



# BDE MAKA SKA REFECTORY REBUILD

## EXISTING CONDITIONS ASSESSMENT

JANUARY 2021

# 1 Project Understanding

Located at the intersection of East Bde Maka Ska Parkway and West Lake Street, the Bde Maka Ska Refectory site is a major entrance to the Minneapolis Chain of Lakes Regional Park and one of the most highly visited locations in the Minneapolis Park and Recreation Board park system. The historic Refectory building, a central site feature and park destination, was lost to fire in 2019.

With the recently passed Bde Maka Ska-Harriet Master Plan as a guide, this project will rebuild the Refectory to include the amenities lost during the 2019 fire, ADA compliant all-gender restroom facilities and an additional auxiliary space to be determined through the community engagement process. Additionally, the project will propose design features and future strategies for the surrounding acre site including visitor patio spaces, waterfront access, and improved multimodal circulation.

The project began in January 2021 with the development of site concepts and is anticipated to continue through final construction in mid-2023.

Figure 1 | Project Location

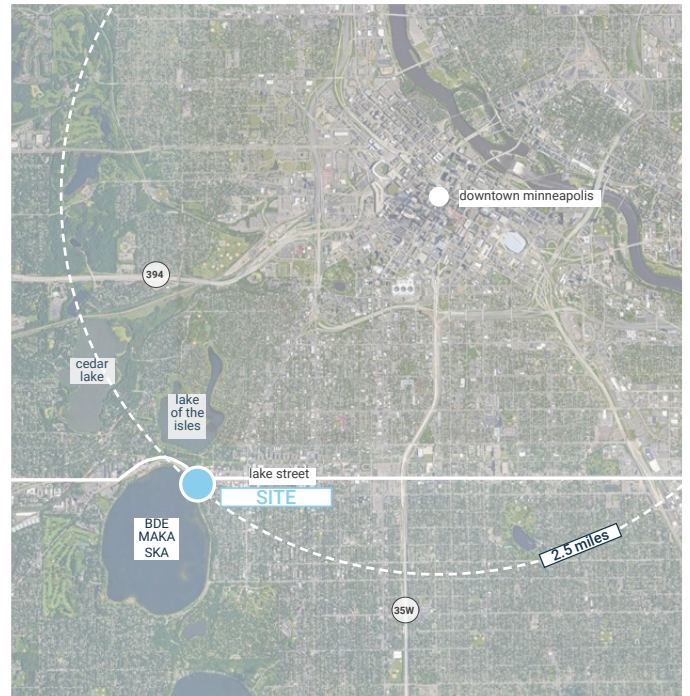
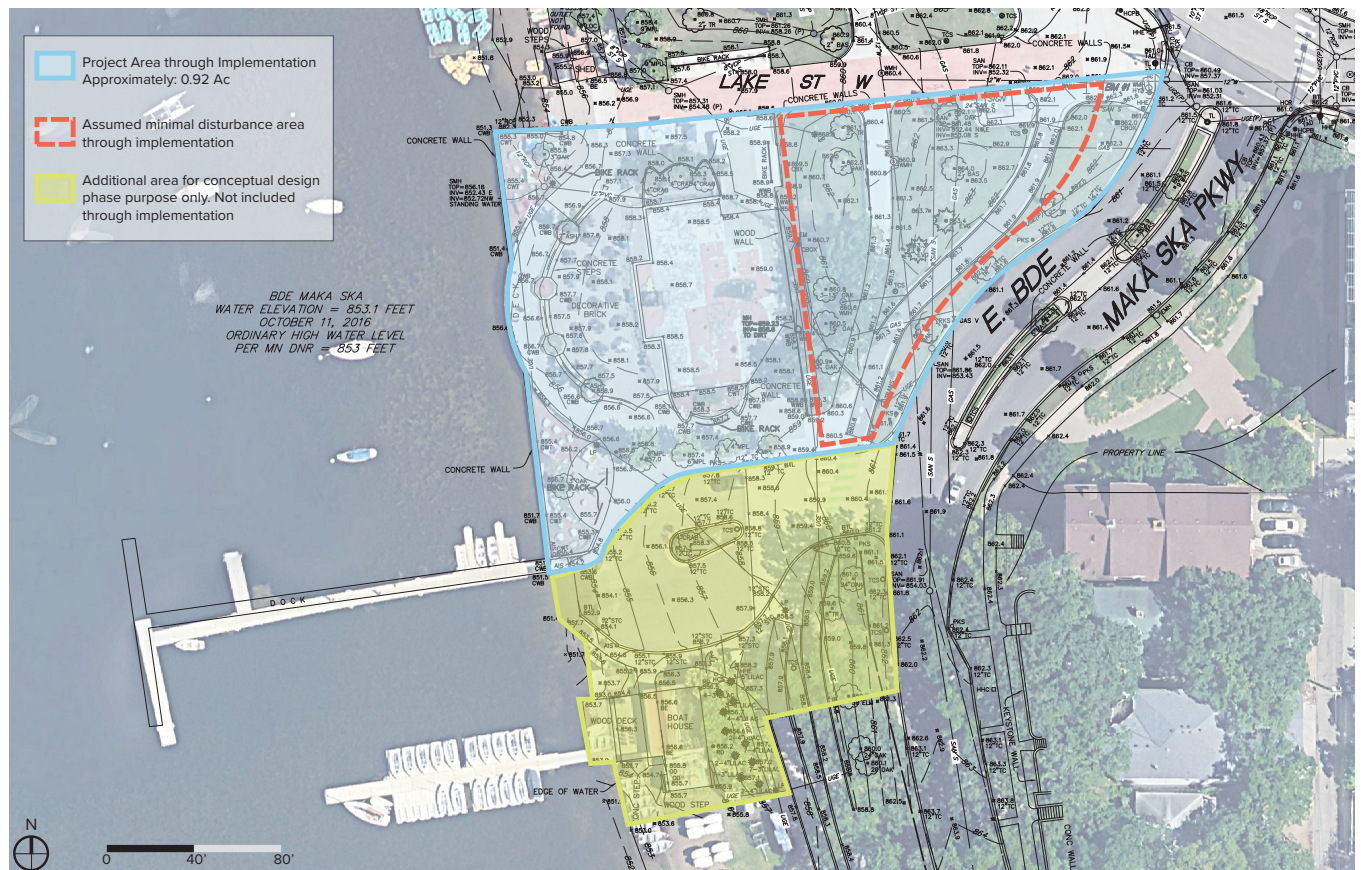


