December 2022 version

Environmental Assessment Worksheet

This most recent Environmental Assessment Worksheet (EAW) form and guidance documents are available at the Environmental Quality Board's website at**:** https://www.eqb.state.mn.us**/** The EAW form provides information about a project that may have the potential for significant environmental effects. Guidance documents provide additional detail and links to resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item or can be addressed collectively under EAW Item 21.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. **Project title:** Mississippi River Learning Center

2. **Proposer:**

Contact person: Anne Gardner; City of Saint Paul
Title: Lead Landscape Architect
Address: 25th W. Fourth Street
City, State, ZIP: Saint Paul, MN 55102
Phone: (651) 266-6421
Email: Anne.Gardner@ci.st.paul.mn.us

3. **RGU:**

Contact person: Josh Williams; City of Saint Paul
Title: Principal Planner
Address: 25th W. Fourth Street Suite 1400
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4. **Reason for EAW Preparation:** (check one)

Required:
☐ EIS Scoping
☐ Mandatory EAW

Discretionary:
☐ Citizen petition
☒ RGU discretion
☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

5. **Project Location:**

- *County:* Ramsey County
- *City/Township*: City of Saint Paul
- *PLS Location (¼, ¼, Section, Township, Range):*
    - SENE, NESE, NWSE, NESW of Section 21, Range 23 North, Township 28
    - SWNW of Section 22, Range 23 North, Township 28
- *Watershed (81 major watershed scale):* Mississippi River – Twin Cities 07010206
- *GPS Coordinates:* 44.895877/-93.169592
- *Tax Parcel Number*:

- 212823140022, 212823410002, 212823310013, 212823420016, 212823320024, 222823240001, 222823320001, 212823410003

At a minimum attach each of the following to the EAW:

- County map showing the general location of the project;
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopyacceptable); and
- Site plans showing all significant project and natural features. Pre-construction site plan andpost-construction site plan.
- List of data sources, models, and other resources (from the Item-by-Item Guidance: *Climate Adaptation and Resilience* or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project duringthe life of the project (as detailed below in item 7. Climate Adaptation and Resilience).

6. Project Description:

a. *Provide the brief project summary to be published in the EQB Monitor, (approximately 50words).*

The City of Saint Paul is proposing to construct the Mississippi River Learning Center, which would include a multi-use, river-focused space with the Welcome Station atop the bluff along Shepard Road next to Crosby Farm Regional Park. The center would provide year-round environmental learning opportunities and outdoor recreation experiences. The project is located within the City of Saint Paul, Ramsey County, Minnesota.

b. *Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipmentor industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities*

Project Partners

The Mississippi River Learning Center project (project) would redevelop an underutilized 25-acre property along the Mississippi River to create a river exploration and learning center. The project partners include the City of Saint Paul, Great River Passage Conservancy (GRPC), National Park Service (NPS), and Mississippi Park Connection. The City of Saint Paul is the owner of the site and project manager. Great River Passage Conservancy supports the community's connection to the Mississippi River and is charged with private fundraising and strategic project development. Mississippi Park Connection is the non-profit partner to NPS and supports MNRRA programming and research. They will provide year-round programming at the site and will be the primary tenant. The NPS oversees the Mississippi National River and Recreation Area (MNRRA), and is charged to protect, preserve, and enhance the nationally significant historical, recreational, scenic, cultural, natural, economic, and scientific heritage of the waters and land of the Mississippi River Corridor within the Saint Paul-

Minneapolis Metropolitan Area.

Site Background

The project area is located along the north bank of the Mississippi River in Saint Paul, Minnesota. It is within the sacred area known as Bdote, where the Mississippi River meets the Minnesota River. The Dakota people have historically lived and traveled in these interconnected waterways and still do, and the area remains an important gathering and sacred ceremonial site.

In the 1950s, two bays were constructed along the river channel to create a marina along the Mississippi River. These bays are referred to as the East Bay and the West Bay (Figure 2). In 1969, Clayton Rein and a partner acquired the property within the project area. They planned to build two 24-story luxury apartment buildings, a 469-car parking ramp, and an amenity building with a restaurant, swimming pool, and sauna. Construction began on the development in 1973 with vegetation removal, foundation excavation, and pier installation. By 1974, construction on the project was halted. After construction was stopped, vegetation was allowed to regrow naturally on site, and the foundation pits and piers remain on site.

The Watergate Marina currently operates the marina in the East Bay. The West Bay no longer operates as a marina and has accumulated sediment that would inhibit large boat traffic. The site also includes a network of trails that are available to the public for hiking, running, and biking. This includes a continuous trail along the river that connects Crosby Farm to Hidden Falls. The parks are known locally as two separate parks but are actually one large regional park.

Project Description

The project would include the construction of up to six buildings, including a Welcome Station, River Learning Center (RLC), Boathouse, Storage Facility, Marina rental office with cafe, and a Marina Maintenance building (Figure *2*). In addition, the project would include parking areas, an outdoor covered pavilion, multiple-use walking trails, and restoration activities to improve the natural environment within the project area. Construction would be broken down into the following development areas (DA), as depicted in Figure *3*.

- DA-1 Utilities
- DA-2 River Learning Center
- DA-3 Marina
- DA-4 Welcome Station

DA -1 Utilities

DA-1 includes the installation of project utilities. This would include the installation of the proposed sanitary sewer pipeline and the water pipeline. Wastewater from the proposed project buildings would be conveyed via subsurface sanitary sewer to the existing City of Saint Paul sanitary sewer system, which is then directed to the Metropolitan Council Environmental Services regional treatment system. The RLC campus and Marina would gravity flow to a central point and then be conveyed via a lift station that would be located near Crosby Fram Road and connect with the Welcome Station sanitary sewer service.

From there, the wastewater would be conveyed to public infrastructure along existing Shepard Road via lift station to an existing manhole within Youngman Avenue West (Figure *2*).

The project would source potable water from Saint Paul Regional Water Services. A water pipe will be constructed from the RLC campus and Marina buildings to the Welcome Station along Crosby Farm Road. From the Welcome Station the water pipe could connect to two existing water mains: one at the intersection of Gannon Road and Shepard, and one at the intersection of South Davern Street.

The wastewater and watermain would be installed using an open trench method, with a trench box to reduce the size of the excavation. The contractor would begin construction by removing vegetation within the construction limits and stripping topsoil to a minimum depth of 12 inches. Excavation typically occurs using a backhoe excavator or a rotary wheel ditching machine. Some small utilities such as electrical and telecommunications could potentially have small diameter conduit directionally drilled.

DA -2 River Learning Center

DFA-2 includes construction of the RLC, Boathouse, Storage building, outdoor covered pavilion, multiple-use walking trails, and parking areas. The RLC building would be the center of the park and will include flexible space for classrooms and events. Public restrooms and a kitchenette would be available on the ground floor. A deck would overlook the smaller inlet and river beyond and provide space for gathering and learning.

The Boathouse will store human-powered watercraft, including canoes and kayaks, which will be available for educational use by the public through the project partner programming and/or canoe rentals. An Americans with Disability Act (ADA) compliant path would be constructed from the boathouse to a dock that would provide access to the West Bay (recreation bay). The dock would provide access to the river for launching watercraft and for vehicles to drop off supplies.

The project would also include construction of ADA paths through the property. The paths would connect the proposed buildings and provide access to the proposed outdoor project features (Figure *2*). The paths would include asphalt trails in addition to natural materials such as stone pavers or gravel.

DA -3 Marina

The Watergate Marina currently operates within the project area and includes 160 slips that operate in the East Bay. The Marina also offers amenities such as a ship store, fuel, and pump-out services. DA-3 would include the relocation of the existing marina to the eastern edge of the East Bay. The existing boat ramp will remain in place, and the boat slips would be accessed through gates connecting to each private pier. New parking along this edge will be shared by the public and boat owners. At the southern edge is the River Overlook, accessible to the public. This overlook would provide views of the Bdóte and Pike Island (Wita Tanka) beyond.

DA-4 Welcome Station

DA-4 includes the construction of the Welcome Station and ADA accessible path to the RLC. The Welcome Station would be located at the top of the bluff between Shepard Road and Crosby Farm Road. The Welcome Station would be approximately 21,000 square feet and would have two floors and serve as a welcome space to park visitors as well as providing office space. The first floor would house office space for Mississippi Park Connection (MPC), a ranger station, and public restrooms. The second

floor would include agency offices as well as a kitchenette and a flex meeting room.

The path would provide universal access from the bluff to the floodplain. It would also link the Sam Morgan Trail on the bluff to the riverside trails, allowing for the unification of the city and park trail systems for all pedestrians and bikers. The path would be approximately 8 feet wide and would be located at grade or elevated off the ground surface as needed to maintain an ADA-compliant grade.

The Welcome Station area would be graded to facilitate the construction of the Welcome Station and parking. Grading will be set back from the top of the bluff to avoid disruption to the natural bluff line. Prior to grading, the site would be cleared of vegetation within the footprint of the Welcome Station.

Site Restoration

Currently, the vegetation on site consists of a mix of native and non-native species. The site consists of three primary vegetation communities: Dry-Mesic Oak Forest that occupies the top of bluff and wooded slopes, Cliff and Talus that occupies the exposed rockface above Crosby Farm Road, And Disturbed Lowland/Floodplain Forest that occupies the shoreline adjacent to both bays and the peninsula between the bays. The top of the bluff has been previously disturbed by construction of Shepard Road and Crosby Farm Road.

A tree inventory has been conducted across the project area and more than 2,700 trees have been identified. The most common species identified on site include box elder (*Acer negundo*), cottonwood (*Populus deltoides*), black locust (*Robinia pseudoacacia*), American elm (*Ulmus americana*), and Siberian elm (*Ulmus pumila*). Prior to grading activities, approximately 1,500 trees would be removed from the project area, approximately 45% of which are invasive. The remaining trees would be preserved. The trees would be mechanically removed using chainsaws, bulldozers, or skid steers with tree removal attachments. Fallen trees will then be chipped and spread throughout the upland portions of the site or haul of site for disposal.

After construction of each phase is complete the areas would be restored with native vegetation. Table 1 identified the native plant communities that would be restored within the project area:

Invasive species removal

The project would also include the removal of invasive species within the project area. The invasive trees are predominantly black locust (*Robinia pseudoacacia*) and Siberian elm (*Ulmus pumila*) with a few white mulberry (*Morus alba*) and Norway maple (*Acer platanoides*). Invasive shrubs are primarily common buckthorn *(Rhamnus cathartica*) and a few non-native honeysuckles *(Lonicera* sp.), and invasive herbaceous species include garlic mustard (*Alliaria petiolata*).

Table 1 Site Restoration and Seeding

Plant Community	Total Area	Seed Mix	Number of Trees to be Planted	Number of Shrubs to be Planted
Southern floodplain forest	1.5 acres	Custom floodplain mix	100	200
Southern terrace forest	2.7 acres	Custom floodplain mix	200	600

Lowland deciduous forest	4.8 acres	State Mix 35-642 Mesic Prairie Southeast	250	2,500
Dry-Mesic oak-basswood forest	5.2 acres	State Mix 36-212 Woodland Edge South and West	260	3,750
Oak savanna	1.0 acres	Oak Savanna Mix (MNL)	30-40	160-180

Schedule
It is anticipated that construction would commence in the fourth quarter of 2026. Construction would progress through 2036. This schedule is contingent on receiving all required permits and approvals for the Project.

c. Project magnitude:

Table 2 Project magnitude

Description	Number
Total Project Acreage	65.6
Welcome Station (in square feet)	21,000
River Learning Center (in square feet)	11,000
Marina and Café (in square feet)	12,000
Boathouse and storage (in square feet)	8,500

d. *Explain the project purpose; if the project will be carried out by a governmental unit, explain theneed for the project and identify its beneficiaries.*

The project's purpose is to redevelop an underutilized location along the Mississippi River to create a center of river exploration and learning. The project has been designed to better accommodate visitors, park users, school groups, and year-round recreation enthusiasts to the Mississippi River.

The Project is intended to meet the following goals:

- Create an innovative, signature center with year-round, river-oriented activities suitable for all ages
- Connect the City of Saint Paul, residents, and visitors to the Mississippi River
- Ensure community voices are engaged and woven into the design and programming of the project; particular attention will be paid to communities that are historically underrepresented in the City of Saint Paul building projects
- Create a beautiful, safe, welcoming and accessible river center for all
- Reinforce the City of Saint Paul's identity as the River Capital

e. *Are future stages of this development including development on any other property*

planned orlikely to happen? Ξ Yes □ No
If yes, briefly describe future stages, relationship to present project, timeline and plans forenvironmental review.

Some additional habitat improvements may be made in the project area as part of a separately funded and managed project led by the Minnesota Department of Natural Resources (DNR) and funded through a program of the United States Army Corps of Engineers (USACE). This work, if funded, will occur primarily within public waters (the Mississippi River) but will include limited additional work in upland portions of the general area of the proposed RLC project.

The DNR and USACE St. Paul District are proposing the Crosby Farm Backwater and floodplain Habitat Restoration (CFBFH) Project. The CFBFH Project is pursuing funding under the federal Navigation and Ecosystem Sustainability Program (NESP), which seeks to provide a safe, reliable, cost-effective, and environmentally sustainable waterborne navigation system. If approved, the CFBFH Project would occur within the West Bay of the MRLC Project area. The majority of work for the CFBFH Project would occur below the Mississippi River's Ordinary High Water Level (OHWL). The City of Saint Paul supports the proposed NESP project and would allow work to occur on City-owned property but would not manage nor fund the project. If funded, the project would include the following activities:

- Backwater dredging and shoreline resloping. The intent is to restore bathymetric diversity and enhance backwater overwintering/deep lentic habitat for fish, to improve the connectivity between the main channel and backwater habitat and support a more diverse aquatic vegetative community.
- Sediment deflection. This will reduce sediment in backwater habitat to help maintain bathymetric diversity and the health of aquatic fish and plant communities in the restored area.
- Emergent Wetlands. This will create wetland habitat for reptiles and amphibians adjacent to backwater habitat.
- Floodplain forestry enhancement and resloping. This work will improve and enhance existing floodplain forest resources at elevations not altered by previous marina projects or the River Learning Center project in the study area. Elevation enhancement may be used to improve floodplain forest resources. Forest enhancements would improve habitat for wildlife and avian species. Similar to the separate RLC project, this work may involve some areas above the OHWL, and include offsite removal of materials to reshape, regrade, and reslope natural floodplain elevations. The NESP project will also include additional plantings of native and other appropriate forest and floodplain species to restore the ecological services provided by undisturbed natural floodplains.

The City of Saint Paul, as the RGU for the proposed RLC project, has considered the need for including the potential CFBFH project in this analysis of the RLC project. In doing so, the City of Saint Paul considered the potential timing and likelihood of the potential CFBFH project in moving forward, the respective roles of the City, DNR, and USACE in proposing and managing both projects, and the regulatory role of each agency and the requirements for environmental review under of the potential CFBFH project as an individual project under state and federal law.

The CFBFH Project has not yet been approved for funding under the NESP program, and the program had no funding in the most recent fiscal year. If funding is received, design work is anticipated to occur within one year of approval. The City of Saint Paul may provide matching funds. If the NESP project moves forward, federal environmental review pursuant to the National Environmental Protection Act (NEPA) and state-level review pursuant to the Minnesota Environmental Protection Act (MEPA) will be required prior to commencing the project. DNR and USACE will be the respective Responsible Governmental Unit (RGU) and Responsible Entity for the review(s). The City of Saint Paul will provide comments on the review(s). Document(s) would be prepared by the DNR and USACE prior to development.

f. *Is this project a subsequent stage of an earlier project? □Yes Ξ No*
If yes, briefly describe the past development, timeline and any past environmental review.

