staff to determine locations and level of development acceptable within unit.

The Plan

- Continue current types of passive recreation uses to avoid impact of natural resources.

Schedule and costs

Ongoing as development is proposed

Cost = parks staff time

Fish Creek Management Unit 19

Unit Stats

Dominant land cover type: wet meadow

Dominant soil type: loamy sand

Dominant Terrain: flat

Marschner Presettlement Vegetation: Big Woods - Hardwoods (oak, maple, basswood, hickory)

Government recognition and protection status:

- The entire unit is within the state Mississippi River Corridor Critical Area Program (MRCCA) and federal National Park Service, Mississippi National River and Recreation Area (MNRRA)

Community Structure and Quality: low

Management Priority: Low

Unit Description

This area consists of wetlands surrounded by low lying brome/reed canary grass dominated fields and a small area of mixed woodlands in the northeast corner. The wetlands are classified as freshwater emergent wetlands. The vegetation within and around the wetlands is dominated by invasive, cattails, reed canary grass and purple loosestrife. The city of Maplewood currently owns this parcel. Archaeological digs occurred in the southern section of this parcel, closer to the creek and artifacts were discovered. The majority of the site, with the exception of the immediate wetland areas, was historically cleared and farmed in the early 1900's.

Management issues

The extent of native and exotic plant communities is not well defined throughout the unit.

Management objective, tasks, schedule and cost

Objective 1

Complete observational surveys in throughout unit to determine level of native and invasive plant species so that management decisions can be defined.

Tasks:

- Complete baseline observational surveys of native and exotic species
- Create a distribution map of native and exotic invasive species

Schedule and costs

Year 1: May and July - August, complete minimum surveys to capture the majority of invasive and native plant species.

Cost = parks staff time

Year 1: September, Develop maps of survey information

Cost = parks staff time

PUBLIC SERVICES

New public services may be needed to accommodate the history/nature/recreation center dependent upon the final location of the development. It is anticipated that additional development within existing trailhead sites and for the history/nature/recreation center will require new services for gas, water, sanitary sewer, and for communications. Once the history/nature/recreation center is established and visitor use increases, intersections and road will need to be reviewed regularly to determine whether intersection or road improvements are necessary to accommodate traffic volumes and preserve motorized and non-motorized transportation safety.

ACCESSIBILITY

The Ramsey County park system was originally designed for vehicular access. Ramsey County is still vehicle oriented, but public transportation options have expanded, and bicycling has grown in popularity. The All Abilities Transportation Program will lead to a more accessible transportation network. Since parks and recreation facilities and services contribute to public health, economic accessibility will remain an important consideration. Parks and trails are generally free of charge, while other department recreation options, such as golf and arena use, are fee-based.

Ramsey County Parks & Recreation is committed to providing universal accessibility at all park and trail facilities. Ramsey County is part of the Ramsey County Active Living Communities partnership which works to bring about and sustain changes in design, transportation, and public/private policies to cultivate and support a way of life that makes physical activity in our neighborhoods and communities safer and easier. Ramsey County uses the following to assess and implement these changes:

ADA Transition & Implementation Plan

The department is implementing a plan to bring its sites and facilities into compliance with the requirements of Title II of the Americans with Disabilities Act of 1990, and updated 2010 standards.

Ramsey County Pedestrian & Bicycle Plan

The Ramsey County Pedestrian & Bicycle Plan, developed through a collaboration between Active Living Ramsey Communities, Parks & Recreation and other county departments, municipalities, state agencies, residents, and other organizations, establishes a vision and strategy for providing safe and comfortable facilities for pedestrians and bicyclists throughout the county.

All Abilities Transportation Network

The all abilities Transportation Network unifies regional transportation efforts under a shared vision and implementation strategy to realize an integrated and fully interconnected multi-modal transportation system providing safety, health, mobility and connectivity for residents of all abilities.

