

MASTER PLAN AMENDMENT



Lilydale Regional Park Master Plan (Amendment to Lilydale/Harriet Island Regional Park Master Plan)

Prepared by the Saint Paul Parks and Recreation Design Section



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Introduction

This amendment to the Lilydale/Harriet Island Regional Park Master Plan is occurring due to a proposed change in the plans of the original Lilydale/Harriet Island Master Plan completed in 1991, as shown in Figure A.

The revised master plan will address the eleven elements identified for Regional Parks and Open Space Master Plans in the Metropolitan Council Parks and Open Space Development Guide/Policy Plan. It is specifically intended to meet the criteria required by the Metropolitan Council and once adopted, will make the City eligible to apply for funding to implement plans for the new amenities identified in this plan amendment.

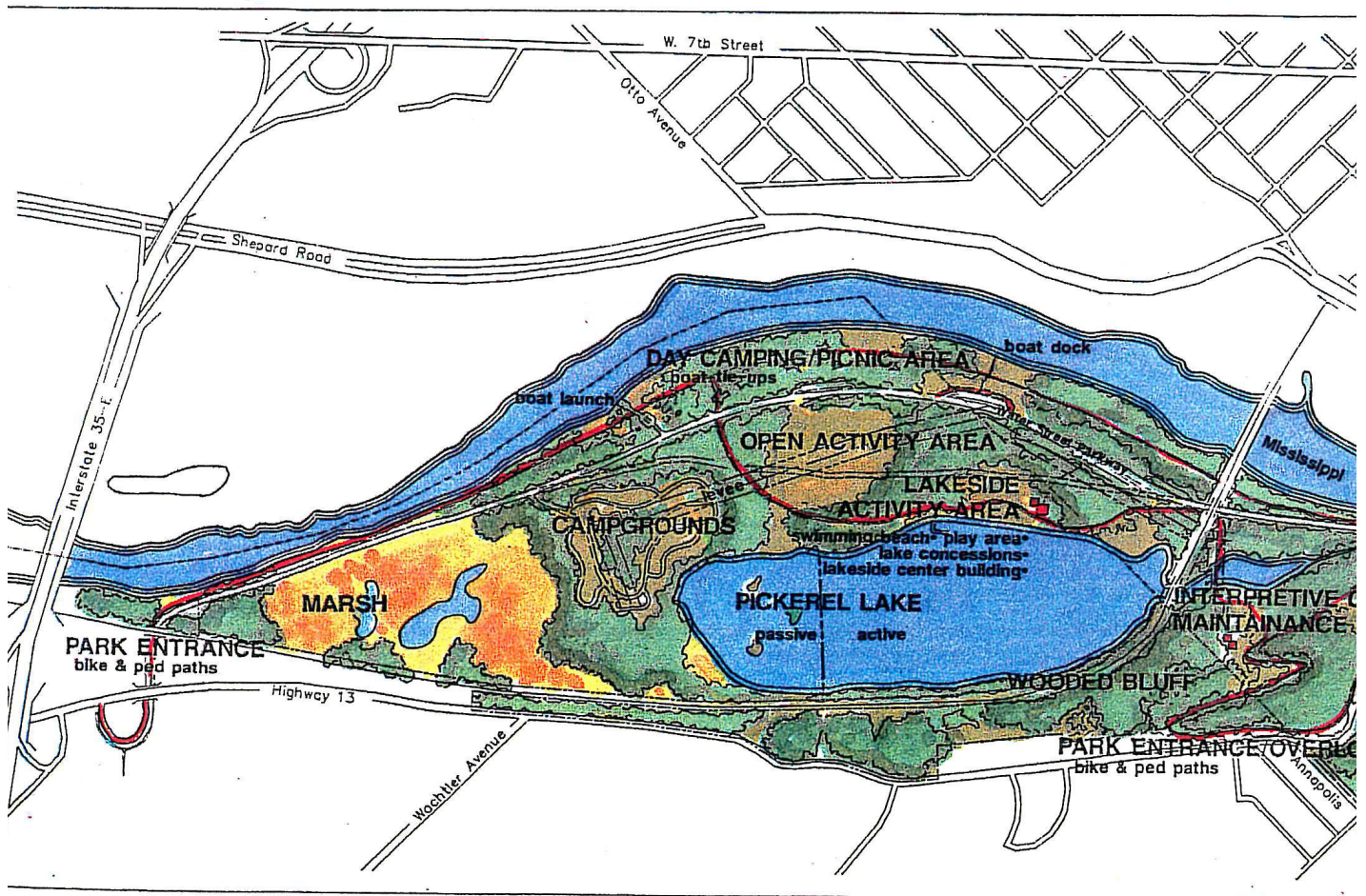
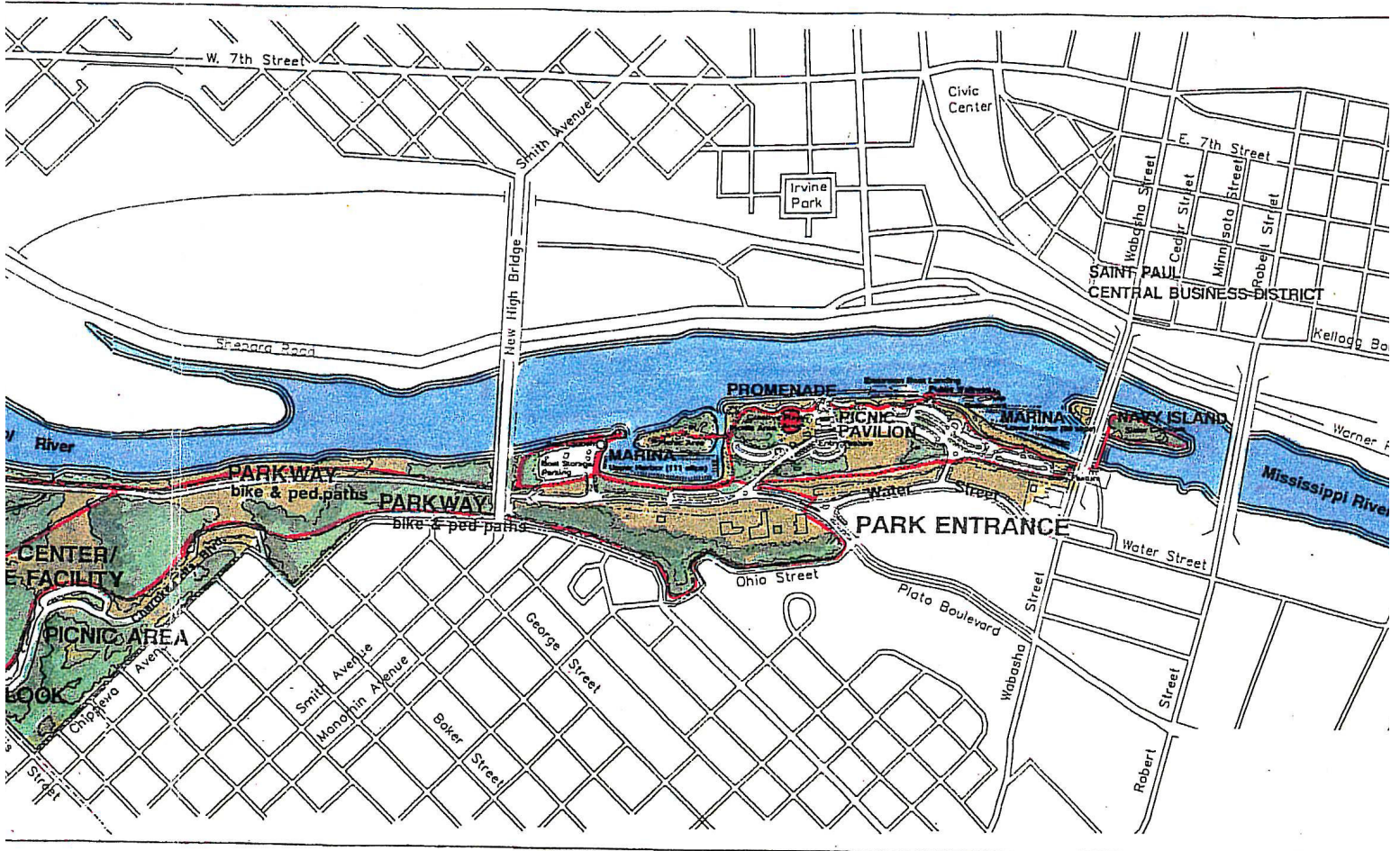