7. Climate Adaptation and Resilience:

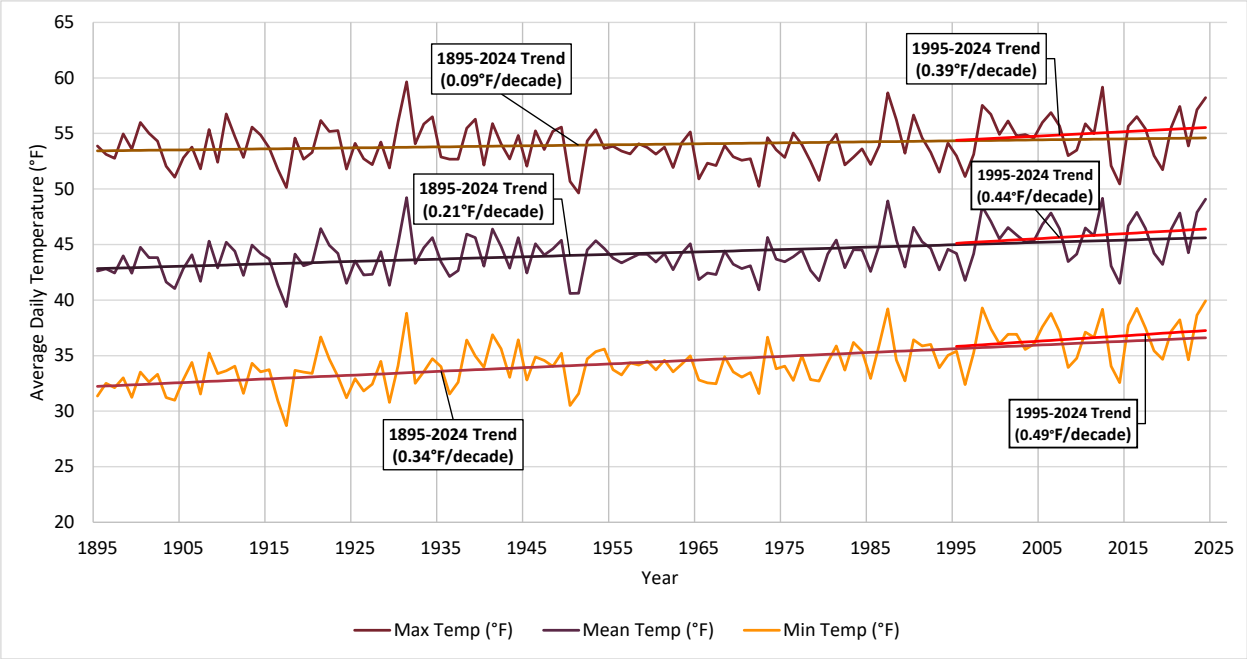
a. *Describe the climate trends in the general location of the project (see guidance: Climate Adaptation and Resilience) and how climate change is anticipated to affect that location duringthe life of the project.*

To understand how climate change is anticipated to affect the project area, historical and projected climate data is considered, as well as climate hazard projections.

The DNR's Minnesota Climate Explorer tool provides a summary of historical climate data for various regions across Minnesota (reference (1)). Data for Ramsey County was analyzed for the project.

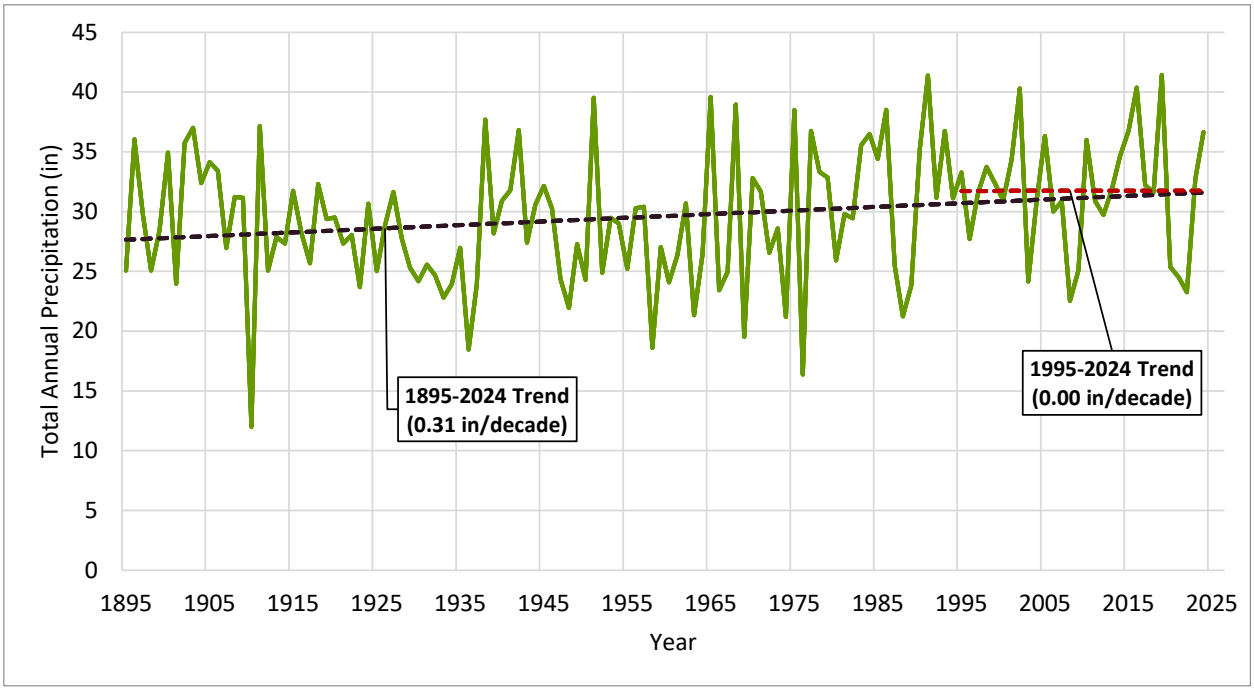
Graphic 1 summarizes the mean, maximum, and minimum average daily temperature from 1895 to 2024 for Ramsey County. It also shows the temperature trends per decade from 1895 to 2024 and from 1995 to 2024 to represent the full record of data and the most recent 30-year climate normal period, respectively (reference (1)). In each temperature statistic, Ramsey County exhibits an increase in daily temperature from 1895 to 2024. The annual average minimum daily temperature has increased at the largest rate of the three temperature statistics within both the full record of data and the most recent 30-year climate normal period.

Graphic 1 Historical Annual Mean, Maximum, and Minimum Daily Air Temperature (°F) for Ramsey County from 1895 to 2024



Graphic 2 shows the total annual precipitation for Ramsey County from 1895 to 2024. Total annual precipitation has increased from 1895 to 2024 by a rate of 0.31 inches/decade and decreased from 1995 to 2024 by a rate of 0.00 inches/decade.

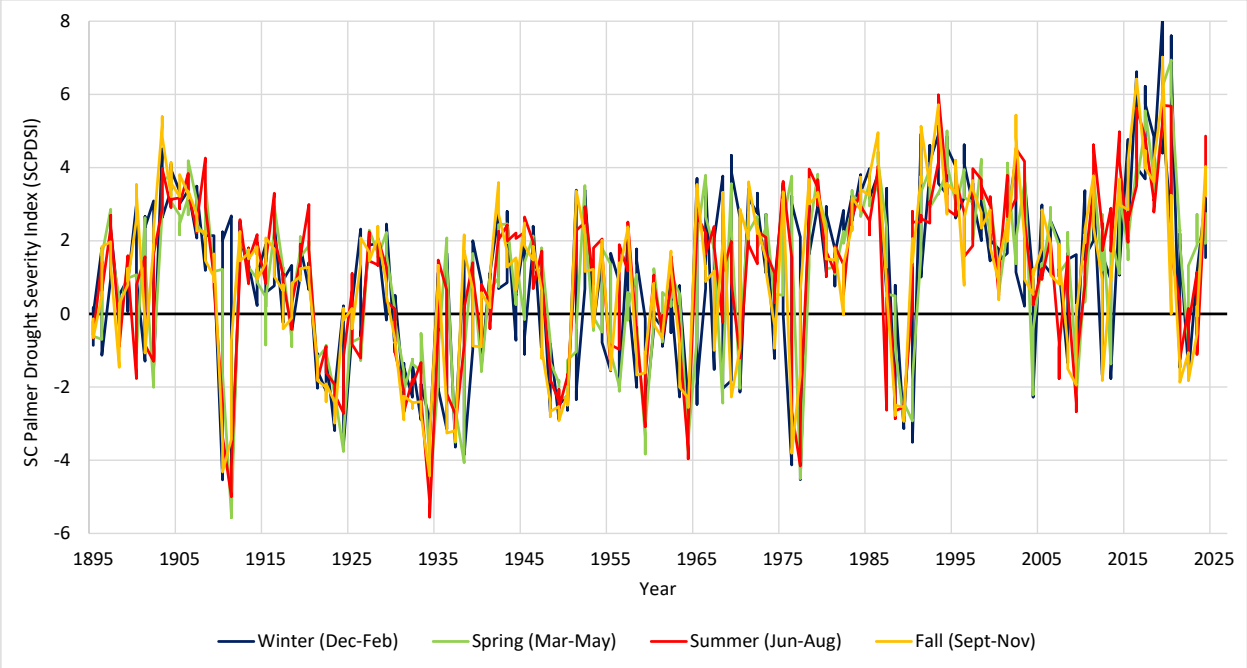
Graphic 2 **Historical Total Annual Precipitation (inches) for Ramsey County from 1895 to 2024**



Graphic 3 shows the seasonal drought severity for Ramsey County from 1895 to 2024 using the Self-Calibrated Palmer Drought Severity Index (scPDSI). The scPDSI is a meteorological drought index that

measures the departure of moisture. Negative scPDSI values indicate drought conditions, positive values indicate wet conditions, and values near zero indicate normal conditions (reference (2)). Ramsey County experienced frequent drought episodes from 1910 to 1940 and 1960 to 1977. From 1978 to 2024, seasonal wet conditions have generally been more frequent than drought conditions.

Graphic 3 **Historical Drought Severity for Ramsey County from 1895 to 2024**



Climate projections are based on the Minnesota dynamically downscaled climate model data that was developed by the University of Minnesota and are summarized in three scenarios: Shared Socioeconomic Pathway (SSP) 245, SSP370, and SSP585. SSP is a measure adopted by the Intergovernmental Panel on Climate Change (IPCC) to represent various greenhouse gas (GHG) concentration pathways as well as social and economic decisions (reference (3)).

SSP245 represents a “Middle of the Road” scenario where economic, social, and technological trends follow historical patterns, population growth is moderate, and inequality persists. Additionally, SSP245 includes an intermediate emissions scenario, where a net radiative forcing of 4.5 watts per meter squared (W/m^2) is received by the earth due to the GHG effect and emissions begin to decrease around 2040 (reference (3)).

SSP370 represents a “Regional Rivalry” scenario where nations focus on regional issues instead of cross-collaboration and development. SSP370 also includes a high emissions scenario, where a net radiative forcing of 7.0 W/m^2 is received by the earth (reference (3)).

SSP585 represents a “Fossil-fueled Development” scenario where there is increased development in competitive markets driven by an increased global consumption of fossil fuels. SSP585 also includes a very high emissions scenario, where a net radiative forcing of 8.5 W/m^2 is received by the earth and no emissions are reduced through 2100 (reference (3)).

Table 4 shows the modeled historical and projected temperature values for the project. In each temperature statistic, Ramsey County exhibits an increase in daily temperature compared to the historical temperature. The minimum daily temperature has the largest modeled increase of the three temperature statistics.

Table 3 Modeled Historical and Projected Temperature Trends for the Project

Scenario	Time Period	Average Daily Temperature (°F) – Ensemble Mean	Minimum Daily Temperature (°F) – Ensemble Mean	Maximum Daily Temperature (°F) – Ensemble Mean
Historical	1995-2014	46.2	38.5	56.9
SSP245	2040-2059	50.0 (3.8)	42.5 (4.0)	60.4 (3.5)
SSP245	2060-2079	51.3 (5.1)	43.9 (5.5)	61.6 (4.7)
SSP245	2080-2099	52.9 (6.8)	45.5 (7.1)	63.3 (6.4)
SSP370	2040-2059	51.1 (5.0)	43.5 (5.0)	61.9 (5.0)
SSP370	2060-2079	53.3 (7.1)	45.7 (7.3)	63.9 (7.0)
SSP370	2080-2099	55.2 (9.0)	47.8 (9.4)	65.6 (8.7)
SSP585	2040-2059	50.6 (4.4)	43.1 (4.6)	61.0 (4.1)
SSP585	2060-2079	53.3 (7.2)	46.0 (7.6)	63.6 (6.7)
SSP585	2080-2099	57.8 (11.6)	50.8 (12.3)	67.6 (10.7)

[1]Values in parentheses represent the difference from the modeled historical value.

Table 5 shows the model historical and projected precipitation values for the project. SSP245 projects an increase in precipitation for 2040-2079, and a decrease from 2080-2099. SSP370 projects a decrease in precipitation from 2040-2079, and an increase from 2080-2099. SSP585 projects an increase in precipitation from 2040-2099.

Table 4 Modeled Historical and Projected Precipitation Trends for the Project

Scenario	Time Period	Total Annual Precipitation (in) – Ensemble Mean
Historical	1995-2014	34.4
SSP245	2040-2059	35.6 (1.2)
SSP245	2060-2079	35.6 (1.2)
SSP245	2080-2099	33.9 (-0.6)
SSP370	2040-2059	30.0 (-4.5)
SSP370	2060-2079	30.6 (-3.8)

SSP370	2080-2099	34.5 (0.1)
SSP585	2040-2059	35.1 (0.7)
SSP585	2060-2079	37.9 (3.5)
SSP585	2080-2099	39.8 (5.3)

[1]Values in parentheses represent the difference from the modeled historical value.

The EPA Climate Resilience Evaluation and Awareness Tool (CREAT) provides 100-year storm intensity projections to help with planning for water, wastewater, and stormwater utilities (references (4); (5)). A 100-year storm is an event that has a one percent chance of occurring in a given year. The CREAT tool considers two time periods, 2035 and 2060. For each time period, two scenarios are considered, from a 'Not as Stormy' future to a 'Stormy' future. Within the project area, the 2035 time period shows a 2.9 percent increase in the 100-year storm intensity for the 'Not as Stormy' scenario, and a 13.7 percent increase for the 'Stormy' scenario. The 2060 time period shows a 5.6 percent increase in the 100-year storm intensity for the 'Not as Stormy' scenario, and a 26.6 percent increase for the 'Stormy' scenario.

The EPA Streamflow Projections Map summarizes general projections related to streamflow under climate change (reference (6)). The EPA Streamflow Projections Map for 2071 to 2100 (RCP 8.5) anticipates a general change in average streamflow of the Mississippi River (NHD reach code 07010206000602) by a ratio of 1.15 (90th percentile) under wetter projections and a ratio of 0.83 to 0.82 (10th percentile) under drier projections when compared to baseline historical flows (1976 to 2005).

The First Street Risk Factor risk assessment and map tool was used to determine a risk assessment for St. Paul, MN, to help identify current and future climate change risks (reference (7)). According to Risk Factor, flood risk is major, fire risk is moderate, wind risk is minor, air quality risk is minor, and heat risk is minor (references (8); (9); (10); (11); (12)).

b. *For each Resource Category in the table below: Describe how the project's proposed activitiesand how the project's design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.*

Table 5 Interaction of proposed activities with each climate trends

ResourceCategory	Climate Considerations	Project components	Potential Environmental Effects Identify climate change risks & vulnerabilities. Identify long-term impacts that climate conditions pose to proposed activities.	Adaptation Strategies (with applicable timeframe – construction to end of expected lifespan)
Project Design	Average annual temperature increasing	Increased impervious surface	Impervious surfaces like roads, buildings, and sidewalks absorb and retain heat, leading to higher temperatures	The project would plant a variety of native vegetation, which would provide shade for park users and reduce the heat island effect.
Project Design	Average annual temperature increasing	Constructed buildings	Increased average temperature may require additional air conditioning to keep the buildings at a comfortable temperature.	All structures will be required to meet the states B3 Sustainable Building Guidelines which require an 80% reduction in energy consumption.
Project Design	Average annual temperature increasing	Vegetation restoration	Increased annual temperatures can negatively impact vegetation through increased heat stress and water stress	The project would plant native vegetation that tolerates a variety of climatic conditions. The City of Saint Paul would be responsible for maintaining the vegetation and adapting the site's species composition to match the climate conditions of the site.
Project Design	Average precipitation increasing	Increased impervious surface	Increased impervious surface can lead to increased surface runoff.	The project will implement permeable trails to increase stormwater infiltration and reduce stormwater runoff. In addition, a stormwater basin will be installed throughout the site.

ResourceCategory	Climate Considerations	Project components	Potential Environmental Effects Identify climate change risks & vulnerabilities. Identify long-term impacts that climate conditions pose to proposed activities.	Adaptation Strategies (with applicable timeframe – construction to end of expected lifespan)
Project Design	Average precipitation increasing	Constructed buildings	Increased annual precipitation could lead to increased risk of flooding frequency and duration.	The RLC, Welcome Station, Marina Rental Office +Cafe, Storage Building and Boathouse are set above the regulatory flood elevation. The Marina maintenance building will be in the flood zone. These buildings will be flood proofed.
Project Design	Average precipitation increasing	Vegetation restoration	Increased precipitation can negatively impact vegetation through increased inundation that can lead to oxygen deprivation and root rot.	The site is partially located within the Mississippi River floodplain. Vegetation that is tolerant of annual flooding would be selected for the site. Any vegetation that is damaged by increased precipitation would be replanted with species that would tolerate wetter conditions.
Water Resources	Addressed in item 12	Addressed in item 12	Addressed in item 12	Addressed in item 12
Contamination/ Hazardous Materials/Wastes	Addressed in item 13	Addressed in item 13	Addressed in item 13	Addressed in item 13
Fish, wildlife, plant communities, andsensitive ecological resources (rare features)	Addressed in item 14.	Addressed in item 14.	Addressed in item 14.	Addressed in item14.