Figure 2 | Project Extents



## Master Plan

The Master Plan for this site was approved as part of the larger Bde Maka Ska-Harriet Master Plan by the Minneapolis Park and Recreation Board (MPRB) Board of Commissioners on May 3, 2017. Following extensive community engagement and visioning, the Master Plan identified the Northeast corner of Bde Maka Ska – which includes this project site – as a gateway to the Minneapolis Chain of Lakes Regional Park and Grand Rounds trail system. In addition to the preservation of the Refectory, recommendations from the Master Plan that will be implemented in the design of the site include improved multimodal circulation, construction of an all-gender restroom, and improved waterfront access for pedestrians. This project will also consider the inclusion of an auxiliary space that will be defined through the community engagement process. This space could be responsive to the Master Plan recommendation that a visitor center or location for visitor services be included in this general area of Bde Maka Ska. Though the Master Plan also identified the relocation of the sailing school away from the Refectory, the project will not include this move at this time. The design process will consider the site with these uses existing both in place and relocated.

Importantly, the conceptual design and future design elements will be responsive to the vision and guiding principles identified in the Master Plan. These include:

**Stewardship** Care for what exists before introducing new things. Use current funding to resolve existing problems, while recognizing the need to accommodate future changes.

**Identity** Recognize Bde Maka Ska and Lake Harriet as part of a regional destination and of the urban fabric of Minneapolis. Acknowledge that each park has a unique character and energy.

**Ecology** Invest in practices that improve the environmental health of the lakes and parkland.

**Balance** Mitigate the long-term impact of human use on park resources and consider use impacts on park resources as new improvements are planned.

**Memory** Reveal untold stories and share collective memories as a defining experience of the lakes.

**Equity** Provide a comfortable experience for people with diverse abilities and needs and for all races and ethnicities.

**Resiliency and Responsiveness** Build resiliency and flexibility into improvements to respond to climate change and changes in the demographics of the region. Use technological innovations to address issues and improve communication with the public.



Image 1 | Master Plan rendering of proposed infrastructure improvements. Source: MPRB, 2017

## 2016 Facilities Assessment

In 2016, a Facilities Assessment was conducted to identify deficiencies and provide the background needed to develop priorities for future planning work for the pre-fire Bde Maka Ska Refectory. The architecture, mechanical, electrical and plumbing systems of the existing facility were all assessed at that time, as well as the surrounding site conditions.

The need for improved accessibility and circulation were major findings of the assessment. This included needed regrading at the visitor drop-off location and other areas around the former building to meet Minnesota Accessibility Code requirements for slope and cross-slope. Significant site circulation challenges occur just south of the project area, where several site functions are served by a common drive aisle, which itself crosses both pedestrian and bicycle pathways serving the Grand Rounds. This drive aisle functions as the main boat launch, drop-off point for the Minneapolis Sailing School, watercraft inspection point for the Aquatic Invasive Species program, delivery and waste management access to the Refectory, and emergency vehicle access to the site. Increased bicycle parking, increased shade, and improved restroom facilities were also included in the assessment recommendations.