Figure A: Existing Lilydale/Harriet Island Regional Park Master Plan from September 25, 1990

Boundaries & Acquisition Costs

Lilydale Regional Park is owned and maintained by the City of Saint Paul. The major portion of the park is located outside the Saint Paul city limits within the City of Lilydale, located in Dakota County. It is defined by the Mississippi River to the North, Highway 13 located above the river bluffs to the South, Harriet Island Regional Park to the East and the Pool and Yacht Club to the West.

Lilydale Regional Park is a 384 acre park which includes the 100 acre Pickerel Lake and an additional 100 acres of wetland/marsh. No additional parcels are required for the revised Master Plan.



Stewardship Plan

The City of Saint Paul owns and maintains Lilydale Regional Park. The Saint Paul Police and Fire Department currently maintains public safety within the park boundaries. There are no non-residential uses or collection of revenues from such uses planned at this time. Should such uses occur in the future, revenues will be utilized consistent with the adopted *Recreation Open Space Development Guide/Policy Plan*.

Demand Forecast

Based on the *2008 Metropolitan Council Annual Use Estimate of the Metropolitan Regional Park System*, Lilydale/Harriet Island/Cherokee Heights Regional Park was ranked as the 10th most visited regional park with 1,089,000 visits in 2008. A third of those visits were from special events occurring at Harriet Island.

The *Metropolitan Council 2008 Parks and Trails Survey* indicated walking/hiking, picnicking, playground use and relaxing are the top activities occurring in Lilydale/Harriet Island Regional Park.

A community wide *Community Attitude and Interest Citizen Survey* was completed winter 2007-2008, to establish priorities for the future improvement of parks and recreation facilities, programs and services for the City of Saint Paul. The results of this survey indicate walking and biking trails, small neighborhood parks, park rest rooms, Como Zoo and Conservatory and picnic areas/shelters as the top 5 of 17 facilities requiring improvement within the City of Saint Paul. The proposed Master Plan for Lilydale will meet the requested recreational amenities by providing walking/biking trails, picnicking opportunities and restroom facilities within the park.

See Appendix A for projected site capacity and parking capacity estimates.



Canoes on Pickerel Lake



Existing Regional Trail along Water Street

Development Concept

The City of Saint Paul obtained the land now known as Lilydale Regional Park through a land swap agreement with Ramsey County after the Village of Lilydale relocated out of the flood way. In addition to numerous homes and related out buildings, Lilydale Regional Park has been the location of industrial and commercial operations including a brickyard, automobile salvage yard, a marina and a demolition landfill. These past uses are still apparent in the landscape through the large piles of construction debris buried within the park.

The revised Master Plan for Lilydale Regional Park will restore the park to a natural resource based park. Existing contaminated soils and debris will be removed through out the park and re- vegetated with natural plant communities.

The development concept provides the following design elements which are indicated in Figure B below.