8. **Cover types:** Estimate the acreage of the site with each of the following cover types before and after development:

Table 6 Cover Types

Cover Types	Before(acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	1.1	1.1
Deep lakes (>2 meters deep)	0.0	0.0
Wooded/forest	26.2	23.4
Rivers/streams	13.6	13.6
Brush/Grassland	7.0	6.0
Cropland	0.0	0.0
Livestock rangeland/pastureland	0.0	0.0
Lawn/landscaping	0.00	0.0
Green infrastructure TOTAL (from table below*)	0.0	0.0
Impervious surface	16.2	18.2
Stormwater Pond (wet sedimentation basin)	0.0	0.9
Other (describe)	0.0	0.0
Buildings	1.5	2.4
TOTAL	65.6	65.6

Table 7 Green Infrastructure

Green Infrastructure*	Before (acreage)	After (acreage)
Constructed infiltration systems (infiltration basins/infiltration trenches/ rainwater gardens/bioretention areas without underdrains/swales with impermeable check dams)	0	0.92 acres
Constructed tree trenches and tree boxes	0	0.14 acres
Constructed wetlands	0	0
Constructed green roofs	0	0
Constructed permeable pavements	0	0.3 acres
Other (describe)	NA	NA
TOTAL*	0	1.36 acres

Table 8 Tree Removal and Replacement

Trees	Percent	Number
Percent tree canopy removed or number of mature trees removed during development	NA	189
Number of new trees planted	NA	810

9. Permits and approvals required: List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibiteduntil all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Table 9 Permits and Approvals

Unit of Government	Type of Application	Status
U.S. Army Corps of Engineers	Section 404 Permit	To be obtained

Unit of Government	Type of Application	Status
U.S. Federal Emergency Management Agency	Floodplain permitting: Letter of Map Revision	To be obtained
Minnesota Department of Natural Resources	Work in Public Waters Permit	To be obtained
	Water Appropriations Temporary Construction Dewatering	To be obtained
	Natural Heritage Review	Completed
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit	To be obtained
	Section 401 Water Quality Certification	
Capitol Region Watershed District	Stormwater Management	To be obtained
	Flood Control	
	Wetland Management	
	Erosion and Sediment Control	
City of Saint Paul	Shore Land Conditional Use Permit	To be obtained
	MRCCA Compliance	
	Zoning Permit	
	Demolition Permit	
	Erosion Permit	
	Paving Permit	
	Grading Permit	
	Utility and Sewer Permit	
	Landscaping and Site	
	Drainage	
	Traffic	
	Building Permit	
United States Fish and Wildlife Service	Section 7 consultation	To be completed
State Historic Preservation Office	Section 106 consultation	To be completed

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos.10-20, or the RGU can address all cumulative potential effects in response to EAW Item No.22. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 21.

10. Land use:

a. *Describe:*

i. *Existing land use of the site as well as areas adjacent to and near the site, including parksand open space, cemeteries, trails, prime or unique farmlands.*

The project is located in the City of Saint Paul in an urban setting (Figure *2*). The primary landowners within the project area are the City of Saint Paul and Ramsey County, who maintains the Shephard Road ROW. The land use of the project area, per the City of Saint Paul, is mostly park, recreational, or preserve, with some retail and other commercial, multifamily, major highway, open water, and undeveloped. Neighboring land use to the east and west is also park, recreational, or preserve, with commercial, retail, and other commercial, major highway, vacant, and residential land use to the north.

The project area is adjacent to Hidden Falls-Crosby Farm Regional Park, a part of the City of Saint Paul Department of Parks and Recreation (reference (13)). The park has areas for picnics, fishing, hiking, biking, and more. There are around 6.7 miles of paved trails next to the Mississippi River and the marshes of Crosby Lake. Hidden Falls-Crosby Farm Regional Park has numerous hiking and walking trails throughout the project area. Within the park and project area, there is the Two Rivers Overlook, which provides a viewpoint that commemorates the intersection of the Minnesota and Mississippi Rivers. The overlook is located at the intersection of Gannon Road and Shepard Road, within the park on the Sam Morgan Regional Trail. As discussed in the project description, the Watergate Marina currently operates within the project area.

There are no cemeteries within the project area. The closest cemeteries within 0.5 miles are the Resurrection Cemetery (0.41 miles from the boundary) and the St. Peter's Cemetery (0.41 miles from the boundary). No prime or unique farmland exists within the project area or neighboring parcels.

ii. *Plans. Describe planned land use as identified in comprehensive plan (if available) and anyother applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.*

Metropolitan Council

The Imagine 2050 plan is a regional development guide that includes vision and goals and addresses critical issues that cross policy areas: climate, equity, natural systems, public health, safety, and well-being (reference (14)). The Metropolitan (MET) Council believes that land use policy is imperative for how the region manages growth and development. Imagine 2050 addresses issues greater than any one neighborhood, city, or single county and guides both public and private growth and development in the region. The plan has objectives with connected policies and actions to support each objective.

City of Saint Paul

The project is located within the City of Saint Paul in Ramsey County and is subject to the Saint Paul Comprehensive Plan and the Saint Paul Code of Ordinances.

The Saint Paul 2040 Comprehensive Plan (reference (15)) was adopted in November of 2020 and amended in June of 2022. The comprehensive plan for the city is a blueprint for guiding

development over the next 20 years. The plan outlines development policies and future studies and/or regulatory chances (eg. adopting/amending ordinances) consistent with those policies. The comprehensive plan includes chapters on Land Use, Transportation, Parks, Recreation and Open Space, Housing, Heritage and Cultural Preservation, Water Resources, and the Mississippi River Critical Area (MRCCA). The core values, goals, and policies within the plan "reflect an understanding that the physical elements of our city – streets, parks, housing and public infrastructure – impact and are impacted by the people in our city."

The MRCCA Chapter outlines policies in a number of areas consistent with the MRCCA rules promulgated by the DNR in 2017 (MN Rules 6106). Additional details regarding the Minnesota Rules and new Saint Paul MRCCA ordinance reflecting the Minnesota Rules appear later in this section.

The MRCCA Chapter is guided by the following goals:

1. Recognition, celebration and protection of the defining feature of Saint Paul for the benefit of the health, safety and welfare of the residents of the city, state, region and nation
2. Protection and enhancement of the unique urban ecology of the river corridor and valley
3. An economically-vibrant working river
4. High-quality and sustainable development that enhances the natural environment
5. Equitable public access/strong connections to the Mississippi River
6. The river as the backbone of a community-building network that extends beyond the shoreline and into the fabric of the surrounding neighborhoods
7. Balance between all of the ways the river is a resource to Saint Paul - environmental, natural, economic, cultural, social, physical, recreational, historic, spiritual

The MRCCA Chapter includes specific policy language to support the goals and requirements of the MRCCA Rules in the context of broader City planning and development in Saint Paul highlights issues unique to Saint Paul, including key redevelopment sites, the more urban and working nature of the MRCCA in parts of Saint Paul, key historical and cultural features within the MRCCA, and cites important public views and areas of significant vegetative communities. Maps and narrative regarding Primary Conservation Areas and internal MRCCA district boundaries, which are a key part of how the resources in the MRCCA are protected and managed are provided. It also references other related planning documents, including notably the Great River Passage Master Plan. The proposed project is consistent with the intent and language of the MRCCA Chapter.

In addition to the MRCCA Chapter, the comprehensive plan highlights the goals to guide connection with the Mississippi River. In the Land Use chapter, goal number four that helps guide policy is "strong connections to the Mississippi River, parks and trails." A policy in the land use chapter is to pursue partnerships to improve public open space access along the Mississippi River. In the Parks and Recreation chapter, goal number five in this chapter is strong and accessible connections and policy 44 under this goal is to "support facility improvements that better connect neighborhoods to the Mississippi River."

The Mississippi River Corridor Plan (reference (16)), published in 2002, is an addendum to the comprehensive plan. The plan emphasizes the interrelated systems of the Mississippi River and Saint Paul and focuses on protecting these systems and resources by managing human activity and the physical environment. It was created to reinforce other river-related planning that was completed at the time. The plan lays out four strategies:

- Strategy 1: Protect the river as a unique urban ecosystem
- Strategy 2: Sustain the economic resources of the working river
- Strategy 3: Enhance the city's quality of life by reconnecting to the river
- Strategy 4: Use urban design to enhance the river's corridor's built environment

The Great River Passage Master Plan is for the city of Saint Paul's 17 miles of Mississippi River Parklands (reference (17)). It presents recommendations for orienting the city toward the river and integrating new and enhanced parks and natural areas. Within the plan, there are goals and objectives for redeveloping Watergate Marina, which are mentioned as part of the Valley Reach (Forst Road Bridge to Downtown). One of the goals for the Valley Reach is to "create gathering places by expanding and repurposing existing iconic places." This could be done by redeveloping Watergate Marina to "create a gathering place that improves public river access and an environmental education center for the city. The improved marina will include facilities for community recreation, all types of boaters, marina and fishing support shops, and a cafe-type restaurant."

Capitol Region Watershed District Management Plan

The project area is within the Capitol Region Watershed District (CRWD). The CRWD is a special purpose local government unit that manages water resources within portions of Lauderdale, Falcon Heights, Maplewood, Roseville, and Saint Paul. The CRWD 2021-2030 Watershed Management Plan guides the management of the waters within the district (reference (18)). The organizational values that the plan is centered around are as follows: integrity, diversity, collaboration, and innovation. The districts vision is of "cleaner waters through innovative, resilient, effective and equitable watershed management in collaboration with diverse partners." The plan passes watershed issues and goals and a correlated implementation plan. The Hidden Falls/Crosby Farm Trail Reconstruction Planning would align with the project, as its purpose would be to plan access and trail reconstruction within the park to reduce impacts from increasingly frequent large flood events in the Mississippi River. The project would comply with the CRWD's management plan.

National Park Service

The Mississippi National River and Recreation Area (MNRRA) is a 72 mile stretch of river park. The park includes fishing, boating, canoeing, birdwatching, bicycling, and hiking. This national park is a "partnership" park. Only 67 acres of 54,000 acres are owned by the National Park Service (NPS), whereas the rest is composed of city parks, regional parks, state park, national wildlife refuge, state scientific and natural areas, as well as private businesses and homes. The NPS works in partnership with the other units of government to provide additional services and to help preserve and protect the natural and cultural history of the river. Two plans are applicable to this project: the MNRRA Strategic Plan and the MNRRA Comprehensive Plan.

Mississippi National River and Recreation Area Strategic Plan

The five year (2008-2012) strategic plan was developed to clarify the goals, visions, and values of the park (reference (19)). The mission statement of the plan is "to protect and enhance the Mississippi River for present and future generations." They have six core values that guide their work, which include: stewardship, national heritage, learning, collaboration, economic vitality, and volunteerism. While they have a ten-year vision, they have strategic goals that will help guide their decisions and six goals with accompanying strategies.

Mississippi National River and Recreation Area Comprehensive Management Plan

The MNRRA Comprehensive Management Plan was approved in 1995 and is the general management plan for the Mississippi National River and Recreation Area (reference (20)). General concept and corridor wide policies are included in the document for land and water use, resource management, visitor use and interpretation, general development needs, park operations, and plan implementation strategies. The plan can be tailored by local governments to address their section of the river and address site-specific issues. Within the plan, the NPS stated that they would develop a major interpretive center and headquarters in Saint Paul as one of their proposed NPS facilities.

iii. *Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenicrivers, critical area, agricultural preserves, etc.*

The project is within two different base zoning districts and two overlay districts. Overlay districts are an additional layer of zoning districts that apply over and in addition to the base districts. According to the City of Saint Paul, the project area is primarily within the base zoning residential (H1) with a smaller area of the traditional neighborhood (T2 and T3) zoning districts (Figure *8*). There are no areas zoned as shoreland, wild and scenic rivers, critical areas, or agricultural preserves within the project area per the City of Saint Paul. The H1 zoning district provides for a variety of housing options along with civic and institutional uses, public services and utilities that serve residents in the district. The T3 zoning district provides for higher-density pedestrian and transit oriented mixed-use development

The project area is within the current River Corridor Urban Open Overlay District (RC3) and the River Corridor Urban Diversified Overlay District (RC4). The RC3 districts intent is “that lands and waters within this district shall be managed to conserve and protect the existing and potential recreational, scenic, natural and historic resources. Open space provided in the open river corridor is for public use and the protection of unique natural and scenic resources. The existing transportation role of the river in this district will be protected.” The RC4 districts intent is “that the lands and waters in this district be used and developed to maintain the present diversity of commercial, industrial, residential and public uses of the lands, including the existing transportation use of the river; to protect historical sites and areas, natural scenic and environmental resources; and to expand public access to and enjoyment of the river. New commercial, industrial, residential, and other uses are permitted if they are compatible with these goals.” The project is also within the flood fringe overlay district, where the uses of land or structures that are permitted in the underlying district are also then subject to the specific conditions of the flood fringe district.

Mississippi River Corridor Critical Area (MRCCA)

MRCCA was designated to provide coordinated land planning and regulation for the Mississippi River over a 72-mile stretch that includes seven-counties through Governor’s Executive Order 79-19 (reference (21)). The purpose of the legislation is to “preserve and enhance the natural, aesthetic, economic, recreational, cultural and historical values of the corridor, including providing for continuation and development of a variety of urban uses where appropriate and protection of environmentally sensitive areas.” In 2017, the DNR promulgated Minnesota Rules 6106 to provide a standard regulatory framework to manage and protect the MRCCA’s resources. All municipalities with land within the MRCCA are required to adopt new ordinance(s) implementing Minnesota Rules 6106. Saint Paul has been engaged in this process for the past several years. After an initial public hearing in 2023, Saint Paul City staff have made revisions to the amendments. The Planning Commission held a second public hearing earlier in 2025, and hearing and adoption by the Saint Paul City Council of a new

MRCCA ordinance is anticipated in fall or early winter of 2025. Given that permitting for the proposed project will almost certainly occur after adoption of the new ordinance, the analysis below relies on information from Minnesota Rules 6106 and the draft ordinance under review.

The project is mostly within CA-Rural Open Space (ROS), as well as smaller areas of CA-River Town Crossings (RTC) and CA-River Neighborhood (RN) (Figure *9*). The CA-ROS is described as "rural undeveloped and developed low density residential land that is riparian to or visible from the river, often contains tracts of high-quality ecological resources." The CA-RN is defined as "developed residential areas containing parks and recreational areas that are visible from the river, or abut riparian parks" (reference (22)).

The project is also within overlay zoning districts, both the MRCCA Shore Impact Zone (SIZ) and MRCCA Bluff Impact Zones (BIZ). The BIZ is a bluff and land located within 20 feet of the bluff. The SIZ is land located between the ordinary high-water level of public waters and a line parallel to it at a setback of 50 percent of the required structure setback or, for agricultural use, 50 feet landward of the ordinary high-water level.

iv. *If any critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding,describe the risk potential considering changing precipitation and event intensity.*

No critical infrastructure is within the floodplain, so there will be no risk to critical infrastructure within the floodplain. The project would not increase the flooding potential within the Site or any of the surrounding properties.

b. *Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9aabove, concentrating on implications for environmental effects.*

The project is compatible with the Imagine 2050 plan. Objective 4 in the plan is to "prioritize land use and development activities that protect, restore, and enhance natural systems at all scales." Policies and actions within this highlight establishing connections to natural systems corridors and identifying how natural systems can connect to cities, townships, and counties. The project is compatible as it is intended to develop in an existing park to create more connections to the Mississippi corridor.

The project is compatible with the land uses, zoning, and plans listed in 9a, per the City of Saint Paul's Code of Ordinances. The project is required to be compliant with future MRCCA zoning requirements, as the project is within both the BIZ and SIZ overlay districts. The project is part of a continuing effort, found within the Saint Paul comprehensive and other resource management plans, to increase connection between the city and the Mississippi River.