CONFLICTS

Adjacent land uses of Battle Creek Regional Park are overwhelmingly residential and commercial near the Battle Creek, Fish Creek and Mississippi River Bluffs segments of the park. The Pigs Eye segment of the park is surrounded by park space, industrial, and public services. Bisecting the two sites is Highway 61 and a major railroad corridor. Due to the surrounding uses Pigs Eye Lake is largely cut off from the surrounding community.

The Battle Creek segment of the regional park has numerous points of conflicts that arise from the segmented nature of the park causing community members to have to cross busy roads and intersections to enter the park if they are not traveling by vehicle. Along with the recommendations made in this plan, Ramsey County should continue to

Chapter Title

monitor traffic in order to adapt.

Crossing the railroad and Highway 61 corridor for one or more pedestrian access points into the Pigs Eye Lake segment of the park will be a challenge. Ramsey County, the surrounding community and other shareholders need to continually engage the railroad and the Minnesota Department of Transportation to move the conversation along in order to secure the proper rights and easements to make a crossing(s) a possibility. Ramsey County shall continue to engage and plan for these pedestrian access points.

Land use surrounding Pigs Eye Lake will also make accessing the surrounding land and establishing trailheads difficult. On the north end of the lake Saint Paul and The Metropolitan Wastewater Treatment Plant border property owned by Ramsey County. Access through the Land owned by Saint Paul causes any future infrastructure to disturb the Pigs Eye Dump, while any access through the treatment plant is also difficult due to the plant being a secure site. On the south end of the lake the Saint Paul Port Authority operates the Red Rock Terminal. This terminal is a very busy port with trucks, barges, and rail cars constantly entering and exiting. At times vehicles can be trapped by rail cars for up to an hour. Accessing and utilizing the public land surrounding the terminal will require further planning for any type of trailhead to be established at this site.

Ramsey County heard through engagement concerns raised by members of the public about the island building project in Pigs Eye Lake, including concerns that the dredge materials could contaminate the lake further. Please see the Pigs Eye Lake Master Plan Amendment for public engagement results and Ramsey County's preferred vision for the island building project.

Proposed development, access points and recreational amenities within the Pigs Eye Lake segment of the park were developed based upon public input and prior planning efforts. Ramsey County acknowledges that issues including environmental clean up, public safety, and compatibility of recreational use with surrounding land use must be resolved before any new visitor access or recreational amenities can be provided.

Implementation



PHASING AND PRIORITIES

Implementation of proposed improvements is anticipated to take place in several phases for completion and will likely require alternate sources of funding from partners depending on the development project. Improvements are planned within a high, medium, low, and long-term priority to implement over time and better plan for the long-term capital improvement funding. Depending on the project need and/or demand, there may be a need to shift projects into different priority levels.

High Priority Items

High priority items will focus on projects that have been identified as high need, or focused on improving safety, or are currently funded, or projects in process.

Battle Creek Segment

- Winter Recreation Area development: Ramsey County has secured funding to begin improving cross country ski facilities in the Winter Recreation Area.
- Battle Creek Recreation/Nature Center redevelopment including community engagement and planning for the exact location, size, amenities and other needs of the building.
- Programming: Ramsey County should identify park programming and begin implementation of more in park activities for community members.
- Wayfinding and park entrance signage to be standardized, with signage directed at community access points as well as vehicular entrances.
- The erosion occurring from pedestrian traffic leading from the multi-use trail to the bluff prairie in the Battle Creek and Bluffs Corridor should be stabilized.
- The natural surface hiking/walking trail and entrance from Afton Heights Park to be restored with wayfinding signage appropriately placed at the entrance.
- Acquisition of 527 Battle Creek Road inholding so that planning for the Bluff Top Trailhead can begin to increase park access

Implementation

- Learning Trail Corridor and signage/outdoor spaces should be programmed and installed along with cooperation from community members, stakeholders, Indigenous community members and the local schools (Carver Elementary and Battle Creek Middle School)
- Continue to engage the Minnesota Department of Natural Resources Fishing in the Neighborhood program to begin family centered fishing opportunities in Battle Creek Regional Park
- Waterworks study to inform the future use and amenities of the water park
- Significant maintenance or redevelopment of waterworks

Fish Creek Segment

- Learning stations and outdoor classrooms should be prioritized in this segment of the park

Pigs Eye Lake Segment

- Island building project in coordination with the Army Corps of Engineers (see Pigs Eye Lake Master Plan Amendment)

Medium Priority Items

Medium priority items will focus on important projects that have need but should not be a priority until higher priority items are completed.