Figure 3 | Master Plan : Northeast Bde Maka Ska Focus Area

Source: MPRB, 2017



**Northeast Bde Maka Ska Focus Area Recommendations**

- 1. Reduce congestion and improve safety for pedestrians and bicyclists while preserving the energy and character of the area.
- 2. Remove and relocate away from this area the two boat launches currently flanking the Calhoun Refectory (currently Tin Fish).
- 3. Relocate the sailing school and yacht club away from this area once the northwest corner is developed as a recreational hub. Retain the dock and buoy field.
- 4. Relocate rental concessionaire (currently Wheel Fun) to south side of the Calhoun Refectory once the sailing school and yacht club are relocated.
- 5. Construct an all-gender restroom and storage building.
- 6. Add an at grade, shared-use trail on the west side of the intersection of Lake Street and East Calhoun Parkway.
- 7. Create a gateway or enhancements in the triangle between eastbound and westbound Lake Street.

8. Replace the turnaround at the existing boat launch with a curbside drop-off area that includes designated spaces for deliveries and accessible parking.

9. Restore historic objects and structures (WPA wall along the lagoon, Naval and Marine Corps Memorial Tablets and the World War I Memorial Mast).

10. Improve waterfront access for pedestrians.

**WPA WALL NOT YET RESTORED**

Completed through Bde Maka Ska-Harriet Trail and Access Improvements project

Scoped as part of Bde Maka Ska Refectory Rebuild Project

# 2 Context and Existing Conditions

## Site History

The project site area is the ancestral home to Indigenous and Native American communities. Bde Maka Ska translates to Lake White Earth in the Dakota language. In the early 1800s, as U.S. military presence increased with the construction of Fort Snelling, the lake was then named Lake Calhoun after Secretary of War John C. Calhoun, a South Carolina statesman, former vice president, senator, secretary of state and proponent of slavery. Over a period of time in 2017-2018 the name of the lake was officially changed to Bde Maka Ska, a decision which was ultimately upheld by the Minnesota Supreme Court in 2020.

The land that would become the Minneapolis Chain of Lakes Regional Park - including this site - was acquired by the Minneapolis Board of Park Commissioners (BPC) in the early 1900's during Captain William Morse Berry's tenure as Superintendent of Parks. The public opening of the Minneapolis Chain of Lakes Regional Park was celebrated in 1911. This site has seen continued use since.

## Building

The previous Refectory building was originally constructed in 1933 and renovated in 1988. It was a single-story Spanish Revival style structure constructed of heavy timber and concrete block. In May of 2019, a fire severely damaged the Refectory building, at which time the site was secured, erosion control measures were put in place, and initial cleanup began. The structure remaining above grade was demolished. The remaining building foundation is currently covered with asphalt.

## Trails project

In 2017, the MPRB completed the Bde Maka Ska-Harriet Trails and Access Improvements project which rehabilitated .75 miles of trail, rebuilt 82 ADA accessible pedestrian ramps, and improved trail circulation at key location around both Bde Maka Ska and Lake Harriet. Of note at northeast Bde Maka Ska, both the pedestrian and bicycle trail were rebuilt further away from the lake, the trail crossing at the boat launch was improved, and a new at-grade trail crossing of West Lake Street/Lagoon was built on the west side of East Bde Maka Ska Parkway. The at-grade trail crossing included new signal infrastructure in coordination with the City of Minneapolis and Hennepin County.

## Drinking fountain/utility project

In the summer of 2020, a new drinking fountain was installed and utilities (sanitary sewer and water line for the former Refectory) were disconnected from the old Refectory building site. The new drinking fountain is served by a ¾" copper line and consists of a high/low fountain with a dog bowl, bottle filler, and internal spigot. This drinking fountain will operate seasonally.

## Environmental Assessment (ESA)

In 2020, a Phase I Environmental Site Assessment was conducted for the site, which revealed no evidence of *Recognized Environmental Conditions*, either current, historic, or controlled. The study also revealed no de minimis conditions present on the site, and report recommendations state that no additional environmental assessment of the subject property is warranted.

## Stormwater Management

There currently is no stormwater management on the existing site. The sites surface drains uncontrolled and untreated to the city storm sewer system which drains to Bde Maka Ska.

The City of Minneapolis, Minnehaha Creek Watershed District and the Minnesota Pollution Control Agency are governing units for onsite stormwater management practices for this project. Since the project will need to adhere to multiple regulatory requirements, the most stringent requirements within each category shall govern so all agency requirements are met.