Specifically, one of the goals within Strategy 3 of the Mississippi River Corridor Plan is to further increase park and open space areas along the river. Also, the Great River Passage Plan discusses the project and updates to the Watergate Marina. In the plan, the Watergate Marina vision is that it "will be a great place to meet on the river and learn about the natural world. It will be the primary location for the City's Environmental Education programs and will be expanded to provide access for various types of recreational boating. It will be a great place to spend the day picnicking, boating, fishing, or hiking the trails in nearby natural areas." The goals and objectives for the Watergate Marina are as follows:

redevelop Watergate Marina as a key river gateway, gathering place and environmental education center; and improve access to the Great River Passage.

The project will be coordinated with CRWD to ensure that the project is in compliance with their applicable rules and regulations. The project would align with the proposed Hidden Falls/Crosby Farm Trail reconstruction efforts, as well as continued improvements and management in the Valley Reach area.

The project is compatible with the MNRRA Comprehensive and Strategic Plan. The strategic plan has a land use goal to "guide appropriate land use decisions that are sensitive to the river's natural, scenic and cultural values in the context of rapid urban growth and the increasing land values." One of the strategies for this goal was to increase local government support for land use that preserves, protects, and enhances the natural, cultural, and scenic resources while providing for appropriate development. The comprehensive plan has numerous policies that guide the preservation and appropriate development of the Mississippi corridor. For example, the plan emphasizes open space and trails and creating continuous public open spaces along the Saint Paul corridor.

c. *Identify measures incorporated into the proposed project to mitigate any potentialincompatibility as discussed in Item 10b above and any risk potential.*

With the required permitting, the project would be compatible with the plans from MET Council, City of Saint Paul, CRWD, NPS and other governing bodies. The project will not be changing any land use or zoning within the area but rather building upon an existing public park. Because of this, no mitigation is proposed for incompatibility.

11. Geology, soils and topography/land forms:

a. *Geology - Describe the geology underlying the project area and identify and map any susceptiblegeologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.*

The project area bedrock geology consists of a thin, approximately 15 – 30 feet thick, layer of Ordovician-aged fine-grained dolomitic limestone of the Platteville Formation, underlain by a thick layer of fine-grained, friable sandstone of the St Peter Formation (Figure). The St. Peter sandstone formation is estimated to be approximately 100 – 200 feet thick in the project area. Thin-bedded dolostone of the Prairie du Chien Group underlies the St Peter Formation but does not outcrop in the project area (reference (23)). The Platteville Formation is present within 6 feet of the ground surface at the top of the bluff (reference (24)). Both the Platteville and St Peter Formations are exposed on the project area's hillside bluff. At the base of the bluff within the river valley, depth to bedrock ranges from 30 to over 100 feet below ground surface (Figure 11, references (25); (24)).

The project area at the top of the bluff is dominated by Holocene-aged stream sediment of the Glacial River Warren, which formed the terraces of the Mississippi River during the last glacial retreat from Minnesota approximately 10,000 years ago (Figure 12). It consists of sand and gravel with silt and clay terrace alluvium and is generally less than 20 feet thick. Sediment on and at the base of the hillside bluff

consists of angular bedrock fragments, with silt and clay where bedrock is exposed. The area between the bluff and Mississippi River is dominated by thick deposits of flood plain alluvium, consisting of sand and gravel with areas of fine sediment and organic material (reference (26)).

The DNR divides Minnesota into six groundwater provinces based on bedrock and glacial geology. The aquifers within these provinces occur in two general geologic settings: bedrock and unconsolidated sediments deposited by glaciers, watercourses, and waterbodies. The project area is within the Karst Province. Sediment in this province is thin or absent and, therefore, not used or relatively unimportant as aquifers. The Karst Province is underlain by productive bedrock aquifers, however those closest to the land surface are suspectable to impacts by human activities (reference (27)). There are no karst features within the project area. The nearest karst feature is a sink hole located approximately 0.25 miles west of Shepard Road and 7th Street West (reference (28)).

The project area seismic risk is very low; it is located within an area rated as less than a two-percent chance of damage from natural or human-induced earthquakes in 10,000 years (reference (29)).

b. *Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highlypermeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed inresponse to Item 12.b.ii.*

The project area is generally flat along Shepard Road and Crosby Farm Road, slopes steeply to the south and south-southeast along the river bluff south of Crosby Farm Road, then slopes gently to the south-southeast towards the Mississippi River. Elevations range from about 800 feet above mean sea level on the top of the river bluff to 700 feet at the Mississippi River.

The valleys of the Minnesota and Mississippi Rivers were eroded by flowing water from melting glaciers, and from ongoing erosion since the end of glacial melting. Steep river bluffs formed in layered sedimentary bedrock of variable strength and are covered in places by loose sandy sediments from earlier glacial meltwater flow and by other sediments that are prone to landslides during significant rainstorms. Groundwater springs can weaken, erode, and saturate bedrock layers and cause landslides. In urban areas, human activities can contribute to erosion and landslides, including inadequate storm water management, undercutting of slopes, placement of artificial fill, and land-use changes, such as urbanization (reference (30)). The USGS United States Landslide Inventory has no records of landslides within the vicinity of the project site (reference (31)).

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the project area is comprised of six different soil types and water (reference (32)). The soils information is included in Table 11 and Figure 13.

Table 10 Soils within the Project Area

Map Unit Symbol	Map Unit Name	Erosion Rating	Location	Acres within Project Area	Percent of Project Area
1027	Udorthents, wet substratum	Not rated	Between and East of the marina bays	15.6	23.7%
1039	Urban land	Not rated	Top of bluff roadways and developed areas	13.3	20.3%
1819F	Dorerton-Rock outcrop complex, 25 to 65 percent slopes	3	Hillside bluff	10.6	16.2%
852B	Urban land-Copaston complex, 0 to 8 percent slopes	Not rated	Top of bluff roadways and developed areas	4.8	7.2%
329	Chaska silt loam	6	East of the marina	3.7	5.6%
1821	Algansee loamy sand	2	Mississippi River Shoreline	2	3%
Total				50	76%[1]

[1] The remaining 24 percent of the project area is made up of open water from the Mississippi River.

The erosion rating included in Table 11 indicates susceptibility of soil loss from off-road areas after disturbance activities that expose the soil surface. Ratings with lower numbers are most susceptible to wind erosion. Note the Urban Land soils at the top of the bluff are not rated, meaning that erosion is unlikely under ordinary climatic conditions.

According to geotechnical information from the 2025 report provided by Gale-Tec Engineering, Inc. (reference (24)), soil conditions at the proposed Welcome Center and Crosby Farm Road at the top of the river bluff consist of approximately 5 to 10 feet of loose to medium dense silty sand to clayey silty

sand fill over limestone bedrock. Shallow limestone and sandstone bedrock was also encountered beneath silty sand fill along the Crosby Farm Road as it descends into the river valley. Soil conditions within the river valley generally consisted of a 15 – 30 feet thick layer of fill soils, likely placed as part of the existing marina construction as well as the attempted past site development on the western peninsula. These fill soils generally consist of loose to medium dense sand to silty/clayey sand. At some locations layers of crushed concrete, limestone and bituminous gravel, cobbles and boulders, as well as buried tree stumps and branches, are intermixed with the granular fill. Beneath the fill layer, native soils generally consist of loose alluvial deposits of very fine to fine grained silty sand to clayey silty sands, as well as deposits of silt and silty clay. These loose deposits were encountered down to the top of limestone or sandstone bedrock, encountered at depths of 15 feet or less at the base of the bluff, to greater than 80 feet below the ground surface adjacent to the Mississippi River main channel.

The estimated cut and fill volumes within the 100-year FEMA floodplain are included in Table 12. The volumes are based on 65% design plans and are subject to change.

Table 11 Cut and Fill Volumes within the Project Area

	Volume in Cubic Yards (CY)
Estimated Cut Volume	81,800 CY
Estimated Fill Volume	8,900 CY
Net Cut Volume	72,900 CY

Grading to facilitate construction will be set back from the top of the bluff to avoid disruption to the natural bluff line. Erosion and sedimentation control measures related to stormwater runoff are included Item 12.b.ii.

12. Water resources:

a. *Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.*

i. *Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches.Include any special designations such as public waters, shoreland classification and floodway/floodplain, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include the presence of aquatic invasive speciesand the water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.*

The project is located along the Mississippi River, with several water features present in the project area. The entrance to the project is located on top of a bluff on Shepard Road. Access to the buildings will follow Crosby Farm Road and will be constructed in upland areas adjacent to the Mississippi River (Figure 14). The buildings will be approximately 400 feet from the Mississippi River and will be located within the floodplain of the river. The Mississippi River is a Minnesota Public Water (ID: 19000599) and navigable water maintained by the USACE. This reach of the Mississippi River is within Pool 2 of the Upper Mississippi Lock and Dam system. There are no planned improvements to the Mississippi River for this project. Table 13 summarizes the public waters within the project area and within one mile of the project. The Mississippi River has a DNR shoreland classification for General Development.

Table 12 Public Water Basin within the Project Area

Public Water Basin	Waterbody ID	Area within Project (ac)
Mississippi River, U.S. Lock & Dam #2 Pool (main channel)	19000599	14.6
Pike Island Marsh	62025100	-
Upper	62022500	-
Unnamed	19010500	-
Unnamed	19010600	-
Unnamed	19010700	-
Crosby	62004700	-
Augusta	19008100	-
Snelling	27000100	-
Minnesota River	104280	-
Mississippi River	103383	-

The Mississippi River is listed by the Minnesota Pollution Control Agency (MPCA) as impaired for

mercury in fish tissue (Hg-F), mercury in water column (Hg-W), nutrients, total suspended solids (TSS), fecal coliform (FC), polychlorinated biphenyls in fish tissue (PCB-F), Perfluorooctane sulfonate in fish tissue and the water column (PFOS-F, PFOS-W), and aluminum (Al) (reference (33)). Other impaired waterbodies are present within one mile of the project; however, the project is a direct watershed to the Mississippi River and would not impact other waterbodies. Table 14 summarizes the impairments on the Mississippi River and impairments within one mile of the project.

Table 13 Impaired Waterbodies within One Mile of the Project Area

Waterbody Name	Waterbody Type	AUID	Use Classification	Impairment
Upper St Anthony Falls to St Croix River	River	07010206-814	2Bg	Al; FC; Hg-F; Hg-W; Nutrients; PCB-F; PFOS-F; PFOS-W; TSS
RM 22 to Mississippi River	River	07020012-505	2Bg	DO; Hg-F; Hg-W; Nutrients; PCB-F; T
Augusta	Lake	19-0081-00	4A	Nutrients
Snelling	Lake	27-0001-00	4A	Hg-F

As previously noted, the project area is located within the floodplain of the Mississippi River. Grading activities will be limited to the AE and 500-year floodplain zones; there are no planned grading activities that will take place within the regulatory floodway.

Wetlands were delineated in April 2024, and a river gage analysis was completed on April 22, 2025, in order to inventory aquatic resources on site. Figure 16 shows the delineated wetlands near the Learning Center and marina. Table 15 summarizes the delineated wetlands present within the project area.

Table 14 Delineated Wetlands within the Project Area

Wetland ID	Wetland Type	Area (acres)
Wetland1	Seasonally Floodplain Forest	0.12
Wetland 2	Deep Marsh	0.21
Wetland 3	Floodplain Forest	0.12

Aquatic invasive species are present within one mile of the project area. The DNR lists the Mississippi River Pool 2 as infested with zebra mussel, silver carp, bighead carp, Eurasian watermilfoil, grass carp, and flowering rush (reference (34)). Other aquatic invasive species have been observed within one mile of the project and are included in Table 16 (reference (35)).

Table 15 Invasive Species within One Mile of the Project Area

Common Name	Scientific Name	Type
purple loosestrife	*Lythrum salicaria*	Aquatic Plant
curly leaf pondweed	*Potamogeton crispus*	Aquatic Plant
watercress	*Nasturtium officinale*	Aquatic Plant
reed canary grass	*Phalaris arundinacea*	Aquatic Plant
European common reed, Phragmites	*Phragmites australis ssp. australis*	Aquatic Plant
narrow-leaved cattail	*Typha angustifolia*	Aquatic Plant
pale yellow iris, yellow flag iris	*Iris pseudacorus*	Aquatic Plant
rusty crayfish	*Faxonius rusticus*	Aquatic Animal
freshwater golden clam*	*Corbicula fluminea*	Aquatic Animal
red-eared slider	*Trachemys scripta elegans*	Aquatic Animal
zebra mussel	*Dreissena polymorpha*	Aquatic Animal
common carp	*Cyprinus carpio*	Aquatic Animal
goldfish	*Carassius auratus*	Aquatic Animal

* Observed within the project area.

There are no wildlife lakes, migratory waterfowl feeding/resting lakes, outstanding resource value waters within the project area or within one mile of the project. The Mississippi River is considered a waterbody of biological significance, a discussion is included in EAW Item 14.

ii. *Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells,including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.*

The project area overlies multiple aquifers including shallow unconsolidated layer, Saint Peter Sandstone, Franconia Formation, Prairie Du Chien-Jordan, and Mount Simon aquifers. During an onsite investigation within the project area, groundwater was encountered between 11 to 25 feet below the ground surface near the Marina, and at 30 to 38 feet below the ground surface west of the Marina buildings (reference (36)). The groundwater encountered at shallow depths was in the unconfined surficial layer. Regionally within Ramsey and Dakota counties, the Saint Peter Sandstone aquifer is present. The thickness of the Saint Petere Aquifer is approximately 50 to 60 feet thick and has unconfined flow to the Mississippi River (reference (37)). The Prairie Du Chien-Jordan aquifer consists of dolomites and sandstone and ranges in thickness from 190 to 230 feet thick (reference (37)). The Prairie Du Chien-Jordan aquifer is used as a drinking water source in greater Minneapolis-St. Paul metropolitan area. The Franconia-Ironton-Galesville aquifer consists of three parts: Franconia Formation, Ironton

Sandstone, and Galesville Sandstone. The aquifer is not heavily used in Ramsey and Dakota counties. The Mount Simon aquifer is the deepest of the aquifers in Ramsey County. Groundwater in the Mount Simon aquifer flows from east to west towards a pumping zone in Hennepin County (reference (37)).

The Minnesota Spring inventory identifies one spring present within the project area. The Marina Spring (MN62:A00012) is a contact bed plane spring in the Platteville formation (reference (38)). Other springs are present along the bluff of the Mississippi River and Minnesota River. No other springs were observed during onsite investigations.

Water wells are present within the project area. The Minnesota Department of Health maintains the Minnesota Well Index (MWI). The MWI identifies nine wells within the project area (reference (39)). The majority of the wells are sealed monitoring wells. Table 17 provides the unique identification number from the MWI, the status of the well, and the well use.

Table 16 Minnesota Well Index Wells

Well ID	Status	Well Use
569725	Sealed	Monitoring Well
569726	Sealed	Monitoring Well
139035	Active	Public Supply/non-community, non-transient
235559	Sealed	Commercial
569724	Sealed	Abandoned

There are wellhead protection areas located within the project area or within one mile of the project.

b. *Describe effects from project activities on water resources and measures to minimize or mitigatethe effects in Item b.i. through Item b.iv. below.*

i. *Wastewater - For each of the following, describe the sources, quantities and composition ofall sanitary, municipal/domestic and industrial wastewater produced or treated at the site.*

1) *If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water andwaste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.*

Wastewater from the proposed project buildings will be conveyed via subsurface sanitary sewer to the existing City of Saint Paul sanitary sewer system, part of the MET Council Environmental Services regional treatment system. The RLC campus and Marina buildings will gravity flow to a central point and then be pumped via lift station up Crosby Fram Road and connect with the Welcome Station sanitary sewer service. From there, the wastewater will be conveyed to public infrastructure by one of two connection alternatives:

- Alternative 1: Wastewater from sanitary sewer will be routed northeast along existing Shepard Road via lift station to an existing manhole within Youngman Avenue West.

- Alternative 2: Wastewater from sanitary sewer will be routed north perpendicular to existing Shepard Road via gravity sewer and through a privately owned lot to connect to the existing Sandrock tunnel at Norfolk Avenue and South Wheeler Street. Additional coordination with property owner(s) and the City of Saint Paul staff would be needed to determine the feasibility of this alternative.

The kitchenette may incorporate pretreatment of wastewater by using a grease trap interceptor prior to discharging into the sanitary sewer network. In general, wastewater will be domestic in nature and not require additional onsite pretreatment.

Calculations to estimate a sewer availability charge (SAC) have been completed using the Metropolitan Council SAC Estimate tool for 16 units. Sewer capacity at each proposed connection will need to be evaluated by the City of Saint Paul to determine if a connection can be made given current sewer demands and availability within the existing system at that connection.

2) *If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for sucha system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion.*

The project would not utilize a SSTS; wastewater would be directed to the Saint Paul sanitary sewer system.