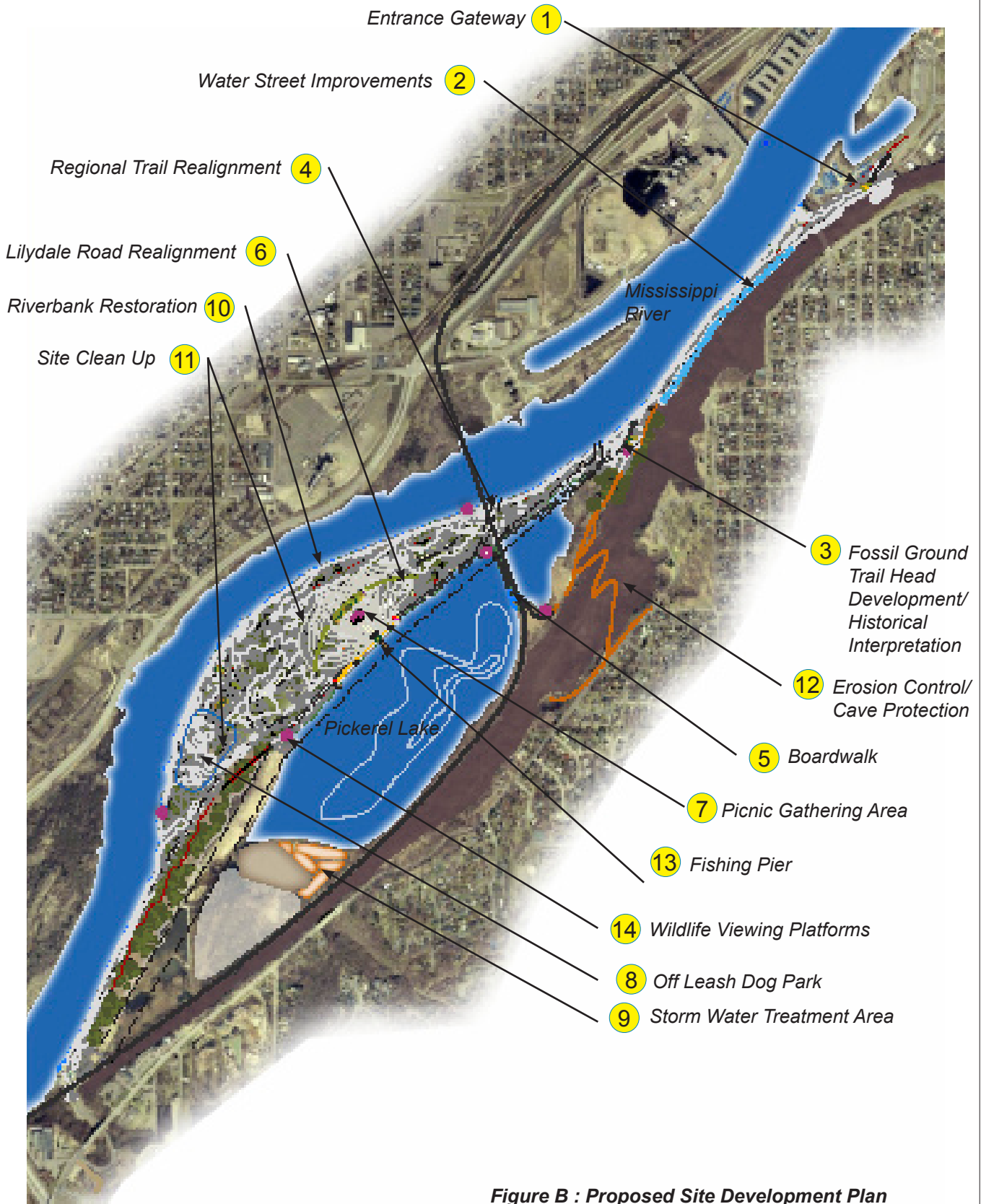


Figure B : Proposed Site Development Plan

1 - Entrance Gateway

A gateway marking the entrance into Lilydale Regional Park from Harriet Island, will reflect the overall vision and aesthetic of the park. The gateway will use local limestone and brick from the former Twin Cities Brick Company to create a dramatic entrance into the park. Invasive plant material will be removed allowing viewsheds of the Mississippi River to appear from the existing roadway and regional trail. A planted median is also proposed with native plantings. See Figure C and D below.

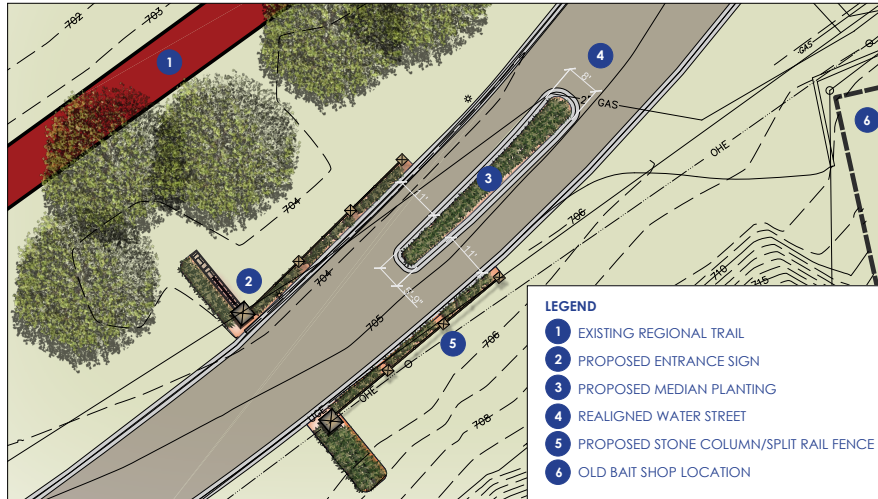


Figure C: Plan View of Entrance Gateway

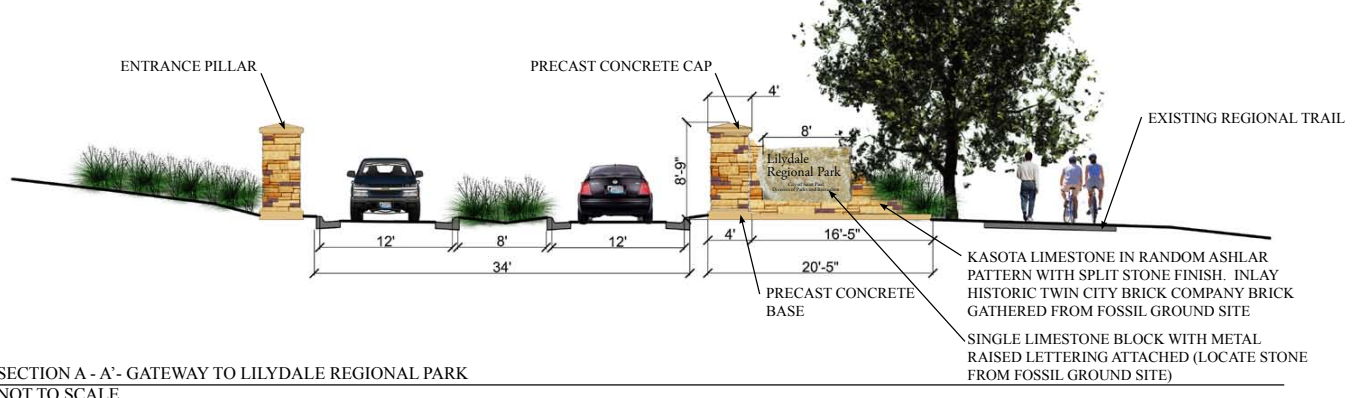


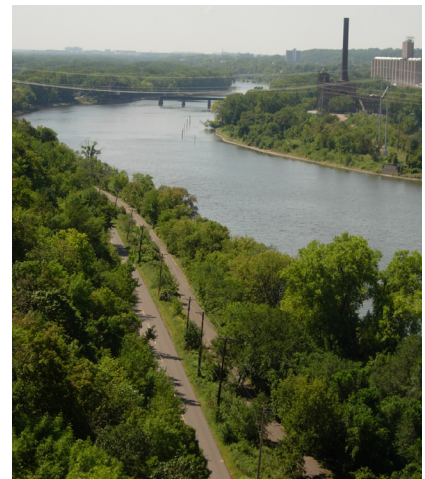
Figure D: Section of Entrance Gateway

2 - Water Street Improvements

Water from the bluffs constantly seeps onto and beneath Water Street. The constant presence of water on the roadway has resulted in deterioration of the roadway. A creek bed is proposed along the base of the bluff to collect the water and divert it to a nearby collection location preventing further deterioration of the roadway.



The existing regional trail abruptly ends at the entrance to the fossil grounds and trail users are forced to share the roadway for 875 feet, until the trail begins again past the Historic Mendota Heights



Proposed Creek Bed along Water Street

Existing Aerial View of Water Street

Bridge. Water Street will be realigned further away from the rivers edge and existing regional trail to eliminate the trail and roadway conflicts that currently exist. The realignment of this section of Water Street will provide a direct connection to the entrance of the fossil grounds, eliminate existing trail conflicts and bury existing power lines; greatly enhancing the entrance to Lilydale Regional Park from Water Street. It also places the trail adjacent to the river creating viewing/overlook opportunities. See Figure E below.



Figure E: Proposed Fossil Ground Trail Head and Water Street Improvements

3 - Fossil Ground Trail Head Development

A trail head kiosk will provide interpretive signage and a map of the unique features within the fossil grounds. Rest room facilities may also be provided at the trail head. See Figure E.

4 - Regional Trail Realignment

The existing regional trail will be realigned to provide a continuous trail through Lilydale Regional Park. Existing trail conflicts at the Union Pacific Railroad will be eliminated through the realignment along the Mississippi River. The realignment will reduce existing trail/roadway crossings from four to one.