## Development Controls

### City of Minneapolis

#### Zoning

The project site has a designation of R1 under the City of Minneapolis Zoning Code, but falls within the City's Shoreland Overlay District (SH) and Built Form Overlay: BPPA Parks District

#### Setbacks:

- Front: 25'-0"
- Rear: 50'-0" from Ordinary High Water Mark
- Interior Side: 10'-0"
- Corner Side: 12'-0"

#### Built Form Requirements:

- Maximum Floor-to-Area Ratio: 0.5
- Minimum Floor-to-Area Ratio: None
- Maximum Building Height: 2.5 stories, 35'-0"
- Max Lot Coverage: 45%
- Max Impervious Surface Coverage: 45%

#### Stormwater

The City of Minneapolis stormwater management rule applies to any site that disturbs more than one acre.

Site development/redevelopment projects are required to meet the following stormwater standards:

- Rate Control – Proposed runoff shall not exceed existing runoff rates for the 2-year, 10-year and 100-year 24-hour storm events within the drainage area or watershed.
- Water Quality – 70% total suspended solids is required.
- The City of Minneapolis is currently modifying their stormwater management requirements for development sites. The above requirements are in effect as of January 2021 but may change when the project design begins. These requirements should be reviewed for updates and/or modifications.

**Current status:** It is unknown if one acre of site will be disturbed and stormwater management is required on the project.

A city erosion control permit is also required if a project disturbs 5,000 square feet or 50 cubic yards of earthwork.

**Current status:** The project will disturb more than 5,000 square feet and a city erosion control permit will be required.

### Department of Natural Resources

The Minnesota Department of Natural Resources (DNR) designates the project site as Basin Shoreland Classification: General Development. However, as the City of Minneapolis has a shoreland ordinance in place for this site, that ordinance serves as the controlling zoning standard for development in that district. While the DNR does not review and approve development associated with this project, they may provide comments on proposed development.

### Minnehaha Creek Watershed District

The Minnehaha Creek Watershed District (MCWD) governs various items as it affects surface waters within the district. Site development/redevelopment projects are required to meet the following standards and permits.

#### Stormwater Management permit is required:

- If the project increases impervious area or changes the water course, increases peak runoff rate or affects water quality.
- If the proposed runoff shall not exceed existing rates for the 1-year, 10-year and 100-year 24 hour events within the drainage area or watershed.
- If the site is five acres or more, the project is exempt from onsite stormwater management requirements if the redevelopment disturbs less than 40 percent of the site and results in at least ten percent reduction in impervious surface.

**Current status:** The project will be required to meet MCWD stormwater management standards.

#### Erosion control permit is required:

- The project exposes 5,000 square feet of soil and/or grading
- The project is excavating, filling, or on-site storing of 50 cubic yards of soil

**Current status:** The project will disturb more than 5,000 square feet and a MCWD erosion control permit will be required

#### Floodplain alteration permit is required:

- If the project is altering or filling land below the 100-year high water elevation of a water body

**Current status:** Unknown at this time if there will be alterations below the 100-year water level.

#### Wetland Protection permit is required:

- If the project is draining, filling, or excavating of a wetland or any project that already requires a permit under the Stormwater Management or Waterbody Crossings & Structures rule, if there is a wetland on the property
- Building on undeveloped lots or tear down/rebuild projects that increases the amount of hard surface

**Current status:** This permit is not required as there are no wetlands on this site.

#### Dredging permit is required:

- If the project is dredging in the beds, banks, or shores of any public water, basin, or watercourse

**Current status:** The project does not anticipate dredging.

#### Shoreline and Streambank Stabilization permit is required:

- If the project is altering any shoreline or streambank. This includes riprap, biological stabilization, bioengineering, retaining walls, sheet piling, and boat ramps
- The project is placing sand below the Ordinary High Water Level (OHW) of any water body

**Current status:** Unknown at this time if shoreline improvements will be needed.

#### Waterbody Crossings & Structures permit is required:

- If the project is placing or replacing roads, highways, utilities or other structures in contact with the bed or bank of any water body
- The project is building a bridge or related crossing of any water body
- The project is enclosing a water body within a pipe
- The project is directional boring underneath a waterbody

**Current status:** Unknown at this time if there will be structures within the waterbody.

#### Appropriations Rule permit is required:

- All projects within Hennepin County that take up to 10,000 gallons per day and up to 1,000,000 gallons per year of surface water for a nonessential use from:
  - A public water basin or wetland that is less than 500 acres in surface size
  - A protected watercourse that has a drainage area of less than 50 square miles

**Current status:** This permit is not applicable as the project will not be utilizing water from Bde Maka Ska.

#### Minnesota Pollution Control Agency (MPCA)

The Minnesota Pollution Control Agency (MPCA) requires permanent stormwater management to meet their requirements if the amount of new impervious area will be 1.0 acre or more.