3) *If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigateimpacts. Discuss any effects to surface or groundwater from wastewater discharges,taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.*

The project will not discharge treated wastewater from the project area; rather, wastewater will be discharged to the City of Saint Paul sewer connection to the Metropolitan Council Environmental Services (MCES) regional treatment system. At the Metropolitan Water Resource Recovery Facility, wastewater is treated and discharged to the Mississippi River in Saint Paul.

ii. *Stormwater - Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post construction including how the project will affect runoff volume, discharge rate and*

change in pollutants.Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific best management practices to address soil erosion and sedimentation during and after project construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments orare classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.

Stormwater flows would follow similar drainage patterns as currently observed in the project area. Stormwater runoff on the top of bluff would flow to a shallow filtration basin and either flow to existing outfalls or flow to treatment basins at the bottom of the bluff. Runoff at the bottom of the bluff will also be directed to an filtration basin prior to discharging to the Mississippi River. Crosby Farm Road would receive upgraded stormwater infrastructure, as stormwater currently flows untreated to the Mississippi River. Ecological restoration is planned throughout the project area to reduce peak stormwater. Areas would be converted from non-native turf grass to native vegetation communities. The proposed changes to stormwater management and ecological restoration would improve stormwater runoff water quality, reduce peak runoff rates, and reduce erosion along the bluff.

Runoff from the project area would be directed to stormwater basins, treated, and discharged to the Mississippi River. In undisturbed and re-forested areas of the project, runoff would not be treated before discharging to the Mississippi River. The stormwater flow rates and water quality from re-forested areas would match existing conditions and would meet CRWD requirements for rate control, volume reduction, and water quality. Stormwater basins would match or improve discharge rates for rate control. For areas flowing to stormwater basins, 1.1-iches of runoff over new and reconstructed impervious surfaces would be infiltrated or alternatively treated prior to discharging from the project area. Alternatives to infiltration will be considered where soil and groundwater conditions are not favorable.

Stormwater infrastructure proposed for the project includes raingardens, filtration basins, permeable pavers, and enhanced native vegetation. The project's proposed improvements are designed to meet Sustainable Building 2030 Energy Standards.

The project is anticipated to disturb approximately 20 acres and will require NPDES Construction Stormwater General Permit (MNR100001) coverage. During construction, a stabilized construction entrance will be used to enter and leave the construction area. Silt fence and other sediment control best management practices (BMP) will be installed along the perimeter as outlined in the project's Stormwater Pollution Prevent Plan (SWPPP) and Erosion and Sediment Control Plans (ESCP). During construction, erosion control blankets, inlet protection, temporary sediment basins, sediment control logs, and other applicable BMPs will be utilized and placed as noted within the SWPPP and ESCP. All BMPs will be monitored and maintained to operate as described in the SWPPP. BMPs that are not functioning as intended will be repaired or replaced in a timely manner. Permanent stormwater infrastructure such as swales, flared end sections, stormwater pipes, and

catch basins will be constructed to convey stormwater to bio-filtration basins, permeable pavers, and bio-infiltration basins prior to discharging offsite. As noted above, the Mississippi River is impaired for TSS and nutrients. The SWPPP developed for the project will be designed not to contribute to or exacerbate the impairments. BMPs will be placed to reduce sedimentation to the Mississippi River.

iii. *Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe anywell abandonment. If connecting to an existing municipal water supply, identify the wells tobe used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should theappropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.*

The project may appropriate groundwater during construction. Temporary dewatering of the building foundations and installation of the pier may be needed depending on the construction method. Dewatering would occur for a short duration and is not expected to exceed one million gallons per year. Groundwater within the project flows from north to south to the Mississippi River. If dewatering is needed, the water would be discharged to the Mississippi River.

After construction is complete, the project will not require any water appropriation. As discussed in EAW Item 6, the project would source water from Saint Paul Regional Water Services.

iv. *Surface Waters*

a) *Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.*

The project will not impact delineated wetlands as the site is developed. Prior to construction activities, BMPs will be installed to avoid sedimentation of wetland. Given that the project would not impact wetlands, the implications for climate change are expected to be minimal. Stormwater

will be managed to not increase the runoff rate from the project, which includes wetlands. Stormwater basins will be constructed to prioritize infiltration, which may improve the local water table for the wetland within the project area.

b) *Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicialditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering thewater features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.*

The project would minimize impacts on the Mississippi River and its inlets. The USACE and DNR would regulate impacts to the Mississippi River. The USACE will regulate impacts below the ordinary high-water mark (OHWM) of the Mississippi River, which is 691.19' AMSL. The DNR regulates impacts below the Ordinary High-Water Level (OHWL), which is approximately 696.6' AMSL.

Impacts below the OHWM would be limited to the installation of supports for the docks that would be installed in the East and West Bay. The project would not impact the navigable channel of the Mississippi River. The City will coordinate with the USACE to determine if permitting would be required under Section 404 of the Clean Water Act. If required, the City will submit a permit application to the USACE for review and approval.

Impacts below the OHWL would include the following:

- Installation of abutments for the proposed docks in the East and West Bay
- Removal of debris and grading along the shoreline between the East and West Bay
- Grading for the installation of a Bdóte overlook between the East and West Bay

The project will require a work in public waters permit from the DNR, but it is not anticipated that the project will result in more than 1 acre of disturbance below the OHWL.

Other impacts as a result of the project include altering the floodplain above the OHWL by grading and the construction of the buildings. A no-rise analysis was completed for the project to determine if the elevation of one percent annual chance (100 year) flood level in the Mississippi River would change with the project. The analysis included reviewing the approved regulatory floodplain model, known as the effective model, and updating it where appropriate to the current software version, correcting any obvious errors, incorporating new data of the existing landscape (i.e. newly collected bathymetry), and

incorporating any changes to the system since the model was created; ultimately resulting in an existing conditions model. The existing conditions model was then modified to incorporate the project conditions to determine if the proposed changes are expected to result in a change in the flood elevation outside of the allowable threshold. The results of this no-rise analysis indicate that the current proposed changes would not result in a significant rise in the flood elevation (less than federal definition of a rise, which is 0.0044 feet). However, the project will still likely warrant a Letter of Map Revision (LOMR) through the Federal Emergency Management Agency (FEMA) due to its expected impacts to the horizontal inundation extents, even though these impacts are not expected to result in a vertical rise of the flood elevation to FEMA threshold. Other expected regulatory requirements include meeting CRWD's requirement of no net fill below the 100-year elevation, which the project does not exceed.

The project is designed sustainably for building construction and stormwater infrastructure. Stormwater rate control and water quality are a concern with development projects. This project would meet or improve the amount of runoff reaching the Mississippi River by infiltration stormwater. Additionally, water quality would not be further degraded with this project. Stormwater would flow to stormwater devices that remove sediments and nutrients from the runoff before reaching the Mississippi River. The increases in precipitation that may be experienced from climate change and the impacts on stormwater from this project are expected to be minimal with the incorporation of low impact stormwater design.

The project would not impact the existing boat launch on the Mississippi River at the Marina. Construction may result in temporary delays to access the Marina, however, service would return to normal after construction.

13. Contamination/Hazardous Materials/Wastes:

a. *Pre-project site conditions - Describe existing contamination or potential environmental hazardson or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.*

Barr conducted a draft Phase I Environmental Site Assessment (ESA) in January 2025, and identified the following documented or potential environmental hazards in the project area (Figure 18):

- **Historical LUST site** – A release from a gasoline underground storage tank (UST) to soil and groundwater was reported in 1994 at Watergate Marina. The tank was removed, and the piping was drained and plugged. Excavated soils were backfilled into the former tank basin. During the remedial investigation in August 1997, total petroleum hydrocarbon (TPH)-gasoline range organics (GRO) was detected in soil samples at concentrations up to 6,200 mg/kg and benzene, toluene, ethylbenzene and xylenes (BTEX) compounds were detected in all soil borings with concentrations of benzene up to 58 mg/kg. BTEX and GRO were also detected in groundwater in exceedance of regulatory limits in 1997. No BTEX or GRO were detected in monitoring wells or an on-site drinking water well in 2009. The leak site was closed by the MPCA on March 23, 2009,

stating that contamination may still exist on the site.

- **Historical spills and releases into marina waters** – Ten spills or releases of petroleum products into the marina waters in the East Bay were reported from 1993 to 2011, and it is likely that others have occurred during the marina's long history that have not been reported.

- **Impacts from historical marina** – A small marina with associated buildings and other surface development was present at the southwest corner of the project site from at least 1957 to 1972. It is possible that fueling and boat repair were occurring at this marina similar to activities at the current marina. Undocumented fill material may also have been used to reclaim the marina. Based on the lack of regulations for petroleum and hazardous substance use and storage in the era the marina existed, releases that occurred were not likely remediated and fill materials may contain contaminants.

- **Historical spills and releases in the used oil storage area** – Significant staining was noted on the concrete around a 250-gallon used oil aboveground storage tank (AST) located outside the east side of the boat maintenance garage. Staining spanned two concrete joints and extended under the building wall.

- **Impacts identified during a limited Phase II investigation** – Barr performed a Limited Phase II Investigation in September and October 2024, collecting soil and groundwater samples in 15 locations at Watergate Marina and in the Crosby Farm Road right-of-way. Samples were analyzed for Resource Conservation and Recovery Act (RCRA) metals, polycyclic aromatic hydrocarbons (PAHs), diesel range organics (DRO), GRO, and volatile organic compounds (VOCs). Analytical results identified PAH and/or DRO impacts in exceedance of regulatory limits in surface soil at four locations at Watergate Marina (borings B-17, B-18, B-19, and B-40). DRO was also identified above regulatory limits in soil and groundwater in boring B-23 at the marina.

- **Septic mound and septic system** – A septic mound is located west of the boat maintenance garage. According to JP Lindrud, Watergate Marina General Manager, all floor drains and bathroom, shower, and laundry wastewater from the boat maintenance garage discharge to the septic mound. No drains are present in the boat storage garage. The septic system also includes a septic tank located near the southwest corner of the boat maintenance garage. Piping was observed in this area.

- **Trench drain in boat maintenance garage** – A trench drain was observed in the floor of the boat maintenance garage. According to JP Lindrud, the drain discharges to a collector tank that overflows to the septic tank located southwest of the maintenance garage, then to the septic mound west of the garage. The drain is cleaned periodically by marina staff, and Meyer Sewer occasionally pumps out the trench drain and tank. The pipe between the drain tank and the septic tank is currently blocked or broken and is being serviced. The potential exists for spills or releases of petroleum products or hazardous substances into the drain, and subsequent leaks from the drain, discharge piping, or septic tank since the garage

has been in use.

- **Undocumented fill between the marina bays** – According to an interview with Dr. John Anfinson, National Park Superintendent of the Mississippi National River and Recreation Area, in 1969 a developer acquired land within the project site and planned to build two 24-story apartment buildings and associated amenities. In 1973, the developer drove 800 steel pilings 90 feet down in the area between the two marina bays and began pouring parking ramp footings. By 1974 work stopped due to community opposition to the project. The historical aerial photographs show that previous marina development in this area was removed by 1972, and surface disturbance is evident. In the 1984 and 1991 aerial photos the area is overgrown with vegetation, but evidence of widespread disturbance is visible.

The project would be enrolled in the MPCA Brownfield Remediation Program, and a Response Action Plan (RAP) would be developed to address identified contamination.

b. *Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solidwaste including source reduction and recycling.*

Earthwork in the project area is expected to result in the export of thousands of cubic yards of soil mixed with debris, including concrete and other debris resulting from historical placement of undocumented fill at the project area. It is anticipated the majority of this material will be disposed of at a non-hazardous waste landfill.

After construction is complete, the project will generate municipal solid waste from the operation of the proposed facilities. The MSW would be hauled off-site by a City of Saint Paul licensed commercial hauler to a licensed transfer station.

c. *Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any new above or below ground tanks to store petroleum or other materials. Indicate the number, location, size and age of existing tanks on the property that the project will use. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverseeffects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.*

Three aboveground storage tanks (ASTs) are currently located in the project area as summarized in Table 18.

Table 17 Aboveground Storage Tanks within the Project Area

Tank Ref. #	Tank 1001	Tank 1002	Tank 1003
Type	AST	AST	AST
Interior or Exterior	Exterior	Exterior	Exterior
Location	East of Boat Maintenance Garage	Southern border by fueling dock	Southern border by fueling dock
Size, age, condition, registration	250-gallons, installed in 1987, fair condition, registered with MPCA in 1990	1000-gallons, unknown installation date, fair condition, unknown registration	6000-gallons, installed in 1995, fair condition, registered with MPCA in 1998
Materials currently stored	Used oil	Diesel	Gasoline
Containment devices/structures	No exterior secondary containment. May have integrated containment.	No exterior secondary containment. May have integrated containment.	No exterior secondary containment. May have integrated containment.
Runoff management/ sumps/drains	No runoff management	No runoff management	No runoff management
Tank tightness test results and methods	Unknown	Unknown	Unknown
History of tank cleanings	Unknown	Unknown	Unknown
Location of sludges generated by cleanings	Unknown	Unknown	Unknown
Leak site numbers	None	None	None
Analytical data	Unknown	Unknown	Unknown
Product pipelines and conduits	None	Fill hose from AST to fueling dock	Fill hose from AST to fueling dock

Hazardous material storage would include secondary containment of fuels during construction of the project. Fuels, oils, lubricants, and other materials typically used by construction equipment would be used during construction. No other chemicals or hazardous materials would be needed for or generated by the project.

Refueling spills and equipment failures, such as a broken hydraulic line, could introduce hazardous materials into soil and surface waters during construction. A spill could result in potentially adverse effects to on-site soils and surface waters. However, the amounts of fuel and other lubricants and oils would be limited to that needed by the equipment onsite. Supplies and equipment needed to quickly limit any spills or equipment failure would also be located onsite.

To minimize the likelihood of potential spills and leaks of petroleum and hydraulic fluids during project construction, equipment would be inspected daily for spill or leaks, fuels for construction would be stored at staging areas in upland locations, and equipment refueling and maintenance would be performed in locations away from surface water. In addition, the contractor would be required to use double-walled tanks or secondary containment for single-walled tanks used to store petroleum products onsite. Any bulk lubricants would also be stored with secondary containment protection. All petroleum and lubricant storage containers would be inspected on a weekly basis and the inspections would be documented.

d. *Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, anddisposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.*

Current environmental data indicate soil in the project area is non-hazardous. If hazardous levels of chemical impacts are identified during future investigations, those materials will be managed and disposed of at an appropriate licensed facility.

14. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

a. *Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.*

The DNR, in collaboration with the U.S. Forest Service, developed an Ecological Classification System (ECS) for hierarchical mapping and classification of Minnesota land areas with similar native plant communities and other ecological features. Based on the ECS, the project area is located in the Saint Paul-Baldwin Plains Subsection of the Minnesota and Northeast Iowa Morainal Section of the Eastern Broadleaf Forest Province (reference (40)). The Mississippi River cuts through the center of this subsection. Pre-settlement vegetation was primarily comprised of oak and aspen savanna communities; tallgrass prairie and maple-basswood forest were also common.

The project area consists of upland and floodplain forest, a small shallow marsh, and two constructed bays (East Bay and West Bay). Vegetation within the project area consists of native and non-native species. Dominant tree species in the project area include box elder, cottonwood, black locust, American elm, and Siberian elm.

The Mississippi River, including the project area, provides habitat for a diversity of organisms, such as fish, mussels and other aquatic invertebrates, birds, amphibians, and mammals. Some of the aquatic mammals present within the MNRRA corridor include the American beaver, river otter, mink, and muskrat (reference (41)). The Mississippi River Flyway is the migration corridor for a significant portion of North America's waterfowl and shorebirds. According to the NPS, approximately 105 species of water-based birds are present or likely present within the MNRRA corridor (reference (41)).

Pool 2 of the Mississippi River contains a diversity of fish species and is known to have large populations of walleye (*Sander vitreus*) and sauger (*Sander canadensis*) in the area (reference (42)). Other common fish species in Pool 2 include smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), white bass (*Morone chrysops*), bluegill (*Lepomis macrochirus*), crappie (*Pomoxis annularis*), northern pike (*Esox Lucius*), and catfish (*Ictalurus punctatus*) (reference (42)).

Extensive mussel surveys have been conducted in the Upper Mississippi River since the establishment of zebra mussels in the early 1990s. Historically, as many as 41 freshwater mussel species, including several federally and state-listed species, were found in the MNRRA Corridor (reference (43))According to the DNR Statewide Mussel Survey, 31 freshwater mussel species have been documented in the Mississippi River adjacent to the project area, the most common of which include: threeridge (*Amblema plicata*), threehorn wartyback (*Obliquaria reflexa*), mapleleaf (*Quadrula quadrula*), Wabash pigtoe (*Fusconaia flava*), and pippleback (*Cyclonaias pustulosa*).