Battle Creek Segment

- Trail Development: continue to work towards the build-out of the trail system, wayfinding signage, trail improvements, and invasive species control measures already in place.
- Improvements of pedestrian and community access points: wayfinding signage should continue to be improved at community and pedestrian access points along with roadway crossing improvements.
- Staging and skills development areas for cross country skiing and off-road cycling
- Trail development encircling and connecting the Suburban Pond area of the park to the rest of the Battle Creek Trail system
- Access Trail and associated amenities connecting Battle Creek Middle School with the multi-use trail and learning corridor.
- Educational programming and community education surrounding Battle Creek and local water resources.
- Trailhead improvements at existing trailheads

Fish Creek Segment

- Natural surface walking and hiking trail development
- Engage with Maplewood for acquisition of property for incorporation into Battle Creek Regional Park.

Low Priority Items

Low priority items will focus on projects that do have need, but increased demand, use or environmental planning may be required prior to implementation.

Battle Creek Segment

- Existing trailhead redevelopment
- Suburban Pond trailhead development
- Bluff Top trailhead development
- Battle Creek Road closure and/or trail connectivity improvements
- Grade separated crossings at Burlington Road, Lower Afton Road and Ruth Street.
- New community access point along Lower Afton Road

Fish Creek Segment

- Trailhead development at the intersection of Carver Avenue and Henry Lane
- Trailhead redevelopment at terminus of Henry Lane
- Trailhead/access point development along Point Douglas Road

Mississippi River Bluffs Segment

- Planning for future site amenities, recreational facilities and bluff preservation
- Implementation of planned items as land is acquired

Pigs Eye Lake Segment

- Planning and Development for the Pigs Eye Lake segment along with partnering agencies, stakeholders and community members in accordance with the Pigs Eye Lake Master Plan

Implementation

IMPLEMENTATION COST ESTIMATE

Master Plan Implementation Cost Estimate

Activity	Cost
Pigs Eye Access & Development Studies	\$300,000
Regional Development Studies	\$300,000
Multi-Season Trailhead and/or Nature Center Study	\$300,000
Waterworks Improvement or Redevelopment Study	\$200,000
Suburban Pont Trailhead and Recreational Amenities	\$2,500,000
Upper Afton Road Active Recreation Area Trailhead Redevelopment	\$2,000,000
Upper Afton Road Active Recreation Area Trailhead Redevelopment	\$1,000,000
Lower Afton Road Off-Leash Dog Area Trailhead Redevelopment	\$1,000,000
Park Entrance Road Trailhead Redevelopment	\$1,500,000
Bluff Top Trailhead Development	\$1,750,000
Fish Creek Trailhead at along Carver Avenue Development	\$2,000,000
Fish Creek Trailhead Redevelopment	\$2,000,000
Park Access Improvements	\$2,550,000
Burlington Road Access Study	\$150,000
Ruth Street & Upper Afton Road Underpasses	\$2,500,000
Learning Trail Corridor Study	\$200,000
Fishing Access and Programming	\$500,000
Cross Country Skiing Staging Area & Winter Recreation Area Development Study	\$1,000,000
Off-Road Cycling Skills Area, Site Amenities, and Wayfinding/Signage	\$1,100,000
Off-Road Cycling and Hiking Trail Development	\$250,000
Off-Leash Dog Area Improvements	\$500,000
Picnic Area Development & Site Amenities	\$1,000,000
Wayfinding Rules & Trail Signage	\$1,000,000
New Bituminous Trail Development	\$400,000
Indigenous Peoples Cultural and Historical Study	\$300,000
Total Budget	\$38,300,000

OPERATIONS

Operations and maintenance of the regional park will be the responsibility of the Ramsey County Parks & Recreation department. Operations and maintenance services will be provided at a level that is appropriate for the designated use and consistent with proposed development. The level of services will be directly influenced by demand, type use, budget limitations and the county's operation and maintenance policies. Funding for regional park maintenance and operation is appropriated from county tax revenue, supplemented by state appropriation for Regional Parks Operation and Maintenance Funding.