The MPCA stormwater management standards are as follows:

- Rate Control – Proposed runoff shall not exceed existing 5.66 cubic feet per second for the 100-yr 24-hour storm event.
- Water Quality – 80% total suspended solids removal is required.
- Water Quality Volume Control – 1" abstracted from the impervious areas on site.
- Drawdown Time – All infiltration systems require the system to drawdown within 48 hours of the peak rain event.

**Current status:** The project will not add one acre or more of impervious and MPCA stormwater standards will not govern on this project.

If the site disturbance is one acre or more, an NPDES permit and a Storm Water Pollution Prevention Plan (SWPPP) will be required.

**Current status:** Unknown.



Image 2 | Heyate Oturwe, painted by George Catlin between 1835–1836

Source: Minnesota Historical Society

## Historic Resources Understanding

The project site does not carry either local or national historic designations, and the project is not federally funded. Therefore, there is no requirement for formal Historic Preservation Commission (HPC) or State Historic Preservation Office (SHPO) review or approval. However, Bde Maka Ska is part of the Minneapolis Chain of Lakes Regional Park and the Grand Rounds National Scenic Byway, which are recognized locally and nationally as potentially eligible for inclusion on the National Register of Historic Places, and the project site should be considered in that context.

There are other known historic elements in close proximity to the project study area including the World War I memorial mast, Marine Corps memorial tablets and shoreline walls constructed by the Works Progress Administration in the 1940s. While these are located outside of the study area, potential impacts to these features should be identified and controlled during the design and future construction.

Importantly, the site is the ancestral home to Indignous and Native American communities. The history of this place and connection to this story are important. Continued coordination with Indignous and Native American organizations, stakeholders and broader community members will be a central to the conceptual design process.

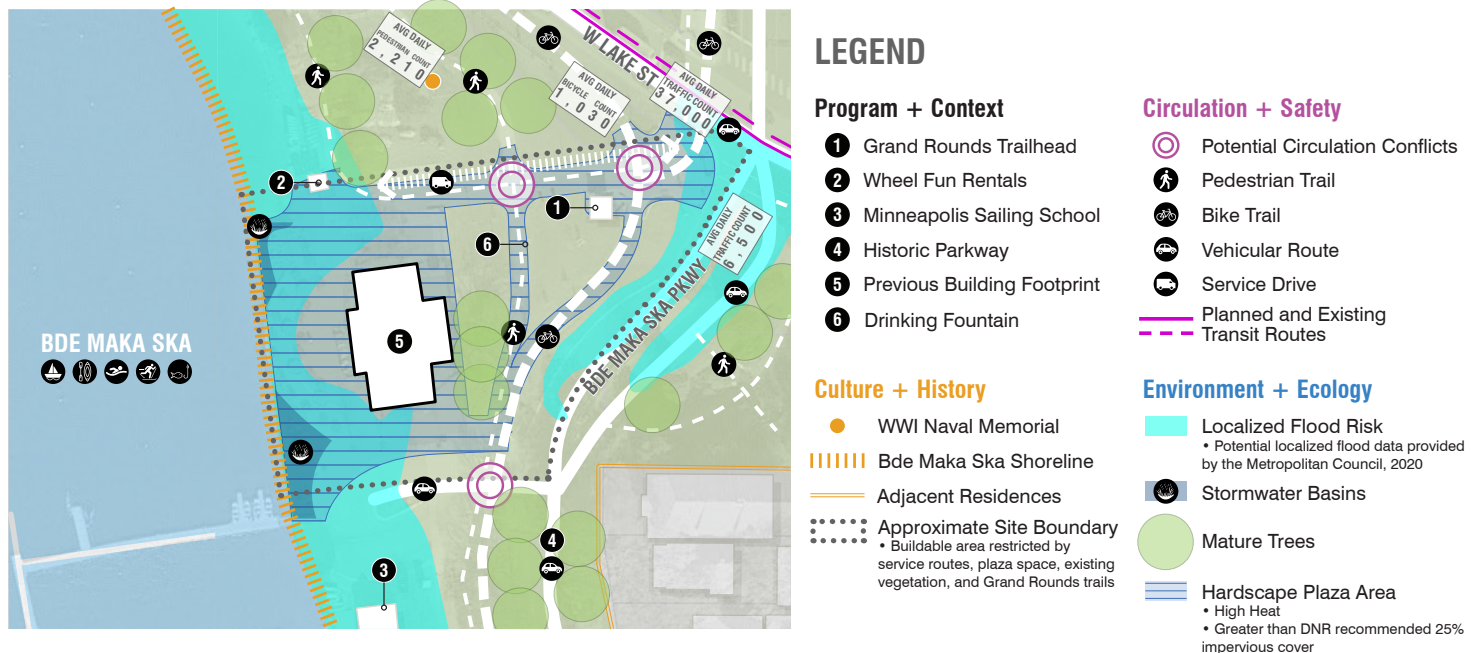
## Climate Considerations

The climate of Minneapolis is characterized by its frigid winters and hot, humid summers. Normal daily temperature range from 12 degrees F in the January to 74 degrees F in July. The current site is highly exposed to climatic conditions. The lake winds are of particular concern for the visitor experience. The dominant winter winds arrive from the North and Northeast while summer winds are predominately out of the south and southeast.