5 - Boardwalk

A boardwalk along the northern edge of Pickerel Lake will provide an important pedestrian connection between the main picnic area along Pickerel Lake’s north edge and the Fossil Ground area. The boardwalk will not block access between the large body of water SW of the RR bridge and the small body of water NE of the bridge and adjacent to the fossil grounds. The Department of Natural Resources require that access be maintained for non-



Proposed Raised Boardwalk for Canoe Crossing

motorized boats on all navigable waterways. Fishing access points will be provided from the boardwalk. The boardwalk will also provide access to wildlife observation points along the shore of Pickerel Lake.

6 - Lilydale Road Realignment

Lilydale Road is currently aligned along the edge of Pickerel Lake, limiting the ability to implement placement of a picnic shelter along the lakeshore without a pedestrian roadway crossing. The proposal to relocate 2,600 lf of Lilydale Road further away from Pickerel Lake will provide space along the lakeshore for the central gathering and picnic area within the park. The roadway realignment will allow for traffic calming measures and storm water treatment through the introduction of planted medians and raised intersections at internal trail crossings. Water and sanitary sewer will run under the roadway providing service to the picnic shelter restroom. Lighting as needed for traffic and park safety will also be provided.

7 - Picnic/Gathering Area

A picnic shelter with public rest rooms will be provided within the Park. The picnic shelter is proposed to provide two separate shelters that accommodate 6 - 8 picnic tables each. The shelters will be raised above the floodplain elevation 12' to allow for water and sanitary service. Additional picnic tables will be provided adjacent to the picnic shelter and along the lakeshore. The picnic shelter will be designed using sustainable building design techniques, such as a green roof and the use of local limestone materials. An amphitheater is proposed along the lakeshore for small group gathering space. It will provide panoramic views across Pickerel Lake and provide access to the lakeshore trail and boardwalk. See Figure F.

Figure F: Proposed Lakeshore Gathering Area

1 PICNIC SHELTER

The picnic shelter, located 12' above the floodplain, will provide panoramic views of Pickerel Lake, the Mississippi River and bluffs. The picnic shelter area will serve as the main activity area within the park providing parking and restroom facilities. The shelter design will reflect a sustainable building approach resulting in a structure that merges into the natural landscape of Lilydale Regional Park. Two separate structures providing space for approximately 6 - 8 picnic tables. Additional picnicking opportunities are available within the low grass prairie area.



2 LILYDALE ROAD REALIGNMENT AND PARKING

The proposed parking lot (80 space) and canoe access route will utilize permeable pavers reducing storm water run off into Pickerel Lake. Storm water from the parking lot and picnic shelter will be directed to infiltration basins that slowly release and filter storm water prior to it being absorbed into the existing floodplain soil. The vegetated median will help slow traffic and provide additional opportunities for storm water treatment. Trail crossings will occur in correlation with raised intersections, providing a safe crossing for pedestrians and bicyclists.



3 LAKESHORE GATHERING AREA

Utilizing the landform created for the picnic shelter, the lakeshore gathering area will provide an amphitheater for small groups or individuals to gather along Pickerel Lake. This gathering area will utilize natural stone and native plant materials creating a unique space along Pickerel Lake.



4 WILDLIFE VIEWING

Wildlife viewing areas will be constructed for visitors to observe wildlife that call Lilydale Regional Park home or use the park as a stopping ground for migration. Platforms will be constructed in sensitive areas allowing park visitors to observe wildlife in their natural habitat while still protecting the natural environment.



5 FISHING PIER

A fishing pier and lakeshore access points will be provided along Pickerel Lake. The fishing pier will extend towards the deeper part of the lake, providing handicap accessible fishing locations and canoe tie-ups. Lakeshore access points will be constructed Summer 2009 as part of the Pickerel Lakeshore Improvements.



8 - Dog Park

An off leash 8.5 acre fenced dog park is proposed adjacent to the existing Department of Natural Resources (DNR) boat landing and in an area where extensive site clean up is required. The dog park will allow for dogs to be off leash within Lilydale Regional Park and because of the popularity of the dog park experience, dog owners and their pets will provide a more constant presence of visitors, thus reducing security issues within the park. Parking will be provided at the existing DNR parking lot.

9 - Storm Water Treatment Area

Ninety percent (90%) of storm water enters Pickerel Lake from the surrounding neighborhoods via Ivy Falls. The storm water deposits phosphorus and other nutrients that threaten the water quality of Pickerel Lake. The storm water treatment area includes the re-alignment of Ivy Falls Creek channel creating a re-aligned stream channel that discharges directly into the storm water treatment basins created within the existing wetland area south of Pickerel Lake.

10 - Riverbank Restoration

The existing shoreline along the Mississippi River is lined with bituminous and concrete rubble. Restoration and stabilization of approximately 2.5 miles of shoreline along Lilydale Regional Park is proposed. See Figure G below.



Existing Riverbank Condition

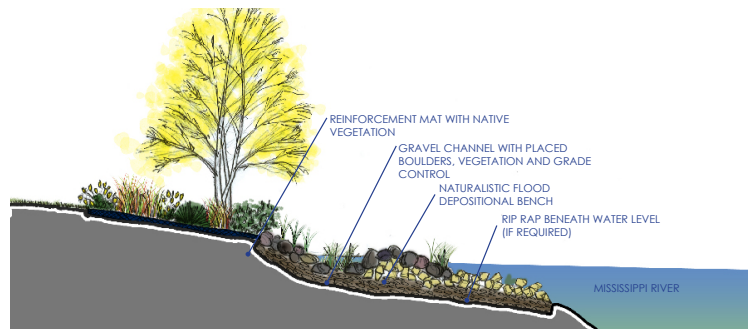


Figure G: Proposed Riverbank Improvements

11 - Site Clean Up

There are two large areas within Lilydale Regional Park where the old town of Lilydale was buried on site; the old marina demolition site and the Lilydale dump site. These areas are currently unusable as park land due to the visible presence of rubble and sinkholes from settling debris. Removal of the debris areas will restore the landscape to a natural condition and allow the land to be accessible by park users. Clean up efforts will include the sorting of reusable structural material, including concrete and bituminous to be used as structural fill for the proposed picnic shelter to be constructed in the floodplain. After site clean up, the area will be restored to natural plant communities as proposed in the *Lilydale Regional Park Natural Resource Management Plan*.



Existing Marina Demolition Site

12 - Erosion Control/Cave Protection

Ravines along the bluff line exhibit varying levels of erosion within Lilydale Regional Park. It is generally occurring along the mid to upper slope areas with some areas of incision exceeding 10 feet in depth. Erosion is also



Existing Site Erosion

occurring along the walls of the former clay pits used by the Twin Cities Brickyard. These areas are to be evaluated for stabilization measures.

Estimated cost of erosion control is dependant on preliminary investigation of erosion and stabilization measures. A field based inventory of location and severity of erosion is require to identify required stabilization measures. An estimate for this inventory is approximately \$15,000.00.

13 - Fishing Pier

A fishing pier will extend into Pickerel Lake providing acces- sible fishing access.