Annual Operations & Maintenance Costs Estimate

Activity	Cost
Bathrooms Facilities Maintenance and Cleaning	\$25,000
Trash and Recycling Collection	\$21,000
Spring Cleanup	\$10,000
Mowing and Turf Maintenance	\$30,000
Brush Cutting and Tree Trimming	\$20,000
Parking Lot Maintenance	\$25,000
Amenities (Benches, Signs, Picnic Tables, Etc.) Maintenance	\$17,000
Snow Removal	\$20,000
Paved Trail Maintenance	\$10,000
Recreation & Nature Center Maintenance	\$20,000
Snow Making and Grooming *	\$50,000
Recreation & Nature Center Staff	\$300,000
Waterworks Maintenance	\$50,000
Waterworks Staff	\$150,000
Total Annual Operating Budget	\$748,000

Operating Hours

Park and trail operating hours are defined within the Ramsey County Parks & Recreation Ordinance. Currently, regional parks and trails have general operating hours from 1/2 hour before sunrise to 1/2 hour after sunset. Operating hours may vary at high-use areas dependent on the recreation program and/or park use. It is anticipated that operating hours will change in the future to designated hours for consistency with other local and regional park systems and seasonal use.

Ordinances

Public use and enjoyment of the county park system is controlled by "An Ordinance for the Control and Management of Park, Recreation and Open Space Areas and Facilities under the Jurisdiction of the Ramsey County Board of Commissioners." This ordinance, adopted in 1992 and amended in 2007, will govern the conduct of the public during the use of the regional park, its facilities, and resources. The ordinance, provided in the appendix, incorporates pertinent Minnesota statutes and includes the following sections:

- Purpose/Definitions

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- Regulations of Public Use
- General Conduct
- Regulation of Recreation Activity
- Regulation of Motorized Vehicles, Traffic, and Parking
- Enforcement
- Miscellaneous
- Effective Date

Operations and Maintenance Cost

Operation and maintenance costs are based on a combination of past practice, work done in other park systems, and expert opinion. Operation and maintenance cost may require additional evaluation after implementation of new infrastructure. Operation and maintenance costs may vary from year to year depending on economic, climatic, development, and demand of infrastructure, as many variables can influence the actual cost of operation and maintenance.

Enforcement and Safety

The Ramsey County Parks & Recreation Department, in conjunction with the Ramsey County Sheriff's Department, will educate and direct the public in appropriate use, provide ordinance enforcement, assist with first aid, and ensure security in the regional park. The Ramsey County Sheriff will be responsible for enforcement of park hours.

PUBLIC AWARENESS

Ramsey County will use a variety of tools to promote awareness and use of the regional park system. This includes electronic and print communication methods such as websites, park maps, brochures, email notification, Twitter, Facebook, and press releases. The Parks and Recreation department will provide necessary information and updates to the department's website.

Ramsey County will also collaborate with the cities of Saint Paul and Maplewood, and the Metropolitan Council to promote the park through their websites, newsletters, brochures, and social media. Wayfinding signage throughout the park will be updated as needed following the Ramsey County Parks & Recreation Department Wayfinding Master Plan for consistency with other regional park and trail facilities.

EQUITY ANALYSIS

PROJECT DATA

Scope

Public engagement for the Battle Creek Regional Park Master Plan was intended to reach as wide of an audience as possible, while also focusing on an equitable approach through the thoughtful selection of engagement sessions in order to reach as racially diverse audience as possible at the same time. Ramsey County Parks & Recreation focused on gathering information both from community members who live near the regional park as well as county-wide.