Climate change projections for Minneapolis include increasing daily temperatures, increased annual precipitation, and increased frequency of severe weather events. Precipitation is a particular concern for the region, with a projected 30% increase in annual precipitation by the end of this century. Further, winters are expected to see increased snow levels and warmer temperatures. This could improve winter recreation potential while increasing spring flood risk for the region. This project will be responsive to these changes by designing the site to accept higher water levels and flood events, aligning buildings and structures to control impact of climatic conditions to improve the user experience, planning for all-season use, and protecting mature vegetation on site.



Figure 4 | Existing Site Conditions



## Circulation

The high level of activity and mix of programmatic features creates unique user conflicts. While the recent trail realignments addressed some of the circulation conflicts around the multimodal trails on the eastern edge of the site, conflicts still remain in the rest of the site. A point of circulation conflict occurs just south of the project area, where several site functions are served by a common drive aisle, which itself crosses both pedestrian and bicycle pathways serving the Grand Rounds. This drive aisle functions as the main boat launch, drop-off point for the Minneapolis Sailing School, watercraft inspection point for the Aquatic Invasive Species program, delivery and waste management access to the Refectory, and emergency vehicle access to the site. Students accessing at the Sailing School on foot cross the bicycle and pedestrian pathways to access the school, as well as comingle with vehicular traffic when accessing the Refectory, restrooms, and drinking fountains.

During busy times, the customer queue for Wheel Fun Rentals extends from the rental kiosk, eastward along the promenade toward the intersection of W Lake Street and East Bde Maka Ska Parkway. This promenade crosses two pedestrian pathways and one bicycle pathway, and is also used for trucks servicing the MPRB’s weed harvester up to three times per day.

## Safety and Security

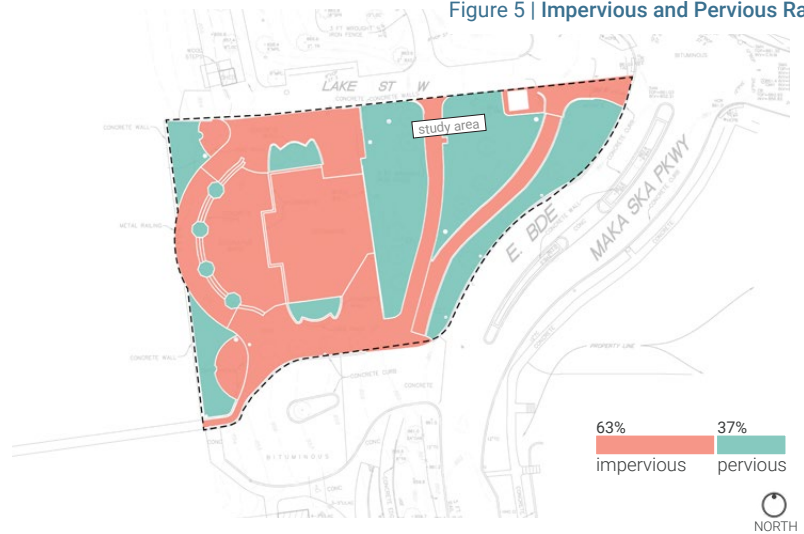
The site’s high profile location, unique mix of programming, and access to the shoreline make it a highly used and trafficked site. Multimodal user conflicts are an ongoing concern for the site. Other safety concerns include insufficient lighting and obstructed lines of sight from all directions, including from the lake. The improvements planned as part of this project will increase safety for users and staff alike.

Figure 5 | Impervious and Pervious Ratio

## Land Cover

The 24965 sq ft site is composed of 37% pervious and 63% impervious surfacing. This is above the DNR *recommendation* of 25% impervious cover for sites adjacent to lakes and streams and the maximum Impervious Surface Coverage threshold of 45% for sites located within the Shoreland Overlay District (SH) *required* by the City of Minneapolis.

The tree canopy - measured from aerial imagery from June 2020 - is estimated at 11% coverage. This will increase with the maturation of newly planted trees located the eastern 1/3 of the site.