Minnesota is home to over 2,000 known native wildlife species, and over 300 of these species have been identified as Species in Greatest Conservation Need (SGCN) because they are rare, their populations are declining, or they face serious threats that can cause them to decline and thus have populations below levels desirable to promote their long-term health and stability. Minnesota's Wildlife Action Plan 2015-2025 includes a habitat approach, which focuses on sustaining and enhancing terrestrial and aquatic habitats for SGCN in the context of the larger landscapes (reference (44)). The Wildlife Action Plan lays out the basis for the long-term vision of a Wildlife Action Network composed of terrestrial and aquatic habitat cores and ROWs to support biological diversity and ecosystem resilience with a focus on SGCN. As shown in Figure *15*, several Wildlife Action Network corridors are present in the vicinity of the project, including the Mississippi River portions of the project area. The Wildlife Action Network is a metric that can be used to assess buffers and connectors of habitats representing the diversity of habitat quality, supporting SGCN. As detailed by the DNR, "Consideration should be given to projects or activities that could result in the loss, degradation or fragmentation of habitat within the Wildlife Action Network, as habitat loss was identified as a substantial contributor to SGCN population declines" (reference (44)).

b. *Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, andother sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-_____) and/or correspondence number (MCE 2025-00837-02) from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.*

Barr queried the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) online tool on May 13, 2025, for a list of federally threatened and endangered species, proposed species, candidate species, and designated critical habitat that may be present within the vicinity of the project. The IPaC query identified nine federal species that could potentially be in the project area, including six endangered species, three proposed endangered or threatened species, and an experimental population, nonessential species. The IPaC query also indicated that the project area is located in proposed designated critical habitat for the rusty patched bumble bee (*Bombus affinis)*.

Federally proposed threatened or endangered species are species that the USFWS has determined are in danger of extinction throughout all or a significant portion of their range and have proposed a draft rule to list them as threatened or endangered. Proposed species are not protected by the prohibitions of the federal Endangered Species Act (ESA). A non-essential experimental population is a designation that refers to a population that has been established within its historical range under Section 10(j) of the ESA to aid in recovery of the species. Species designated as non-essential experimental populations are only protected by the federal ESA within a national wildlife refuge or a national park; the project area is not located within either of these resources.

The IPaC query also identified the bald eagle (*Haliaeetus leucocephalaus*) as potentially occurring within the project area. Bald eagles are protected under the federal Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The species identified in the IPaC query, and their typical habitats are summarized in Table 19.

Table 18 Federal Species Potentially Present within the Vicinity of the Project

Scientific Name	Common Name	Federal Status	Typical Habitat
Myotis septentrionalis	Northern long-eared bat	Endangered	Forested habitat in active season; caves and mines during inactive season.[1]
Lampsilis higginsii	Higgins eye (pearlymussel)	Endangered	Large rivers.[1]
Epioblasma triquetra	Snuffbox mussel	Endangered	Rivers with steady currents.[1]
Cumberlandia monodonta	Spectaclecase	Endangered	Large rivers with moderate to swift currents.[1]
Quadrula fragosa	Winged mapleleaf	Endangered	Large rivers.[1]
Bombus affinis	Rusty patched bumble bee	Endangered	Areas with consistent flowering vegetation throughout the growing season. Overwinter in upland forests and woodlands.[1]
Simpsonaias ambigua	Salamander mussel	Proposed Endangered	Swift flowing rivers and streams under flat rocks or under ledges of rock walls.[1]
Perimyotis subflavus	Tricolored bat	Proposed Endangered	Forested habitat in active season; caves and mines during inactive season.[1]
Danaus Plexippus	Monarch butterfly	Proposed Threatened	Areas with a high number of flowering plants. Presence of milkweed (*Asclepias* spp.) to complete the caterpillar life stage.[2]
Grus americana	Whooping crane	Experimental population, non-essential	Wetlands, lakes, ponds, rivers, and agricultural fields.[3]
Haliaeetus leucocephalaus	Bald eagle	Protected under the Bald and Golden Eagle Protection Act	Bald eagles inhabit forested areas near large lakes and rivers.[1]

1 (reference (45))
2 (reference (46))
3 (reference (47))

The DNR's Natural Heritage Information System (NHIS) database was reviewed through the DNR's Minnesota Conservation Explorer in March 2025 to determine if any state or federally protected species have been documented within the vicinity of the project area. Table 20 summarizes the federal and state endangered or threatened species that have been identified within one mile of the project area and their associated habitats in Minnesota. The NHIS database query also identified records of special state concern species within one mile of the project area. While these species are tracked by the DNR, they are not legally protected under the Minnesota Endangered Species Statute.

As noted in Table 20 , three of the species identified in the IPaC query have been documented within the project area (Higgins eye, northern long-eared bat, and tricolored bat), and one species (rusty patched bumble bee) has been documented within one mile of the project (Appendix 1).

Table 19 Natural Heritage Information System Database Records of State or Federally Protected Species Documented within One Mile of Project

Scientific Name	Common Name	Type	State Status[1]	Federal Status[1]	Typical Habitat[2]	Documented in Project Area
Arcidens confragosus	Rock pocketbook	Mussel	END	NL	Large rivers.	No
Cyclonaias tuberculata	Purple wartyback	Mussel	END	NL	Medium to large rivers.	Yes
Elliptio crassidens	Elephant-ear	Mussel	END	NL	Large rivers.	No
Lampsilis higginsii	Higgins eye	Mussel	END	END	Large rivers.	Yes
Lampsilis teres	Yellow sandshell	Mussel	END	NL	Large rivers.	No
Megalonaias nervosa	Washboard	Mussel	END	NL	Large rivers.	No
Plethobasus cyphyus	Sheepnose	Mussel	END	END	Large rivers.	No
Reginaia ebenus	Ebonyshell	Mussel	END	NL	Large rivers.	No
Tritogonia verrucosa	Pistolgrip	Mussel	END	NL	Large rivers.	Yes
Actinonaias ligamentina	Mucket	Mussel	THR	NL	Medium to large rivers.	Yes
Alasmidonta marginata	Elktoe	Mussel	THR	NL	Small to large rivers.	No
Ellipsaria lineolata	Butterfly	Mussel	THR	NL	Large rivers.	No
Eurynia dilatata	Spike	Mussel	THR	NL	Littoral zone of lakes or small to large rivers.	Yes
Lasmigona costata	Fluted-shell	Mussel	THR	NL	Medium to large rivers.	No
Pustulosa nodulata	Wartyback	Mussel	THR	NL	Large rivers.	Yes
Theliderma metanevra	Monkeyface	Mussel	THR	NL	Medium to large rivers.	No
Truncilla donaciformis	Fawnsfoot	Mussel	THR	NL	Large rivers.	Yes
Leptodea leptodon	Scaleshell	Mussel	Watchlist	LE	Medium to large rivers.	No
Hybopsis amnis	Pallid shiner	Fish	END	NL	Medium to large rivers.	Yes
Notropis anogenus	Pugnose shiner	Fish	THR	NL	Littoral zone of lakes and small rivers.	No

Scientific Name	Common Name	Type	State Status[1]	Federal Status[1]	Typical Habitat[2]	Documented in Project Area
Emydoidea blandingii	Blanding's turtle	Turtle	THR	NL	Calm, shallow waters with rich, aquatic vegetation for foraging and adjacent sandy uplands for nesting.	No
Carex formosa	Handsome sedge	Vascular plant	END	NL	Mesic hardwood forests and fire dependent forests.	No
Carex plantaginea	Plantain-leaved sedge	Vascular plant	END	NL	Mesic hardwood forest.	No
Juglans cinerea	Butternut	Vascular plant	END	NL	Mesic hardwood forest.	No
Berula erecta	Stream parsnip	Vascular plant	THR	NL	Wet meadow/carr, non-forested rich peatland, small rivers.	No
Sagittaria montevidensis ssp. calycina	Hooded arrowhead	Vascular plant	THR	NL	Marshes and lake or river shores.	No
Myotis septentrionalis	Northern long-eared Bat	Bat	SPC	END	Mesic hardwood forests, fire dependent forests, floodplain forests.	Yes
Bombus affinis	Rusty patched bumble Bee	Insect	WL	END	Areas with consistent flowering vegetation throughout the growing season. Overwinter in upland forests and woodlands.	No
Perimyotis subflavus	Tricolored bat	Bat	SPC	Proposed END	Mesic hardwood forests and fire dependent forests.	Yes

1 END = endangered; THR = threatened; SPC = special concern, NL = not listed.

2 (reference (45))

As shown on Figure 15, several sensitive ecological resources are located within the vicinity of the project. The Mississippi River in the southern part of the project area is a DNR Lake of Biological Significance (Mississippi River U.S. Lock and Dam #2 Pool). This Lake of Biological Significance was given the rank of outstanding based on the quality of the fish populations present, which includes two species of special concern, pirate perch (*Aphredoderus sayanus*) and American eel (*Anguilla rostrata*). The entire project area is located in the Lower Minnesota River Valley Important Bird Area. This Important Bird Area, which includes the Minnesota River Valley, contains high quality bird habitat in a highly farmed area. The western boundary of the Crosby Lake Park Southwest Site of Biodiversity Significance, which has a ranking of "high" borders the project area, east of the Watergate Marina. A Silver Maple – (Virginia Creeper) Floodplain Forest native plant community, which has a conservation status of S3 (vulnerable to extirpation), is mapped within the Site of Biodiversity Significance (Figure 15).

c. *Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separatelydiscuss effects to known threatened and endangered species.*

The project would temporarily impact wildlife within the vicinity of the project area due to the presence of equipment, associated noise, and human activity during construction. Wildlife currently inhabiting the area are likely accustomed to noise and human activity, given the presence of roads and park users. However, even wildlife that are accustomed to human activity could abandon habitats within or near the project area in favor of similar habitat, which is abundant in the surrounding area Figure 15.

Construction of the RLC, Boathouse, Storage building, Marina, Welcome Station, multiple-use walking trails, and parking areas would require ground disturbance and vegetation removal, most of which is currently a mix of native and non-native species. Approximately 190 trees would be removed to facilitate project construction. As discussed in EAW Item 6 (Project Description), the final phase of the project involves site restoration. Native seed mixes, as described in Table 1, would be used to restore the following native plant communities:

- Southern floodplain forest (7 acres)
- Southern terrace forest (3.6 acres)
- Lowland deciduous forest (4.6 acres)
- Dry-Mesic oak-basswood forest (7 acres)
- Oak savanna (0.6 acres)

Site restoration would result in overall habitat improvements in the area by enhancing the presence of native species/plant communities, which would thereby benefit the native flora and fauna that depend on these habitats.

As discussed in EAW Item 6 (Project Description), a minimal amount of work would occur in the East Bay Marina and no work would occur within the main channel of the Mississippi River. As such, impacts to

the U.S. Lock and Dam #2 Pool Lake of Biological Significance and the Wildlife Action Network corridors in the same area are not anticipated. No impacts to Crosby Lake Park Southwest Site of Biodiversity Significance and associated Silver Maple – (Virginia Creeper) Floodplain Forest native plant community are anticipated from the project. The entire project area is located within the Lower Minnesota River Valley Important Bird Area. However, given the relatively small size of the project and that the Important Bird Area covers much of the Mississippi River and Minnesota River corridors, impacts from the project are anticipated to be negligible. Once site restoration activities are complete, the project area could provide improved bird habitat in the Lower Minnesota River Valley Important Bird Area.

As discussed in EAW Item 7 (Climate Adaptation and Resilience), future climate trends in the area indicate a slight increase in temperature and more variable precipitation events. These changes could potentially alter habitats/species composition somewhat and in turn alter the wildlife and fish species inhabiting those areas.

The USFWS Determination Key in IPaC was used to assess potential impacts to the northern long-eared bat and tri-colored bat, rusty patched bumble bee, and the Minnesota-Wisconsin Endangered Species Determination Key in IPaC was used to assess potential impacts to the other federally protected species identified in the IPaC query. To assess potential impacts to state protected species, a Natural Heritage Review request was submitted through the DNR Minnesota Conservation Explorer on October 4, 2024 (Project ID 2024-00837) and March 24, 2025, with an updated project area (Project ID 2025-00837-02). The impact determinations obtained through the IPaC determination keys and the Natural Heritage Review responses are provided in Appendix 1 and information from them is incorporated below.

Federal Protected Species

The project is located near Watergate Cave, which is an important hibernaculum for many bat species, including northern long-eared bats and tricolored bats. During the active season, trees in the project area likely serve as roosting trees for both bat species. Given the proximity of the Watergate Cave hibernacula and the need for tree removal to facilitate project construction, a may affect determination has been concluded for the northern long-eared bat and the tricolored bat.

Rusty patched bumble bees could be present in the project area foraging during spring and summer. Overwintering habitat could be present in the upland forested parts of the project area; however, the floodplain forest in the project area is not likely to provide suitable nesting habitat due to the presence of flooded or saturated soils, and the majority of the upland vegetation is dominated by invasive species. Given the potential for impacts to rusty patched bumble bees, should they be present in the project area, a may affect not likely to adversely affect determination has been concluded for this species.

Direct impacts to the five federally protected mussel species identified in Table 20 are not anticipated from the project given that no work would occur within the Mississippi River channel. The East Bay is regularly dredged to maintain the navigability of the marina and does not provide suitable habitat for mussel species. However, given the potential for indirect impacts to water quality during project

activities, a may affect determination was concluded for these species.

Given the lack of suitable habitat, impacts to monarch butterflies are not anticipated from the project, and a no-effect determination has been concluded for the species.

Whooping cranes are rare in the state of Minnesota, and the NHIS database does not track documented records of them. Given the rarity of the species in Minnesota and that no impacts would occur to whooping crane habitat, a no effect determination has been concluded for this species.

Bald eagles are not tracked by the DNR but are known to inhabit forested areas near the Mississippi River area. Impacts to bald eagles could occur should they be nesting within or adjacent to the project area. The USFWS bald eagle management guidelines indicate that activities within 660 feet of an active nest have the potential to disturb nesting bald eagles (reference (48)).

State Protected Species

Direct impacts to state protected mussel and fish species identified in Table 20 are not anticipated from the project, given that no work would occur in the Mississippi River channel. The East Bay does not provide suitable habitat for these species. In their Natural Heritage Review responses, the DNR indicates that a mussel survey would not be required if in-water work is limited to the East and West Bay.

Blanding's turtles could be present in the project area where suitable upland habitat is present. This project has the potential to impact this rare turtle through direct fatalities and habitat disturbance/destruction due to excavation, fill, and other construction activities associated with the project.

Direct impacts to the state protected vascular plants identified in Table 20 could occur should they be present in the project area in locations where ground disturbance would occur. A tree inventory was conducted across the project area and two state endangered butternut trees were identified. Impacts to these individuals are not anticipated, as they would be avoided and preserved during project construction. The tree inventory also documented the presence of 26 state special concern Kentucky coffee trees (*Gymnocladus dioicus*) individuals. To facilitate project construction, 6 Kentucky coffee tree individuals would need to be removed, while the remaining 24 would be avoided and preserved during construction.

Invasive Species

Based on the DNR database of terrestrial invasive plant species (May 2025), eleven terrestrial invasive plant species have been documented in the project area; their locations are shown on Figure 15 and include the following species:

- Black locust (*Robinia pseudoacacia*)
- White mulberry (*Morus alba*)
- Siberian elm (*Ulmus pumila*)
- Common burdock (*Arctium minus*)

- Common mullein (*Verbascum Thapsus*)
- Greater celandine (*Chelidonium majus*)
- Motherwort (*Leonurus cardiaca*)
- Spotted knapweed (*Centaurea stoebe*)
- Garlic mustard (*Alliaria petiolata*)
- Hoary alyssum (*Berteroa incana*)
- Narrowleaf bittercress (*Cardamine impatiens*)

Although these invasive plant species are already present in the project area, construction of the project could further their spread as a result of equipment and people coming to and from the project area.

d. *Identify measures that will be taken to avoid, minimize, or mitigate the adverse effects to fish,wildlife, plant communities, ecosystems, and sensitive ecological resources.*

As discussed above and in EAW Item 6 (Project Description), the project as a whole will have a net benefit on habitat for flora and fauna within the project area.

Potential impacts to federally or state protected species could be minimized by conducting surveys for particular species prior to construction, conducting certain construction activities seasonally, and/or through use of BMPs.