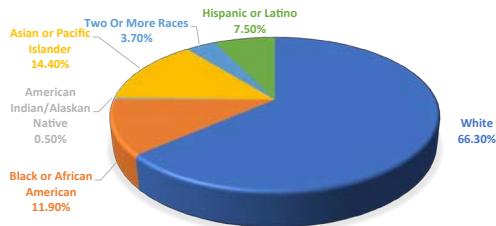
Comparing census blocks from 2010 data extrapolated to reflect the approximate values in 2019 between tracts that fall within 1 mile of the regional park with those of Ramsey County overall may provide some meaningful data.

Implementation

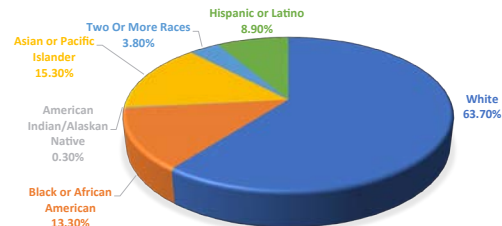
Ramsey County as of 2019, had a population of 544, 442. The median household income of the county was \$64,660, with a poverty rate of 14%. The subset of the population living in a census tract within 1/2 mile of the regional park had a population of 84,604, with a median income of \$57,341 and a poverty rate of 12.6%

The following graphs reflect the race, education and age of the respective areas:

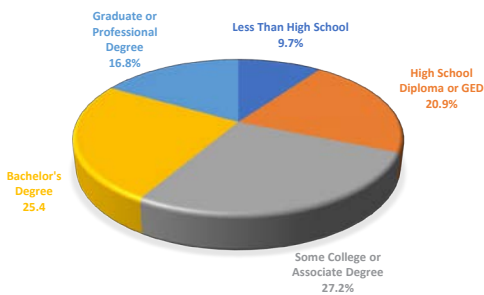
Ramsey County Demographics - Race



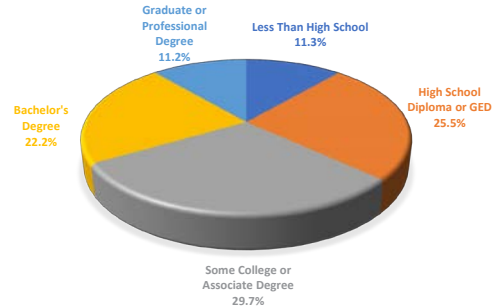
Focus Area Demographics - Race



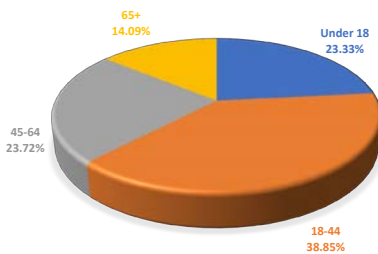
Ramsey County Demographics - Education



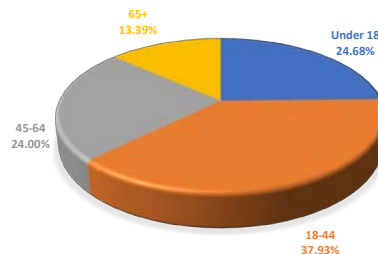
Focus Area Demographics - Education



Ramsey County Demographics - Age



Focus Area Demographics - Age



The area surrounding Battle Creek Regional Park is largely representative of Ramsey County as a whole, with a slightly higher racial diversity. Additional data for neighborhoods within the immediate surrounding focus area shows a higher percentage of home ownership and a lower percentage of renter-occupied housing than Ramsey County as a whole. Transportation is another area of difference, residents in the focus area near Battle Creek Regional Park have a higher percentage of households with multiple vehicles and use public transportation less than Ramsey County as a whole, but their travel times to and from work are extremely similar. The full reports from Minnesota Compass which draws it's data from the United States Census can be found in the appendix.