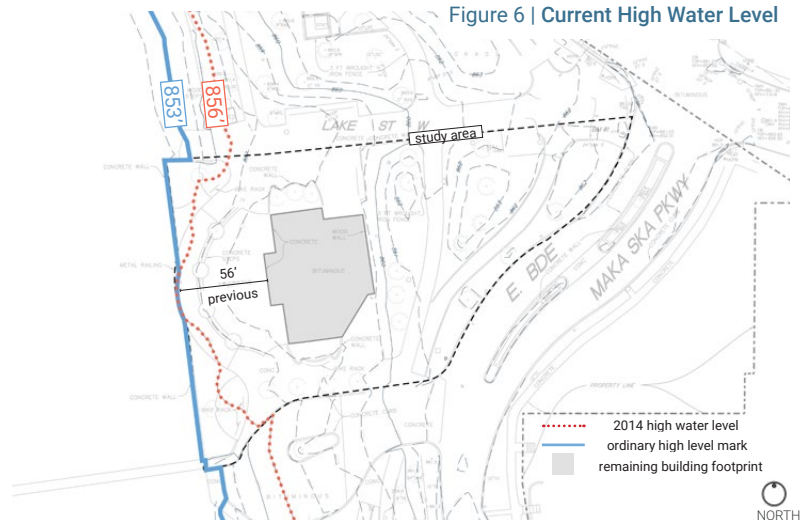


## Water Levels

Per the MN DNR, the ordinary high water level of Bde Maka Ska stands at 853'. However, the Minneapolis Chain of Lakes Regional Park - reflecting larger regional patterns - has recorded a pattern of increased high water levels over the last decade. The MN DNR recorded a peak high water level of 855.8' during the 2014 season. According to the Metropolitan Council's Potential Localized Flood Risk data set (2018), the flooding levels could reach 858' on the site (Figure 4). To support the resiliency of the site in coming years, the potential high water levels should be reviewed and planned for in the site design.

The development area currently abuts the water edge. The the previous building footprint was set back 60' from water edge and 5' above the ordinary high water level. This is compliant with the required setback for the shoreline over-lay district for the City of Minneapolis.

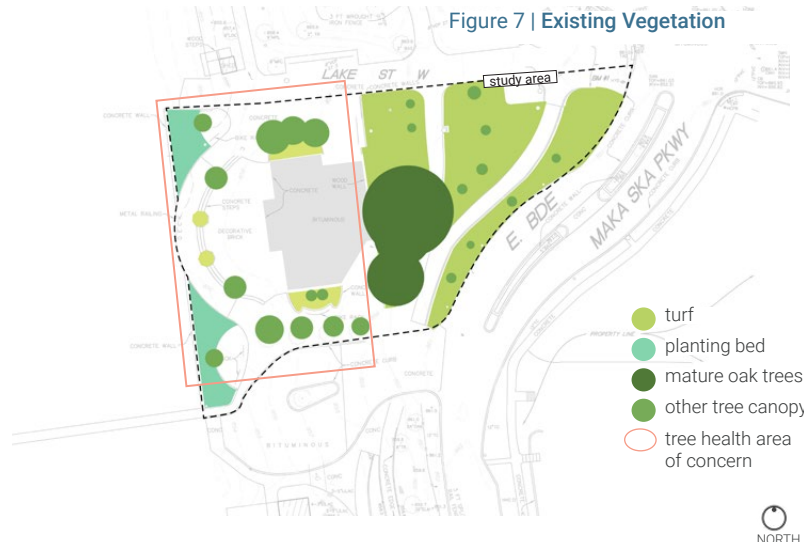
Figure 6 | Current High Water Level



## Vegetation

While the site is currently dominated with impervious surfaces, there is highly valuable vegetation located on the site. Three mature oaks located east of the previous building footprint are estimated to be over 100-years old and provide cooling, character, habitat, and other ecological values to the site. The trees located on western half of the site including the crab apple trees adjacent to the previous building footprint, the maple trees on the southern edge of the site, and the ash trees located in planters along the shoreline show signs of stress attributed to an insufficient growing area. Other trees on site include Ash, Maple, and Basswood. Many are immature and < 4" caliper, having been planted in 2018 during the construction for the trail realignment.

Figure 7 | Existing Vegetation



## Utilities

Figure 8 | Watermain Location

### Watermain

There is a 6" city watermain located to the east of the proposed site. To the north this waterline connects to a 12" city watermain that connects to West Lake Street. There is a drinking water fountain located at the southeast intersection of the walking path and the promenade. An existing water service to the old refractory extends from the 6" main to the west. The existing water service was not installed below the frost depth, was not intended for winter use and was shut down after the fall season.

A new domestic and fire water service will be required for the refractory building and will be buried with 7.5-8 feet of cover which will allow for year round use.

### Sanitary Sewer

There is 9" city sanitary sewer located on the east side of the site. There is a manhole located in the green space on the southeast corner of the pedestrian path and promenade. There is a second manhole located in the green space behind the roadway curb located to the east of the site. The existing sewer is approximately 8-10 feet deep. The 9" sewer connects to a Met Council 24" VCP sewer line that serves sewer from the northwest and flows to the east to sewer main located in West Lake Street.