Impacts to northern long-eared bats and tricolored bats would be minimized by incorporating the following impact minimization measures:

- Avoiding removal of suitable roost trees within 0.25 miles of the hibernaculum entrance during spring staging (Apr 15 – May 14), pup season (June 1- Aug 15), and fall swarming (Aug 16 – October 31).
- Avoiding any vegetation removal within a 100-foot radius from the hibernaculum to prevent changes to the hibernaculum microclimate.
- Conduct tree removal between November 1st and April 14th.

Potential impacts to rusty patched bumblebees could be minimized by avoiding ground disturbing activities in areas of suitable habitat. As described above, project restoration activities would enhance native plant communities, while removing invasive species; this would improve overall foraging habitat for rusty patched bumble bees and other pollinators in the area.

To minimize potential impacts to federal or state protected mussel species and state protected fish species, BMPs would be employed to avoid or minimize impacts to water quality, as discussed in EAW Item 12 (Water Resources). To minimize the potential for indirect impacts to federal or state protected mussel species from water quality deterioration, the DNR states in their Natural Heritage Review responses that they would require the use of erosion prevention and sediment control BMPs throughout the duration of the project. Incorporation of these BMPs would also minimize potential indirect impacts to fish and other aquatic biota.

Impacts to bald eagles could be minimized by conducting a visual inspection for bald eagle nests not more than two weeks prior to the start of construction, if work would occur during the active nesting period for bald eagles (January 15th – July 31st).

To minimize potential impacts to Blanding's turtles, the DNR indicates in their Natural Heritage Review responses, that a Blanding's turtle avoidance plan would be required prior to conducting project activities.

To minimize the potential for impacts to state protected vascular plant species, the DNR indicates in their Natural Heritage Review response, that surveys for state protected vascular plants, particularly butternut and hooded arrowhead, would be required prior to conducting project activities. As noted above, a tree inventory conducted for the project identified two butternut trees. Impacts to these individuals are not anticipated, as they would be avoided during project construction. A survey for hooded arrowhead would be conducted in the summer of 2025 to document the presence of any individuals. In addition, the project would avoid disturbance to delineated wetlands.

The DNR also recommends the following measures for minimizing potential impacts to state special concern species:

- Avoid removal of Kentucky coffee trees. As noted above, six Kentucky coffee trees would be impacted by the project. However, impacts would be minimized by preserving the remaining 24 Kentucky coffee trees identified in the tree inventory. In addition, removal and management of invasive species would improve the habitat for Kentucky coffee trees.
- Avoid work within water from May through July to protect nesting mudpuppies (*Necturus maculosus*).
- If feasible, avoid tree and shrub removal from May 15th through August 15th to avoid disturbance to nesting Bell's vireo (*Vireo bellii*) birds.

To minimize the spread of invasive species, contractors would be required to comply with applicable Minnesota regulations, which could include measures such as cleaning construction equipment prior to arriving on site and upon leaving the site.

15. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or inclose proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

The Minnesota Office of the State Archaeologist (OSA) online Portal (reference (49)), as well as MnSHIP, Minnesota's Statewide Historic Inventory Portal (reference (50)), were reviewed to identify known cultural resources within a 1-mile study area around the project area. Barr gathered information about previously documented cultural resources as well as the environmental and cultural context of the region to assess the potential for the project to contain undocumented cultural resources. The Area of Potential Effect (APE) for archaeological sites is considered the area of proposed ground disturbance (project area). The APE for historic architecture accounts for resources within visual range of the project, and due to the topographical setting of the project, includes a ¼ mile buffer to the south of the project area and 500 feet to the north.

A review of the MnModel Phase 4, prepared by the Minnesota Department of Transportation (MnDOT) and available for reference through the OSA Portal, indicates that the project is in an area of high potential for containing precontact archaeological sites. MnModel is a GIS-based statistical predictive model that helps to identify areas of pre-1837 archaeological site potential throughout the state of Minnesota. River bluffs and terraces would have been desirable habitation sites due to the close proximity to fresh water and aquatic resources, as well as providing a good vantagepoint for observing the surrounding area for game and/or trespassers. This location also provided an ideal location for post-contact military operations at Fort Snelling, NRHP-listed resource.

Barr's background research identified ten previously recorded archaeological sites, four historic cemeteries, and 425 previously recorded historic architectural resources within 1-mile of the project area. One archaeological site is listed on the NRHP (21HE0099/Fort Snelling). The remaining seven sites are unevaluated for listing on the NRHP. There are 104 NRHP listed or eligible historic architectural resources, 321 unevaluated and ineligible properties within the 1-mile study area. Of those, seven NRHP listed, three unevaluated, and five ineligible resources are within visible range of the project.

- Figure 19 shows the locations of archaeological sites within the 1-mile study area.
- Figure 20 shows historic cemeteries within the 1-mile study area.
- Figure 21 shows historic architecture within the 1-mile study area.
- Table 21 lists archaeological sites and historic cemeteries within the 1-mile study area.
- Table 22 describes historic architecture within the project APE.
- Appendix 2 describes NRHP-listed and eligible historic architecture in the 1-mile study area.

Archaeological Sites

Ten previously recorded archaeological sites have been recorded within the 1-mile study area, one of which is listed on the NRHP (21HE0099/Fort Snelling) (Figure 19; Table 21). The remaining nine sites are unevaluated for the NRHP. None of these documented sites are within the project area. However, because the project area has not been previously surveyed, the 106 Group will conduct an archaeological survey of the project area in the summer of 2025 to determine whether archaeological resources are present.

In addition, four historic cemeteries, as documented in Vermeer and Terrell (2011) are recorded within the 1-mile, but not in or adjacent to the project area (Figure 20).

Site 21HE0099/Fort Snelling consists of both pre-contact and post-contact components. The post contact component is the site of historic Fort Snelling, a military fort constructed between 1820 and 1946. Fort Snelling Historic District is listed on the NRHP for its archaeological component as well as its historic architectural components (HE-FSR-00001/HE-FSR-00177) (see the Historic Architecture discussion below for more information). There are four NRHP-contributing archaeological features within the site, consisting of a non-commissioned officers family quarters privy, a schoolhouse, a reserve officers' quarters foundations and the second chapel building (reference (51)). The site was re-surveyed by Nienow Cultural Consultants, LLC (NNC) between 2021 and 2023 in support of a building development project by Fort Snelling Leased Housing Associated. NNC recovered over 3,000 artifacts (precontact and post-contact) and 20 post contact building features. However, no additional NRHP eligible features or sites were identified during this survey. This site is located on the west bank of the river (approximately 200 meters south of the project area, across the Mississippi River) and therefore would not be affected by the project.

Site 21RA0078/Jean Baptist and Pelagie Faribault Site is a post-contact trading post, ca. 1870-1930, consisting of an artifact scatter. The site was identified during a Phase I survey conducted by Two Pines Resource Group in 201 (reference (52)). This is likely the location of the alpha site 21Rae, which, because its location was unknown at the time of recording, is imprecisely mapped at the level of Pike Island. Site 21RA0078 occupies a smaller footprint on Pike Island. A limestone feature (scatter) in addition to 142 artifacts were recovered during this survey, including of ceramic (porcelain, creamware, pearlware), glass, hand-wrought nails, lead, and a ball clay pipe fragment (reference (52)).

Site 21DK0024/New Hope Cantonment (also called Cantonment St. Peter's) is a post contact military fort ca. 1820s. The fort was identified during a 1964 survey conducted by the University of Minnesota. In 2007, Thomas Shaw located the site on an unpublished sketch of the fort in the Minnesota Historical Society collections. The sketch depicts a complex of buildings including a central barracks that may have housed up to 144 soldiers (reference (53)).

Site 21DK0031/Sibley House/American Fur Company is a multi-component (pre-contact, contact and post-contact) site consisting of features and an artifact scatter. The pre-contact components include Paleoindian (lanceolate point), Archaic, and Woodland (Brainerd, Havana and Southeastern MN Late Pottery), in addition of faunal bone, lithic debitage, charcoal and FCR. The post-contact component includes an artifact scatter and the remains of several structures, ca. 1830-1860, representing a fur trading operation prior to the occupation of the Sibley house. Initially surveyed by Cougar Consulting in 1986, the site has been re-survey in 1995 and 1997 by the Minnesota Historical Society (MHS) (Clouse 1996), and in 2004 by Todd L. Kapler, Schoell & Madison, Inc (Breakey 2024), during which additional pre and post contact artifacts were recovered. The Sibley House is also a historic architectural resource that is listed on the NRHP (DK-MDC-00001), and this site is within the NRHP-listed Mendota Historic District (DK-MDC-00005).

Sites 21DK0017 and 21DK0018 form the Mendota Mound Groups I and II, respectively. This is a native American burial mound group, with mounds ranging from 26 to 100 feet in diameter, and between two and eight feet in height. Group I consists of eight circular mounds, and Group II consists of two oblong and eight circular mounds. First reported in 1882 by Winchell, and in 1999, the MHS conducted a geophysical investigation for subsurface anomalies in attempt to relocate the mounds. The MHS was unable to detect any of the mounds in Group I during this survey but detected one circular mound (mound #3) in Group II (reference (54)).

Site 21DK0066/St Peter's Cemetery is a burial site associated with St. Peter's Church, the oldest church in Saint Paul, MN. The first recorded burial dates to 1840. Unplatted remains were also encountered at this site, and additional unmarked burials are likely present, some potentially dating to the pre-contact period (reference (55)).

Site 21DK0080 is a small artifact scatter consisting of lithic debitage and faunal bone. It was identified during a 2007 survey conducted by HDR (reference (56)).

Site 21Rak is an alpha site consisting of the historic town of Rumtown, identified on an 1850 map of Fort Snelling, and located in Section 17 of Township 28N, Range 23W.

Four historic cemeteries have been documented by Vermeer and Terrell within the 1-mile study area (reference (57)) (Figure 19; Table 21). These cemeteries consist of the St Peters Cemeteries 1 and 2, the Resurrection Cemetery 1, and the Acadia Park Cemetery 1 and are recorded at the PLS Forty and Section levels and the exact locations are unknown, except for the Acadia Park Cemetery, which has been platted. However, all four historic cemeteries are located south of the Mississippi and Minnesota Rivers and would not be impacted by the project.

Table 20 Archaeological Sites and Historic Cemeteries within 1-Mile of the Project Area

Site Number	Resource Name	Resource Description	NRHP Eligibility	Location
21HE0099	Fort Snelling	Multi-component post-content fort and pre-contact artifact scatter	Listed	1-mile
21RAe	Pike Island	Post-contact trading post/alpha site	Unevaluated	1-mile
21RA0078	Jean Baptiste and Pelagie Faribault Site	Post-contact artifact scatter/trading post	Unevaluated	1-mile
21DK0024	New Hope Cantonment; Cantonment St. Peter's	Post-contact fort and artifact scatter	Unevaluated	1-mile

Site Number	Resource Name	Resource Description	NRHP Eligibility	Location
21DK0031	Sibley House/American Fur Company	Multi-component post contact homestead and trading post/pre-contact artifact scatter	Unevaluated	1-mile
21DK0017	Mendota Mound Group I	Mortuary/Burial Mound site	Unevaluated	1-mile
21DK0018	Mendota Mound Group II	Mortuary/Burial Mound site	Unevaluated	1-mile
21DK0066	St. Peter Cemetery	Mortuary Site (post-contact and possibly pre-contact)	Unevaluated	1-mile
21DK0080	No Name	Pre-contact lithic scatter	Unevaluated	1-mile
21RAk	Rumtown	Alpha site/historic townsite	Unevaluated	1-mile
MNCEMID 20209	St. Peters Cemetery 1/2	Historic Cemetery (PLS Forty Level)	N/A	1-mile
MNCEMID 20210	St. Peters Cemetery 2/2	Historic Cemetery (PLS Forty Level)	N/A	1-mile
MNCEMID 20221	Resurrection Cemetery 1/2	Historic Cemetery (PLS Section Level)	N/A	1-mile
MNCEMID 20219	Acadia Park Cemetery 1/2	Historic Cemetery (Platted at Site Level)	N/A	1-mile

Historic Architecture

Within the 1-mile study area, 425 historic architectural resources have been recorded (Appendix 2). Of the 425 resources, 104 are listed, or eligible for listing, on the NRHP, seven of which are within visual range of the project. These include one listed historic district that intersects the project area and six additional listed and contributing resources that do not intersect the project area but are within visible range (Figure 20; Table 22). The remaining 321 resources in the 1-mile area are either unevaluated or not eligible for listing on the NRHP.

In 2024/2025, the 106 Group conducted a historic architectural survey of the project's APE). To account for visual, auditory, and physical effects, including impacts due to the potential increase in traffic and parked vehicles, the recommended Area of Potential Effect for historic architecture was 500 feet surrounding the project area to the north and ¼ mile south due to the bluff land topography along the Mississippi River.

During the reconnaissance architectural history survey, 106 Group identified four properties that are 45 years in age or older (those built before 1980) within the recommended architectural history APE that

had not been evaluated within the last 10 years. Of those four, one is no longer extant, and three are not recommended for further intensive survey due to a lack of historical significance.

Within the recommended architectural history APE, two determined eligible properties, the Hidden Falls Park (RA-SPC-10549) and the St. Paul Grand Round (RA-SPC-11142), one National Historic Landmark (Fort Snelling National Historic Landmark), one State Historic Site (Old Fort Snelling Historic District), and one NRHP-listed historic district, the Fort Snelling Historic District (HE-FSR-00001) (also known as the Reconstructed Fort at Historic Fort Snelling (HE-FSR-00177), including six individual contributing properties (Building 1 (Commandant's House) (HE-FSR-0081); Building 2 (Officer's Quarters) (HE-FSR-0082); Long Barracks (HE-FSR-0127); Semicircular Battery (Half Moon Tower) (HE-FSR-0140); Northeast Wall (HE-FSR-0144); and Southeast Wall (Detail of Officer's Latrines) (HE-FSR-0145)) are present. Therefore, an assessment of effects study was undertaken to assess potential effects of the Project on historic properties. 106 Group recommends that the Project will have **no adverse effect** on historic properties.

Table 21 Historic Architectural Resources within Project APE

Resource Number	Resource Name	Resource Type	NRHP Eligibility
N/A	Fort Snelling National Historic Landmark	National Historic Landmark	N/A
N/A	Old Fort Snelling Historic District	State Historic Site	N/A
HE-FSR-00001/HE-FSR-00177	Fort Snelling Historic District	District	Listed
HE-FSR-00081	Building 1 (Commandant's House)	House	Listed (contributing resource to HE-FSR-00001)
HE-FSR-0082	Building 2 (Officer's Quarters)	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-0127	Long Barracks	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-0140	Semicircular Battery (Half Moon Tower)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-0144	Northeast Wall	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-0145	Southeast Wall	Structure	Listed (contributing resource to HE-FSR-00001)
RA-SPC-10547	Gannon's Restaurant	Building	Unevaluated; outside of visual range of project area
RA-SPC-10549	Hidden Falls Regional Park	Site	Determined Eligible
RA-SPC-11142	Saint Paul Grand Round	Parkway	Determined Eligible
RA-SPC-10550	Crosby Farm Regional Park	Site	Recommended Not Eligible (2025 survey)

RA-SPC-08088	Bridge 9489	Bridge	Determined Not Eligible (2025 survey)
RA-SPC-05941	Bridge 9490	Bridge	Determined Not Eligible (2025 survey)
RA-SPC-12024	Watergate Marina	Building	Determined Not Eligible (2025 survey)
RA-SPC-06327	The Manor	Building (non-extant)	Demolished
XX-ROD-00051	Trunk Highway 5	Roadway	Determined Not Eligible

NRHP-Listed and Unevaluated Historic Architecture within APE

The Fort Snelling Historic District/HE-FSR-00001 covers a 3,149 acre area along both east and west banks of the Mississippi River and includes the project area. This district is listed on the NRHP and consists of the historic Fort Snelling military reservation complex, an enclave of six contributing resources that are within visible range of the project on the west bank of the Mississippi River. The district also includes the surrounding area, and a number of contributing and non-contributing resources. However, while the project is within the viewshed of these extant contributing resources, the 106 Group recommended that the direct visual effects on Fort Snelling and the associated resources would be minimal due to the distance of the resource from the project area, significant vegetative screening, and the low-scale design of the proposed structures associated with the project.

The Fort Snelling site was originally purchased in 1805 by Lt. Zebulon Pike from the Dakota and functioned as a trading outpost for over a decade. In 1819, Josiah Snelling, colonel of the 5th Regiment, construction of the military fort began. Construction was completed in 1825, and the fort served as a military outpost until 1858, when it became inactive for several years until the beginning of the Civil War in 1861. After the war, Fort Snelling remained active as the headquarters for the Department of Dakota, which coordinated supply and troop distribution west of the Mississippi River. The fort was reconstructed between 1870 and 1900, and the new structures functioned as a military training century during the Spanish American War, World War I and World War II. Additional structures were constructed during this time to meet expanding needs. In 1946, after the World War II, Fort Snelling was closed as a military base; however, in 1996 the 88th USARCOM was stationed at the fort (reference (58)).