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PUBLIC ENGAGEMENT AND PARTICIPATION

Relative to the rest of Ramsey County, the area surrounding Battle Creek Regional Park is a more racially diverse area with a population that also skews slightly younger. The focus area looked at census tracts within 1/2 mile of Battle Creek Regional Park and has larger populations of Asian or Pacific Islanders, black or African Americans, and Hispanic or Latino peoples.

Ramsey County Parks & Recreation along with SRF made conscience decisions, along with the project management team which consisted of partnering agencies, to formulate community engagement that would target these populations. In addition to online engagement that was available to all through the use of translation services, postings about upcoming community meetings and design charrettes were posted throughout the park with translations in a few prominent languages. To ensure that the opinions of a racially diverse audience were included in the master plan, Ramsey County Parks & Recreation held pop-up meetings at various community festivals, events, and at reservations made at the Battle Creek Regional Park pavilion including:

- Hmongtown Marketplace
- Battle Creek Pavilion Eritrean Muslim Council Event
- Southeast Community Organization Community Event
- Battle Creek Recreation Center Food Shelf Night
- Southeast Community Organization Council Meeting
- Carver Elementary Family Night
- Battle Creek Middle School English as a Second Language Classroom

The events listed above saw participation among racially diverse community members in proportions far greater than their representative numbers when compared to the focus area demographics. Through engagement with Battle Creek Middle School and Carver Middle School Ramsey County was able to specifically focus on gathering feedback from younger community members.

In prioritizing community engagement events which were intended to target community members who were from racially diverse backgrounds as well as a number of events that looked at younger audiences the themes that Ramsey County heard included:

- Prioritize programming which would include beginner to intermediate outdoor programs
- Prioritize programming which would introduce community members to new forms of outdoor recreation such as off-road cycling, hiking, and cross country skiing while keeping fees to a minimum or free
- Prioritize the redevelopment of waterworks or the implementation of a free splash pad
- Built park uses such as picnic facilities, shelters, playgrounds, and trails are important features that are heavily used and in demand
- Trailhead amenities such as water fountains, restrooms, security cameras are important for access and to feel safe
- Support for the addition of a nature center
- Increase fishing opportunities
- Safe access to park

Evaluation Summary

Public participation from racially diverse and younger audiences provided Ramsey County with valuable feedback from this segment of the population. Overall the desires and wants of these community members is in line with the rest of Ramsey County. The themes that were brought forward strengthened the need for trail development, trailhead improvements, and the addition of a nature center. Ramsey County has also heard very strongly that programming needs to be an essential and integral part of Battle Creek Regional Park as the master plan is implemented. The programming that is developed needs to continue to explore ways to involve the community and keep costs low while providing access to community members who may not be able to afford fees and also should explore ways to transport community members to events to increase accessibility of the programming.

Input from younger and racially diverse community members also helped to shape the plan and influenced the way in which Ramsey County decided to prioritize implementation strategies. Waterworks redevelopment, programming, and the addition of a nature center are all high priority items that have been identified.

GOVERNMENT ALLIANCE ON RACE & EQUITY

An additional tool that Ramsey County Parks & Recreation has decided to use in the evaluation of the equity of the Battle Creek Master Plan is the Government Alliance on Race & Equity Toolkit. This toolkit asks a variety of questions that are designed to integrate explicit consideration of racial equity in decisions, including policies, practices, programs, and budgets.

The Battle Creek Regional Park Master Plan has looked at and used the toolkit to evaluate the plan from an equity lens and answers to the questions posed by the Government Alliance on Race & Equity follow.

What Is Your Proposal and the Desired Results and Outcomes?

The Battle Creek Regional Park Master Plan will develop a long-range vision and recommendations for the park, built from input from the public and stakeholders. This will be achieved by gathering information on issues and concerns from community members and stakeholders, engaging in design charrettes with the public, and ultimately refining a master plan that will guide future park improvements.

This proposal will have the ability to impact:

- Children and Youth
- Community engagement
- Education
- Environment
- Community members from Ramsey County and beyond

What's the Data? What Does the Data Tell Us?