A new service will be required for the Refectory building. This service line will be buried with 6' of cover and connect to the existing manhole to the east of the site.

### Storm Sewer

There's a 12" RCP storm sewer located at the northeast corner of the site. A manhole is located in the landscape area off the deck connection that is approximately 4' deep. The survey lists this manhole as holding water. This 12" pipe discharges to Bde Maka Ska at the access point.

There's an 8" VCP city storm sewer located on the north side of the site near the shed. A manhole is located in the paved access area that is approximately 3' deep. This pipe discharges to Bde Maka Ska at the access point.

There is an 18" RCP city storm sewer located in West Lake Street. There are curb inlet catchbasins within the intersections of Bde Maka Ska Parkway, Knox Avenue and West Lake Street. These sewers flow to the east to an 18" pipe which connects to a 30" storm sewer located in Knox Avenue S.

New storm sewer services from the Refectory will be required for the roof drainage. This storm sewer will discharge to a stormwater treatment system on the site which will discharge to the lake.



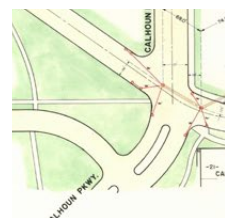
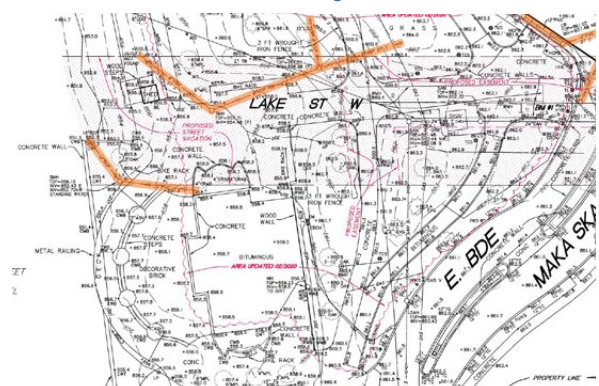
Figure 9 | Sanitary Sewer Location



City of Minneapolis Sanitary Sewer As-builts

MCES Sanitary Sewer As-builts

Figure 10 | Storm Sewer Location



City of Minneapolis Sanitary Sewer As-builts

## Gas

There is a 12" steel Class 2 Centerpoint Energy gas line located on the east side of the site that runs from the north to West Lake Street. There's a connection to this 12" line that runs south and there is a service connection on the south side of the site.

A new gas service will be required for the refractory.

## Electrical Utilities

There are underground electrical lines, conduits, light poles, transformers, electrical boxes and other electrical equipment on the east and west sides of the site. The primary electrical service is located to the east.

A new electrical service will be required for the refractory.

## Structural and Geotechnical Conditions

The soils at the project site generally consist of a thin layer of topsoil over native glacial outwash. The vegetation and topsoil are compressible, and the fill does contain some debris, requiring removal and replacement with suitable compacted engineered fill. This assumes a net allowable soil bearing pressure of 3,000 psf, which is adequate to support a two-story building. Soils near the existing boat launch contain native sands below the topsoil which are generally free-draining, non-frost susceptible materials and are generally well suited for slab support.

Groundwater exists at depths ranging from about 4 to 9 feet below the ground surface. As structural foundations will likely bear about 5 feet below grade for frost protection, and utility installations could extend to depths ranging from about 7 to 10 feet below grade, groundwater will likely be encountered, requiring dewatering.

Remnants of the former structure, including foundations, foundation walls, floor slabs and underground utilities still exist below grade at the former building footprint, and should be removed from within the proposed building, utility and oversize areas. Additionally, all vegetation, topsoil, fill and any other soft otherwise unsuitable materials should be removed from below the proposed building and oversize areas.

Figure 11 | Gas Line Location

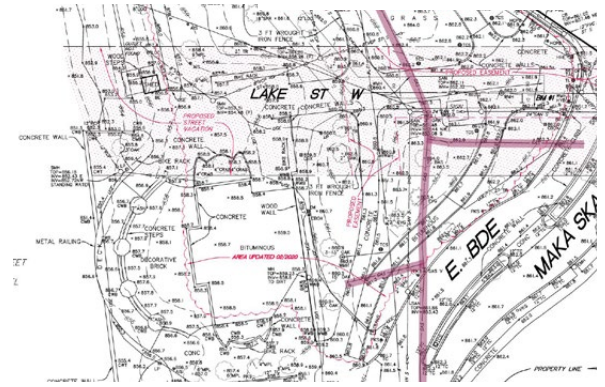


Figure 12 | Electrical Line Location