14 - Wildlife Viewing Platforms

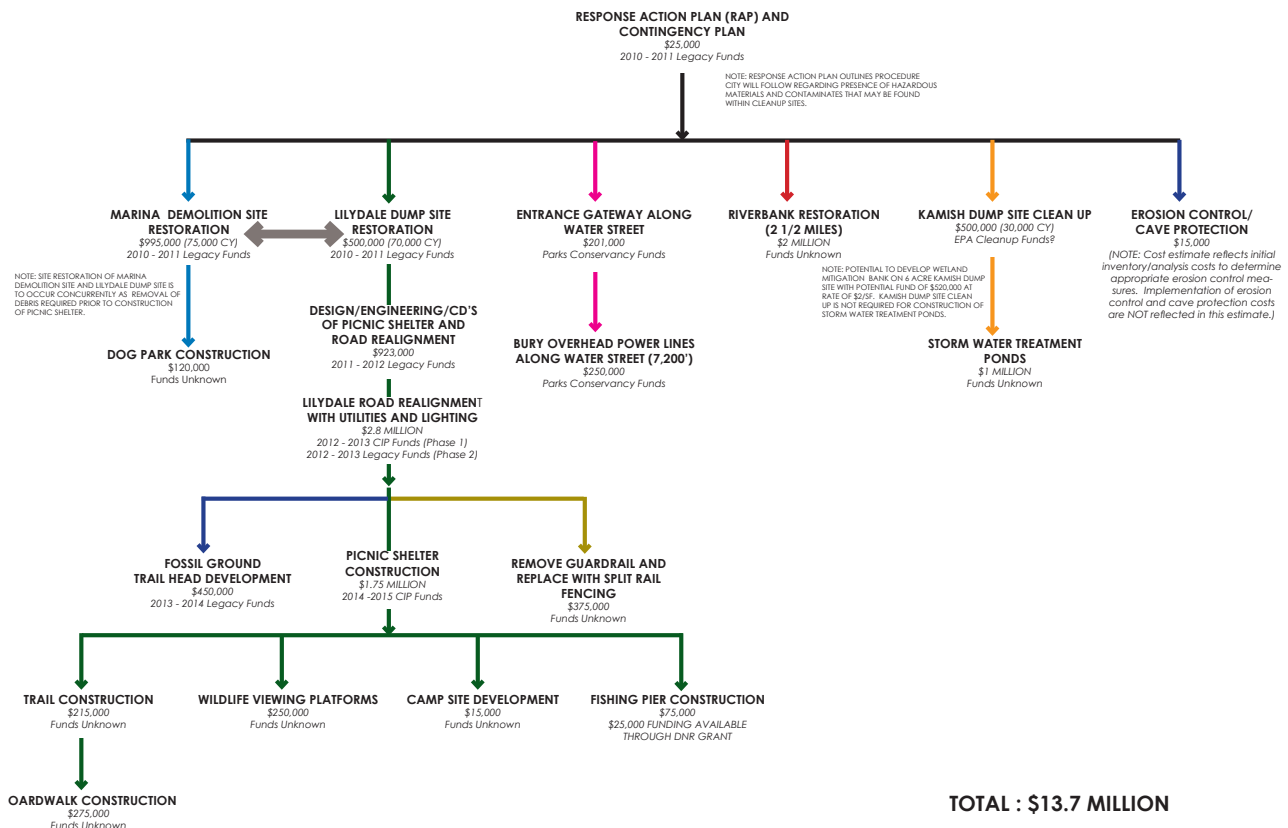
Five wildlife viewing platforms will be constructed in natural areas allowing park visitors to sensitively view and record wildlife within Lilydale Regional Park. Soft internal nature trails will provide access and connections between the wildlife viewing platforms. Interpretive signage will be provided where appropriate.



Proposed Wildlife Viewing Platform

Many of the design elements listed above can not be implemented individually as they are dependant on other measures occurring first. Below is a phasing diagram that highlights the required phasing process and associated cost estimates. Total project cost is estimated to

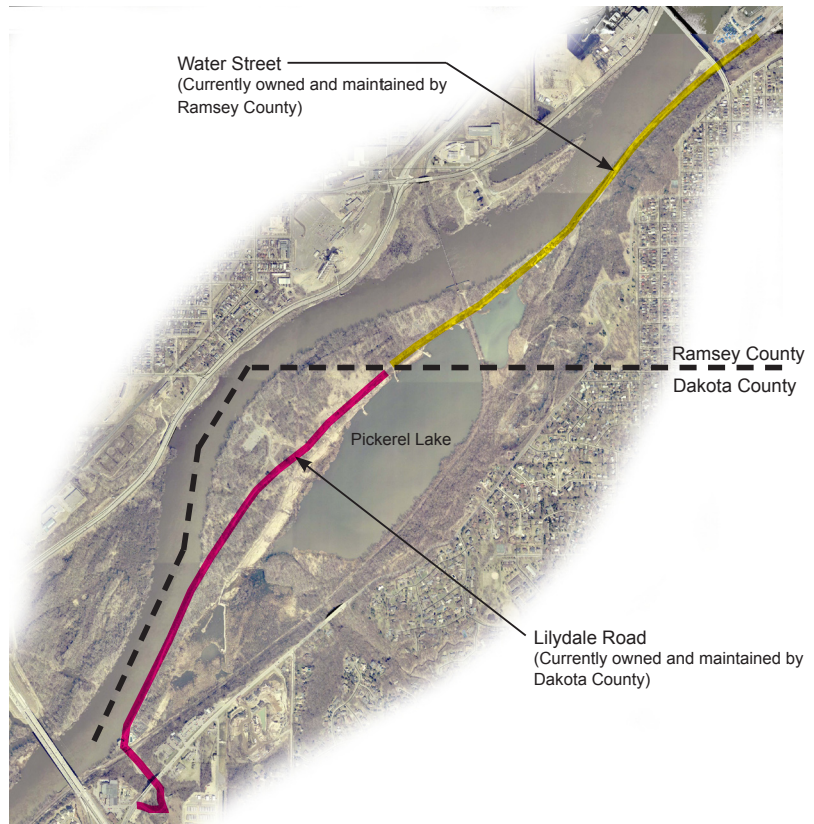
Figure B: The Improvement Phasing Plan.



Conflicts

Lilydale Regional Park is located in both Ramsey and Dakota Counties. The roadway that runs through the park is called “Water Street” in Ramsey County and “Lilydale Road” in Dakota County. Dakota County and Ramsey County are currently responsible to maintain their associated section of roadway. Dakota County and Ramsey County are both in favor of turning the roadway over to the City of Saint Paul as a city street. Saint Paul is hesitant to do so until roadway maintenance items have been completed. This would allow the City of Saint Paul to control the posted speed limit and implement traffic calming measures as needed within the park. Discussions between the City of Saint Paul, Dakota County and Ramsey County are currently underway to determine roadway operations and responsibilities.

Figure I: Existing County Road Ownership Map



Public Services

Currently, there are no public utilities existing within Lilydale Regional Park. Water, sanitary and electrical service will need to be provided to the picnic area for the public rest rooms and drinking water. These services will be provided in correlation with the realignment of Lilydale Road. Services will be provided from the eastern edge of the park and extend from Harriet Island.