Relative to the rest of Ramsey County, the area surrounding Battle Creek Regional Park is a more racially diverse area with a population that also skews slightly younger. The focus area looked at census tracts within 1/2 mile of Battle Creek Regional Park and has larger populations of Asian or Pacific Islanders, Black or African Americans, and Hispanic or Latino Peoples.

The plan has the potential to impact the neighborhoods surrounding the park directly. A major component of the plan is park access and making road crossings, which are abundant, safer and built to serve the surrounding community. Park programming is also a top priority to bring new or novice users into the park and teach about a variety of subjects which is yet to be determined.

How Have Communities Been Engaged? Are There Opportunities to Expand Engagement?

Ramsey County has engaged communities in a variety of ways including:

- Pop-Up Meetings
- Stakeholder Meetings
- Community Meetings
- Design Charrettes
- Online Surveys
- Draft Concept and Plan Reviews

The Battle Creek Regional Park Master Plan is the guiding document for the development of the park in the future. As such there will be many more opportunities as development of the area occurs to expand and increase

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engagement opportunities as the plan is implemented and carried out. Ramsey County shall continue to use engagement best practices as they are understood at the time of future engagement.

Who Benefits From Or Will Be Burdened By Your Proposal? What Are Your Strategies for Advancing Racial Equity or Mitigating Unintended Consequences?

Ramsey County hopes that the proposals for Battle Creek Regional Park will ultimately increase racial equity and benefit all community members. From community engagement that has been targeted at diverse audiences Ramsey County Parks & Recreation has learned that these communities desire:

- Safer park access points
- Park programming in a variety of subjects and disciplines such as beginner outdoor recreation courses, nature courses, after school programming, and community events
- Trailhead and park amenities such as water fountains, restrooms, benches, picnicking infrastructure
- Implementation of a free splash pad or the redevelopment of waterworks
- Educational programming in the park
- Nature center development
- Playgrounds

Many of these desired outcomes were shared among all communities and stakeholder groups and have been incorporated into the planning and implementation strategy for Battle Creek Regional Park.

Diverse community members have advocated for the implementation of park programming and it is evident that Ramsey County needs to develop a robust and varied catalog of programs for the community to participate in. Ramsey County has also heard through engagement that this programming needs to be available to all and to do this fees must be low or non-existent for entry into programs. Racially diverse segments of the population could be burdened by the proposal if Ramsey County does not continue to engage these community members and ensure they have access to and knowledge of future park programming and proposed infrastructure.

Throughout engagement it has become apparent that there are many public and private agencies that share the desire to develop programming within Battle Creek Regional Park increasing access and opportunity for racially diverse communities. Ramsey County should continue to engage with these agencies to produce lasting partnerships that may help to shape park programming. Agencies that Ramsey County could partner with to develop programming include but are not limited to:

- Endurance United
- Minnesota Off Road Cyclists
- Audubon Society
- National Park Service
- Minnesota Department of Natural Resources
- The Loppet Foundation
- The Sanneh Foundation
- High School Cross Country Ski Teams
- Friends of the Mississippi River
- Carver Elementary School
- Battle Creek Middle School
- City of Saint Paul
- City of Maplewood
- Friends of the Maplewood Nature Center
- Lower Phalen Creek Project
- Indigenous/Native American Groups

An unintended consequence of the plan includes an inequitable distribution of recreational opportunities. A large part of the plan is also focused on completing the infrastructure needed to make recreational programming a

reality such as trails, wayfinding and signage improvements, and trailhead improvements. These amenities support recreational users such as hikers, off road cyclists, cross country skiers, trail runners, in-line skaters, bird watchers and many other groups. Programming and introducing community members who are not already active users of Battle Creek Regional park will be vital in the success of the plan from an equity lens.

What is Your Plan For Implementation?

Implementation of proposed improvements are anticipated to take place in several phases for completion and will likely require alternate sources of funding from partners depending on the development project. Improvements are planned within a high, medium, low, and long-term priority to implement over time and better plan for the long-term capital improvement funding. Depending on the project need and/or demand, there may be a need to shift projects into different priority levels. Please see the implementation plan starting on page 157 for more detail.