Operations

The City of Saint Paul, operates and maintains Lilydale Regional Park. Patrolling of the facilities is provided by the Saint Paul Police Department. Under city jurisdiction, existing city rules, regulations, and ordinances for its operation and maintenance will apply. Estimated costs for operation and maintenance are as follows:

Estimated Annual Operation and Maintenance Costs

Picnic Shelter/Restroom maintenance	\$11,900
Green Roof maintenance*	\$1,440
Boardwalk	\$470
Fishing Dock	\$135
Natural area detailed maintenance*	\$25,000
Prescribed burning of natural areas*	\$4,000
Rain Garden maintenance*	\$2,600
Naturalized Lakeshore maintenance*	\$3,000
Annual Trail, asphalt maintenance	\$1,250
Brush back	\$320
Litter pick up, waste disposal	\$750
Snow Removal	\$310
Trades (carpenter, electrician, plumber...)	\$2,000
Total	\$51,176.00

** Reflects maintenance costs after 3 year establishment period for natural planting areas. 3 year maintenance period will be included in construction costs at time of bidding.*

Citizen Participation

A Design Advisory Task Force was assembled to help advise the development of the Site Plan for Lilydale Regional Park. The Task Force provided input and direction to the City of Saint Paul Parks and Recreation. A Public Forum discussing the proposed dog park and a Community Open House sponsored by West Side Citizens Organization were held to offer additional opportunities for citizen participation. All Task Force meetings were open to the public and information was posted on the City of Saint Paul web site for additional input.

The Site Plan was approved by the Design Advisory Task Force on July 1, 2009; approved by the Saint Paul Parks Commission on July 15, 2009 and approved by the City of Lilydale City Council on August 10, 2009.

Public Awareness

The Friends of Lilydale in association with the West Side Citizens Organization promote an extensive outreach and public awareness program for Lilydale Regional Park through their volunteer programs. Friends of Lilydale offer guided fossil digging tours, birding opportunities and guided hikes throughout the park. The Saint Paul Parks Conservancy selected Lilydale as their initial park project providing additional public outreach events. Lilydale Regional Park is also part of Mississippi National River and Recreational Area

(MNRRA) and has been the site for periodic river tours by Park Service Rangers.

Humbolt Senior High School will offer an environmental studies program beginning Fall 2009. They will be using Lilydale as an outdoor classroom for studies of the Mississippi River. Approximately 800 kids from grades 7 to 12 will use Lilydale Regional Park at some point as part of their educational program, increasing awareness of the park.

Special Needs

Access to and within the park and associated trails will be designed in accordance with the Americans with Disabilities Act providing access for persons with special needs. All parking areas will provide accessible parking with ramps to access trails and other site amenities. All proposed facilities will be used by all segments of the population and there are no charges to use these trails and facilities.

The existing fossil ground trail is currently inaccessible to persons with special needs. The steep grades down the historic brickyard route prevent access for those with disabilities. The proposed trail head and parking lot at the entrance to the fossil grounds will be designed to accommodate those with special needs, however the fossil ground trail will remain inaccessible.

Natural Resources

Plant Communities

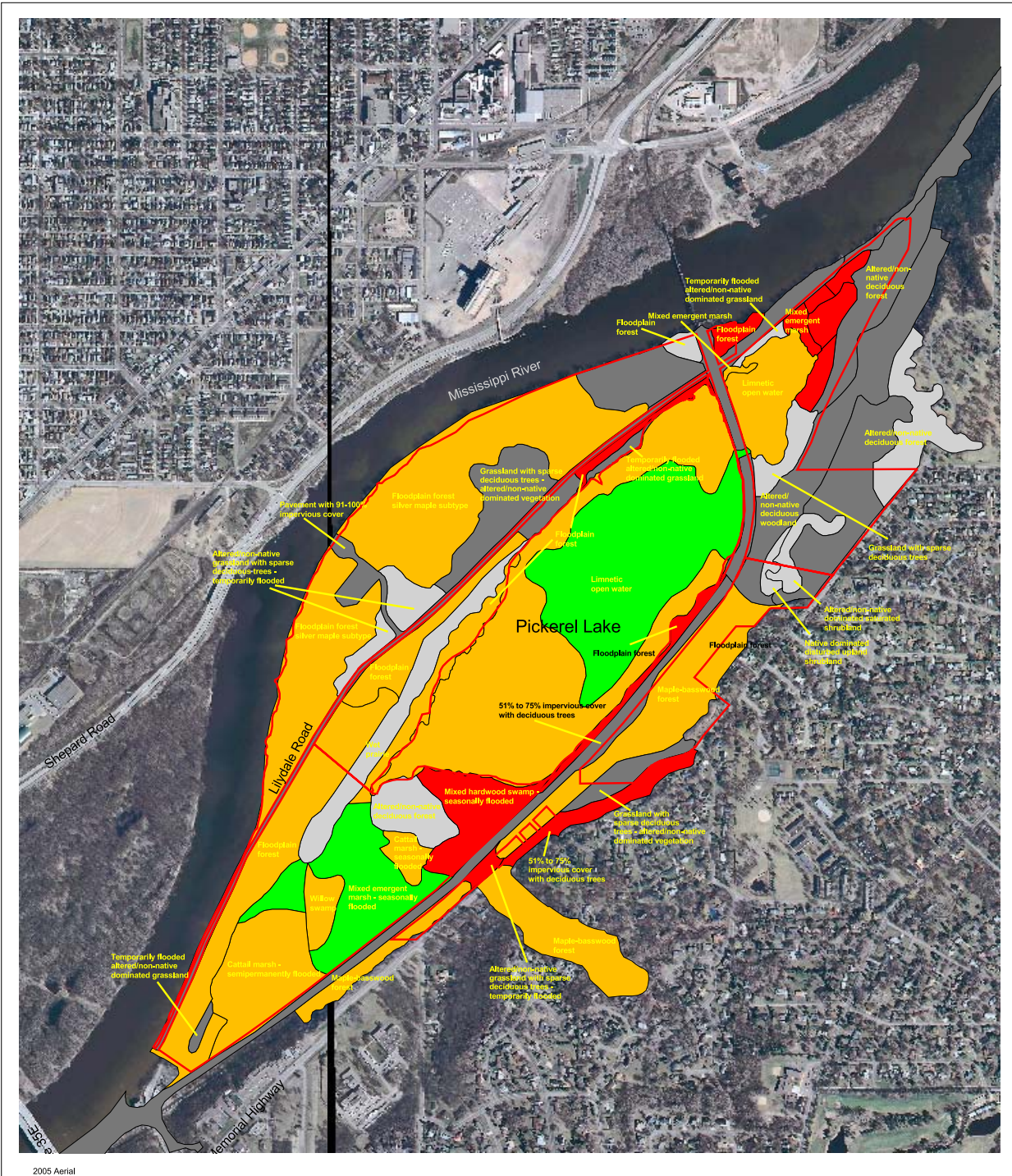
Lilydale Regional Park is located within the floodplain of the Mississippi River. The town occupied the land until the 1970's when Lilydale relocated out of the floodplain to its current location on the river bluffs. At that time, the City of Saint Paul acquired the land now known as Lilydale Regional Park. The landscape has been relatively untouched since Park ownership resulting in limited remaining natural areas.

The majority of the park consists of floodplain forest of moderate quality. The canopy of the forest supports large cottonwoods characteristic of the area with a sub canopy of elm, green ash, black walnut and black willow. Nonnative trees frequently encountered include Siberian and black locust. The shrub layer of the floodplain forest includes sandbar willow, red raspberry, black raspberry, false indigo and non natives Tatarian honeysuckle and European buckthorn. A number of native plant species are found in the ground layer, however more prominent species include invasive plant species of garlic mustard and reed canary grass.

The emergent marsh plant community occurs as a fringe along Pickerel Lake as vegetation growing within the water. The quality of the emergent marsh is variable with pockets of good quality plant material, but there are also low quality areas with obvious signs of disturbance and litter/junk dominated by nonnative plants.

The Maple-Basswood Forest occurs in several areas of Lilydale Regional Park along the northwest-facing bluff overlooking Pickerel Lake. Past human activities have impacted this forest type resulting in moderate to poor quality. Obvious signs of disturbance include old

Figure J: Existing Natural Area Quality Ranking

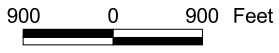


2005 Aerial

Lilydale Park - Natural Area Quality Ranking

LEGEND

	Lilydale Regional Park Boundary
Cover Type Quality Rank	
	High (B rank)
	Moderate (C rank)
	Poor (D rank)
	NA > 50% Native Plant Cover
	NN - < 50% Native Plant Cover



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roads, debris, and mounds of earth that appear to have been associated with clay mining.

A Mixed Hardwood Swamp occurs in two locations within the park. One is on the northwest side of the railroad embankment at the outlet of Ivy Falls. The out fall has a large amount of sedimentation resulting in more disturbance and nonnative, invasive species. The other mixed hardwood swamp location is located at the northeast side of Pickerel Lake by the railroad tracks. The spring/seep area is small in size, but of moderate good quality.

A Mixed Emergent Marsh is located in the southwest-central portion of the park. The emergent marsh is of good quality and dominated by native bur-reed.

Minimal management is required of this area as it is of good quality. It is also the location where Blanding's turtle has been documented within Lilydale Regional Park.

Cattail Marshes that are present within Lilydale Regional Park are considered a low quality due to the significant presence of invasive, nonnative narrow leaf cattail.

Water Resources

Ivy Falls Creek, as shown in blue on Figure K, provides 90% of the watershed input into Pickerel Lake from the surrounding neighborhoods of Mendota Heights, West Saint Paul, Saint Paul and Lilydale. The proposed Storm Water Treatment Basin will be located at the base of Ivy Falls to treat the high amount of sediment and pollutant loads entering Pickerel Lake.

Groundwater is another significant input into Pickerel Lake where aquifers discharge towards the Mississippi River from the bluffs.

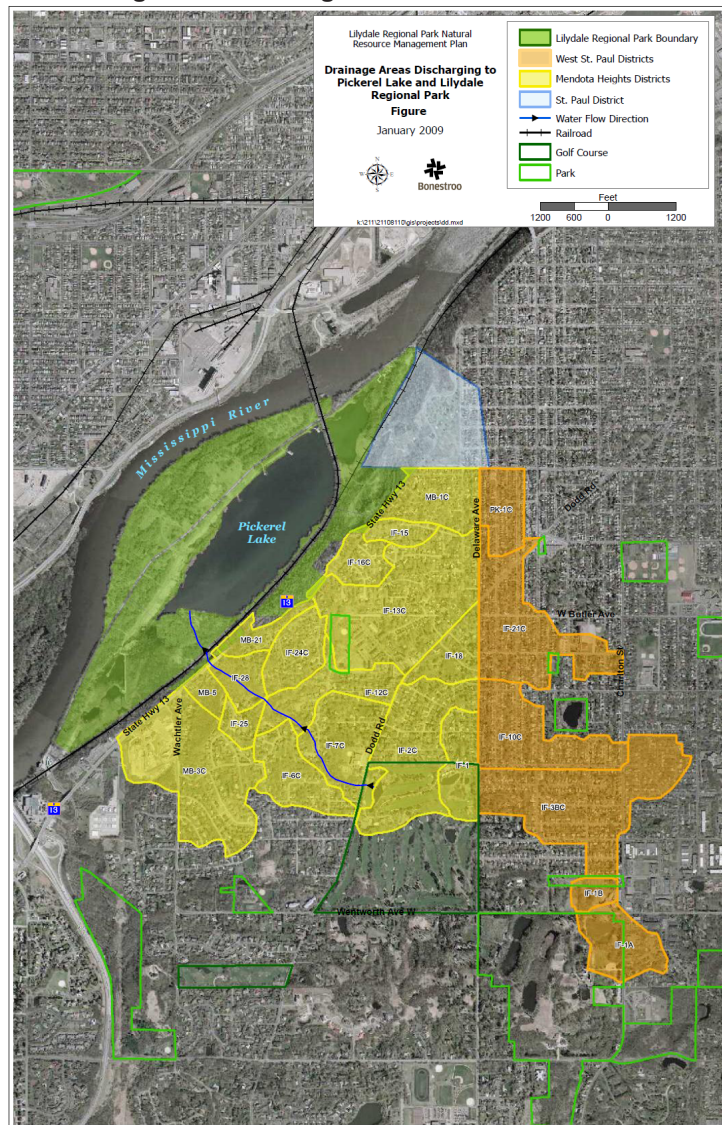
Pickerel Lake and adjacent wetlands are also part of the Mississippi River floodplain where Lilydale Regional Park is used for over bank storage during flood events. The occurs in a 10-year reoccurrence.

The proposed boardwalk and wildlife viewing areas will be constructed along Pickerel Lakeshore. The construction of these facilities will allow the public to view wildlife along the shoreline with minimal adverse impacts to the environment.

Management

The landscape and vegetation within Lilydale Regional Park has been modified by human activities. The vegetation management focuses on maintaining the quality of the remaining

Figure K: Existing Pickerel Lake Watershed Area

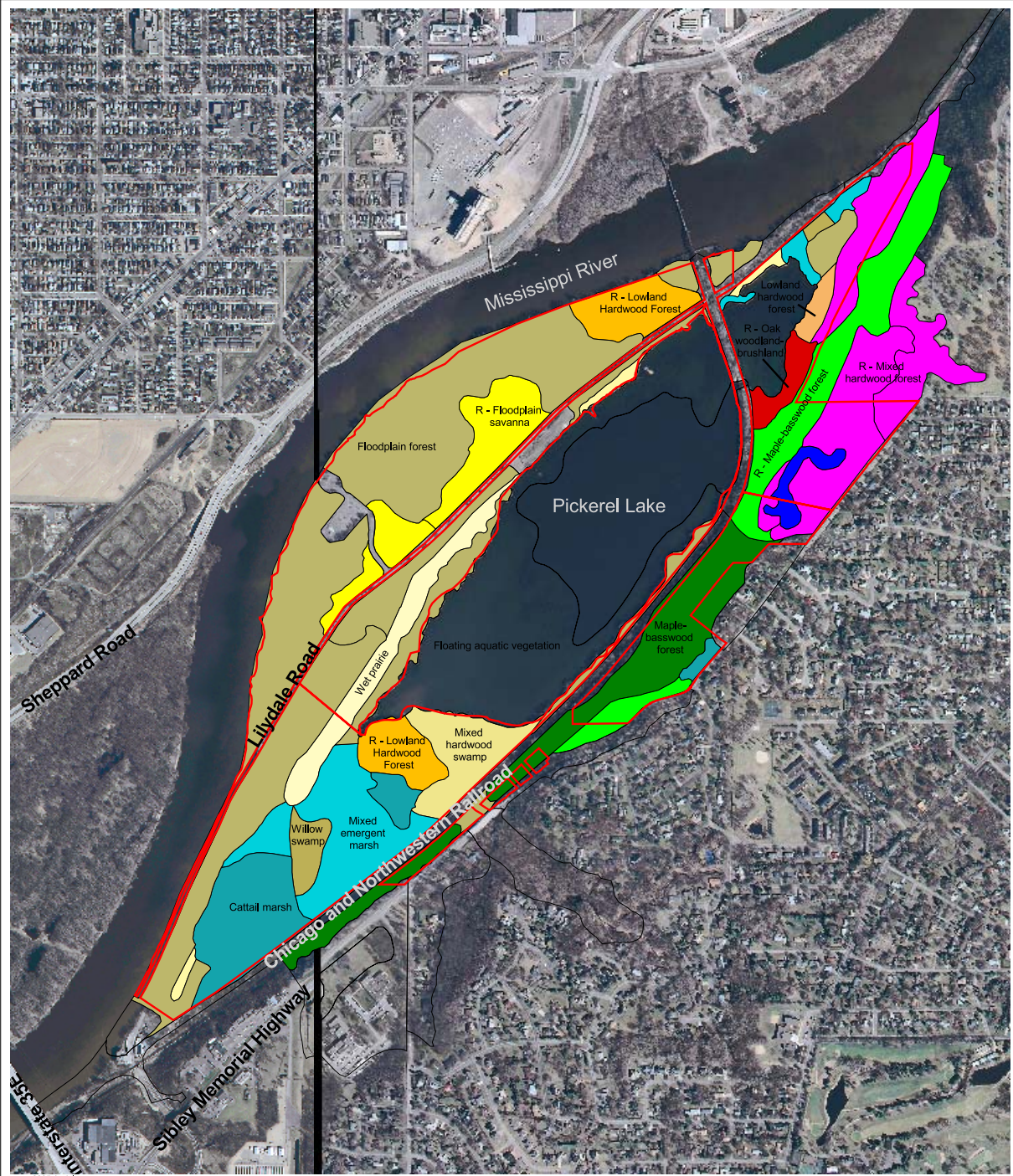


City of St. Paul, Division of Parks and Recreation
Lilydale Regional Park Natural Resources Plan

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Figure L: Proposed Natural Area Restoration Targets



Lilydale Park - Natural Area Restoration Targets

LEGEND

Non-native Community Types - Restoration Potential

- R - Floodplain savanna
- R - Lowland Hardwood Forest
- R - Maple-basswood forest
- R - Mixed hardwood forest
- R - Oak woodland-brushland
- R - Shrub swamp, seepage subtype
- R - Wet prairie

Natural Community Types

- Cattail marsh
- Floodplain forest
- Lowland hardwood forest
- Maple-basswood forest
- Mixed emergent marsh
- Mixed hardwood swamp
- Wet prairie
- Willow swamp

Lilydale Regional Park Boundary



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2000 0 2000 Feet



intact native plant communities as well as conducting management of “semi-natural” vegetation cover types to foster improvement of native species composition and function.

The management goals for all cover types and management areas include:

- Maintain or improve native (natural) plant communities
- Manage semi-natural cover types towards dominance of native plant species
- Avoid or minimize impacts to existing natural areas during park development
- Plan for infrastructure that enables cost effective natural area management where trails can serve as firebreaks and/or access points for on-the-ground management
- Provide recreational and educational opportunities compatible with sustaining natural community function and integrity
- Carry out surface water and infrastructure planning both within the park and outside the park by engaging appropriate stakeholders to reduce erosion issues and for improved water quality.

Appendix A

Planned Site Capacities				
<i>Activity</i>	<i>Area/Sites</i>	<i>Users/Area</i>	<i>Turnover Rate/Day</i>	<i>Users/Day</i>
Fishing Pier	1	20	4	80
Lakeshore fishing	4	3	4	48
Canoe launch	1	2	15	30
Lakeshore amphitheater	1	50	1	50
Group Camp Sites	3	12	1	36
Picnic tables	11	6	2	132
Picnic shelters (2 with 8 tables each)	16	6	2	192
River boating	1	75	2	150
Interpretive activity	7	3	5	105
Dog Park	8.5	5	8	340
Regional Trail Use	1	27	6	162
Total				1325

Planned Parking Capacities			
	<i>Users</i>	<i>Persons/Car</i>	<i>Estimated Parking Needed</i>
Fishing Pier	20	2	10
Lakeshore Fishing	12	2	6
Canoe launch	2	2	1
Lakeshore Amphitheater	50	3	17
Group Camp Sites	36	4	9
Picnic Tables	66	3	22
Picnic Shelters	96	3	32
River boating	75	4	19
Interpretive Activity	21	2	11
Dog Park	42.5	1.5	28
Regional Trail Use	27	2	14
Total Parking Required (summer weekend day estimate)			168

Planned Parking Spaces		
	<i>Parking Provided</i>	<i>Comments/Notes</i>
Existing Parking		
Existing Parking Lot at DNR Boat Launch		Existing parking lot accommodates 48 boat trailer parking.
Boat trailer parking stalls provided	24	Reconfigured parking lot will maintain 24 existing boat trailer parking stalls.
Standard parking stalls provided	50	Reconfigured parking lot will redesign 24 existing boat trail parking stalls into standard car/truck parking for proposed dog park and regional trail use.
Proposed Parking		
Proposed Fossil Ground Parking Lot (cars/trucks)	20	Standard parking stalls.
Proposed Fossil Ground Parking Lot (bus)	4	Bus parking provided for school groups.
Proposed Canoe Launch Parking	5	Parking provided for canoe launch and accessible access to Pickerel Lake.
Proposed Picnic Shelter Parking Lot	65	No bus parking provided.
Total	168	

Note: Planned Site Capacities estimates were projected from data gathered by the Metropolitan Council through the *2008 Metropolitan Council Annual Use Estimate of the Metropolitan Regional Park System* and the *Metropolitan Council 2008 Parks and Trails Survey*. Projections were based on related activity usages in existing regional parks.

Planned capacities based on summer weekend day usage.