This historic district is significant under Criterion A for its significance in the area of military “the security and development of the northwest region and in the transformation of the United States Army from a small Frontier force to that of a major modern army.” (reference (58)). The periods of significance are 1819-1858 and 1861-1946.

The six contributing resources associated with the Fort Snelling Historic District that are within the project APE are located on the west bank of the Mississippi River (Figure 20; **Table**). The project would be within the viewshed of these resources. These buildings were constructed during the “Old Fort Snelling”, the initial construction of the fort between 1820 and 1858, and have been restored (by the State of Minnesota) to their original condition. Most of these buildings are constructed of native limestone and are long, single-story constructions, and have either hipped or gabled roofs and interior chimneys (reference (59)).

The Commander’s House (HE-FSR-00081) was constructed in 1822 and reconstructed in 1846 and is a

single-story Georgian style rectangular building with a stone foundation, a hipped roof, wood shakes and two interior brick chimneys. It was restored in 1977/1978 to its 1846 condition. The Officer's Quarters (HE-FSR-00082) is also a single-story rectangular structure constructed in 1824 and reconstructed in 1846. It has a wood frame, stone foundation, and hipped roof, with six interior stone chimneys. The resource was restored in 1972/1973 to its 1846 condition. Similarly, the Long Barracks (HE-FSR-00127) was constructed circa 1824 and is a single-story wood frame building with a stone foundation and a full-length porch. It was restored in 1973/1974 to its original condition. The Semicircular Battery/Half Moon Tower (HE-FSR-00140) is a rectangular, two-story building constructed circa 1820-1825. It includes Georgian style features, such as a symmetrical façade and rondel in the apex of the gable. This resource was restored in 1975-1978 to its original condition. The Northeast Wall (HE-FSR-0144) and Southeast Wall (HE-FSR-0145) were constructed circa 1820-1825 from limestone rubble masonry on a stone foundation, and enclose the eastern boundary of the fort. They were restored in 1970-1974 to their original condition (reference (59)).

The Saint Paul Grand Round/RA-SPC-11142 is within the project area and was determined eligible for listing on the NRHP. This resource consists of the system of parkways that connect the Mississippi River with Saint Paul's northern lakes, originally constructed in 1872. The portion of the parkway that intersects the project area runs along Shepard Road and Crosby Farm Road along the bluffs of the Mississippi River. Much of the trail is lined with trees; however, existing transportation infrastructure and, in some areas, residential and commercial infrastructure, are visible from the parkway.

Resource RA-SPC-10547 is historically known as Gannon's Restaurant, and is now the site of Buca Di Beppo, north of the project area on Gannon Road. The project area is outside of the viewshed for this property, and therefore, it was not evaluated as a part of the reconnaissance architectural history survey performed by 106 Group for this project.

Resource RA-SPC-10547 consists of the Crosby Farm Regional Park. This park, located at 2595 Crosby Farm Road, is a recreational area for hiking and bicycling along the Mississippi River and in vicinity of Crosby Lake and Upper Lake. The previous historic inventory form is not available for this resource, and but in the reconnaissance architectural history survey performed by 106 Group for this project, 106 Group recommended the resource not eligible for NRHP listing.

In addition to its NRHP-listed status, Fort Snelling is also a National Historic Landmark, eligible under Criterion 1 for providing an excellent example of connections between the military, political, economic, and social histories of the region (reference x). For example, the fort supported U.S. territory claims following the War of 1812, and helped to protect American interests in the fur trade during the mid-nineteenth century. Fort Snelling also played a role in the land cession treaties between the U.S. government and Native American tribes in the region, and provides insights into the history of slavery in the military, which was practiced at the fort between 1819 and 1858.

Fort Snelling is also nationally significant under Criterion 6 for its ability to yield information of scientific importance affecting concepts and ideas related to the military, economic, and social history, and provides insights into the experiences of marginalized groups, including enslaved people, within the context of a military and colonial hierarchy.

Summary and Conclusions

Potential impacts to archaeological resources may result from project construction. In order to

determine whether intact archaeological resources are present within the project area, the 106 Group will conduct a Phase I archaeological survey in summer of 2025, in accordance with the State Archaeologist's Manual for Archaeological Projects in Minnesota (reference (60)) and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (reference (61)). Project impacts to historic architectural resources could include changes to the setting, feeling and character of the environment surrounding the resource. Within the recommended architectural history APE, two determined eligible properties, the Hidden Falls Park (RA-SPC-10549) and the St. Paul Grand Round (RA-SPC-11142), one National Historic Landmark (Fort Snelling National Historic Landmark), one State Historic Site (Old Fort Snelling Historic District), and one NRHP-listed historic district, the Fort Snelling Historic District (HE-FSR-00001) (also known as the Reconstructed Fort at Historic Fort Snelling (HE-FSR-00177), including six individual contributing properties (Building 1 (Commandant's House) (HE-FSR-0081); Building 2 (Officer's Quarters) (HE-FSR-0082); Long Barracks (HE-FSR-0127); Semicircular Battery (Half Moon Tower) (HE-FSR-0140); Northeast Wall (HE-FSR-0144); and Southeast Wall (Detail of Officer's Latrines) (HE-FSR-0145)) are present. Therefore, an assessment of effects study was undertaken to assess potential effects of the Project on historic properties. 106 Group recommends that the Project will have **no adverse effect** on historic properties. The report was submitted to the SHPO, and a response requesting more information was received on May 08, 2025 (SHPO No. 2025-0912) (Appendix 3). The 106 Group re-submitted the report with the requested information on May 22, 2025, and a response is pending.

16. **Visual:**

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

Potential Visual Effects

The project is sited between Shepard Road and the Mississippi riverfront at Crosby Farm Regional Park in Saint Paul. Proposed construction would include the Welcome Station, RLC, Boathouse, Marina and Storage building. The project would include regrading, with the most intense efforts concentrated along the West Bay, where the surrounding uplands would be reshaped to minimize steep slopes.

Due to the river bluff topography, the project would be more visible from the south along and across the Mississippi River than it would be from the north, along the top of the bluffs. The Welcome Station building would be visible to commuters along Shepard Road and pedestrian and bicyclist users of the Sam Morgan Regional Trail, which runs parallel to the river along the bluff tops. However, the visibility of this site would not significantly alter the viewshed from these resources, as the existing environment includes residential and public buildings. The project may also be visible to visitors to Crosby Farm Regional Park to the east and Hidden Falls Park to the west. Both parks include non-motorist recreational trails between the blufftops and the riverfront. However, it is anticipated that the project would improve the aesthetic of the area.

Fort Snelling National Historic Landmark and Historic District overlooks the Mississippi River from bluffs atop its southern bank. This resource, listed on the National Register of Historic Places, is a military fort dating to the early nineteenth century, and is a historic site and park

open year-round to visitors. The setting of the resource consists of the historic structures of the fort complex, and the natural setting of the Mississippi River and bluff lands. The project would be visible from the portions of Fort Snelling Historic District, specifically, from the structures constituting Old Fort Snelling that are situated close to the river bluff edge across from the river from the project. From this perspective, the project riverfront structures and blufftop structure would be within the viewshed of the fort. However, dense vegetation provides partial visual screening around both the fort and project area. Further, the existing viewshed from Fort Snelling includes transportation infrastructure and structural development, and the project would therefore minimally impact the character of the setting surrounding the fort.

In June 2025, TenXTen created visual illustrations that digitally render the completed project onto the existing environment. The following renderings depict the visual environment after project construction.

Visual Rendering 1 Site Aerial View

Visual Rendering 2 View of the Welcome Station

Visual Rendering 3 *View of the Bdóte Overlook*

Visual Rendering 4 *View of the River Learning Center*

Visual Rendering 5 *View of the Cultural Overlook*

Visual Rendering 6 *View of the Marina and Cafe*

Mitigation

The proposed Welcome Station building would be constructed at low scale, partially built into the bluff, and the riverfront structures (the RLC, Marina , Boathouse and Storage facilities) would be recessed and built at a similar scale to existing structures. Dense foliage surrounding the structures would further screen the project and preserve the natural setting of the existing environment.

The objective of the project is to provide a resource connecting the community with the natural beauty of the Mississippi River setting, and to bring residents and visitors together to a safe and beautiful space that enhances understanding and appreciation of the local environment. The project, therefore, falls under the purview of Minnesota Rule Chapter 6106.0130 Subpart 8, which states that rails, access paths, and viewing areas associated with public recreational facilities are allowed within the bluff impact zone and shore impact zone.

17. Air:

a. *Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effectsfrom stationary source emissions.*

The project would involve the construction of up to six buildings, including a Welcome Station, RLC, Boathouse, Storage Facility, Marina with cafe, and a Marina Maintenance building. In addition, the project would include parking areas, an outdoor covered pavilion, multiple-use walking trails, and restoration activities to improve the natural environment within the project area. Operation of the project would result in emissions from building heating and cooling sources.

b. *Vehicle emissions - Describe the effect of the project's traffic generation on air*

emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimizeor mitigate vehicle-related emissions.

Construction of the project would result in intermittent and temporary on- and off-road mobile source emissions of criteria pollutants. These emissions generally include combustion emissions from construction machinery engines, land clearing activities, excavation using a backhoe excavator or rotary wheel ditching machine, construction vehicle emissions, and various off-road mobile source emissions. These emissions would be dependent upon weather conditions, the amount of equipment at any specific location, and the period of operation required for construction at that location.

Operation of the project may result in increased combustion emissions due to traffic from employee work vehicles. Small amounts of emissions would be associated with intermittent maintenance activities via mobile combustion.

Air pollutants from the construction and operation equipment would be limited to the immediate vicinity of the construction area and would be temporary. Measures would be taken to reduce vehicle idling to reduce emissions. Therefore, it is not anticipated that construction or operation activities would independently cause or significantly contribute to an emission level that alters the air pollution score (including for sensitive groups) or attainment status for any of the national ambient air quality standards (NAAQS).

c. *Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust andodors generated during project construction and operation. (Fugitive dust may be discussed under item 17a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize ormitigate the effects of dust and odors.*

Fugitive particulate emissions would be generated from the use of paved during construction. Additionally, dust generated from soil disturbing activities, such as earthmoving and wind erosion associated with land clearing activities, topsoil removal, and construction would occur. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic, vehicle types, and road surface characteristics. Emissions would be greater during dry periods and in areas where fine-textured soils are subject to surface activity. If construction activities generate problematic dust levels, the City of Saint Paul may employ construction-related practices to control fugitive dust such as application of water on unpaved areas subject to frequent vehicle traffic and covering open-bodied haul trucks and stockpiles.

Fugitive particulate emissions would also be generated from the use of paved roads during operation. The amount of dust generated would be a function of the same variables discussed above for construction emissions. If operational activities generate problematic dust levels, the City of Saint Paul may employ practices to control fugitive dust, such as applying water to unpaved areas subject to frequent vehicle traffic.

18. Greenhouse Gas (GHG) Emissions/Carbon Footprint

a. *GHG Quantification: For all proposed projects, provide quantification and discussion of*

project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to cometo that conclusion and any GHG emission sources not included in the total calculation.

Identified GHG emissions consist of direct emissions generated from equipment used for construction site preparation and utilities, building construction emissions, and those related to land use change.

Fuel usage was used to calculate construction emissions from equipment used for site preparation, site civil/mechanical utilities, and site electrical utilities. Emission factors used to calculate emissions from construction equipment are based on the EPA Center for Corporate Climate Leadership (CCCL) Emission Factors for Greenhouse Gas Inventories (reference (62)). GHG emissions associated with site preparation and utilities are approximately 887 metric tons carbon dioxide equivalent (CO_2e).

The GHG emissions associated with building construction were estimated on a per-square-foot basis for assumed building types, intended uses and general finish. The scope of the estimate is construction-phase greenhouse gas emissions for life cycle stage A5: Construction according to ISO 21930: 2017 Sustainability in Buildings and Civil Engineering Works. The proposed facility's construction-phase emissions for buildings were estimated using best-available per-square-foot benchmarking data provided in the 2025 Carbon Leadership Forum: The Embodied Carbon Benchmark Report: Embodied Carbon Budgets and Analysis of 292 Buildings in the US and Canada. The 100-year global warming potential (GWP) emissions for life cycle stage A5: Construction assumed the project's individual proposed building uses and each building's building gross-floor-area using the 75th-percentile value ("high") of typical building construction-related emissions (kg CO2e/m2 gross-floor-area) available in the benchmarking dataset, including both the structure and interiors (SEI scope). GHG emissions associated with building construction are approximately 307 metric tons CO_2e.

The project would generate minimal GHGs during operations. Annual inspection and maintenance emissions are anticipated to be minimal. Anticipated sources of energy consumption for project operations include the Welcome Center, RLC, Boathouse/Storage, and Marina. GHG emissions have been calculated for the Welcome Center based on the EPA CCCL Emission Factors for Greenhouse Gas Inventories (reference (62)). GHG emissions associated with energy consumption are approximately 248 metric tons CO_2e annually.

The project would convert a portion of existing undeveloped land to developed land. This conversion would reduce the natural carbon sink in the area. GHG emissions associated with temporary land use change during construction are approximately 201 metric tons $CO2_e$, while the GHG emissions associated with land use change during operations is approximately 121 metric tons CO2e/year. Emission factors were calculated for GHG emissions from land use change based on $CO2_e$ flux estimates from the EPA Draft U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2022 (reference (63)).

Table 23 and Table 24 summarize the GHG emissions for the project. Appendix 4 provides the detailed calculations.

Table 22 Construction Emissions

Emission Source	GHG Emissions (metric tons CO_2e)
Site Preparation	534
Site Improvements	211
Site Civil/Mechanical Utilities	70
Site Electrical Utilities	70
Welcome Center	167
River Learning Center	64
Boathouse and Storage	39
Marina Maintenance and Retail Building	37
Land Use Change	201
TOTAL	1,394

Table 23 Operations Emissions

Emission Source	GHG Emissions (metric tons CO_2e/year)
Welcome Center Energy Consumption	118
River Learning Center Energy Consumption	61
Boathouse/Storage Energy Consumption	41
Marina Energy Consumption	28
Land Use Change	121
TOTAL	149

b. *GHG Assessment*

i. *Describe any mitigation considered to reduce the project's GHG emissions.*

The City of Saint Paul is not proposing CO_2e mitigation for this project. However, the City of Saint Paul would consider adaptive mitigation for the construction site such as:

- Reduce any unnecessary clearing and grubbing
- Maintain tree canopy when feasible
- Practice vehicle and equipment maintenance

- Carpool when possible and turn off equipment when not in use

ii. *Describe and quantify reductions from selected mitigation, if proposed to reduce theproject's GHG emissions. Explain why the selected mitigation was preferred.*

The possible mitigation measures above could result in a small decrease in GHG emissions. These mitigation measures were selected based on typical construction protocols.

iii. *Quantify the proposed projects predicted net lifetime GHG emissions (total tons/#of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.*

The anticipated operational energy consumption and land use GHG emissions from the project are 149 tons/year, which is less than 0.001% of the total CO_2e emissions that were emitted in Minnesota in 2022 (reference (64)). The net annual lifetime GHG emissions from the project are very small compared to the state total, and therefore the effects from the project on achieving the Next Generation Energy Act goals are negligible. Nonetheless, the project is proposing a net increase in overall GHG emissions which would slightly impact Minnesota's GHG reduction goals.

19. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to statenoise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigatethe effects of noise.

Construction activities related to the project is expected to have minor noise impacts on the ambient environment and nearby sensitive receptors. The construction noise impacts will be associated with the proposed site development activities and building construction. The most significant potential noise source associated with the project construction will be the installation of pilings for structure foundations near the river. Other construction noises will be typical of general construction activity in the region, a mix of mobile equipment and general construction activity.

Construction noise-related impacts from the project are expected to be relatively short in duration and, therefore, have limited cumulative noise impact on nearby receptors. Construction equipment noise levels will typically be less than 85 dBA at 50 feet when equipment is operating at full load conditions. People at nearby residences and buildings may hear the construction equipment, but the overall impact will be relatively short-lived. No overnight construction operations are anticipated at this time, reducing the potential for negative construction impacts. The RLC location relative to the nearest residences provides terrain screening of potential noise sources for much of the site activity given the setback of residences from the bluff. The project will include construction sources on the bluff, which may not have the same terrain shielding, but will be consistent with typical construction projects occurring in the city.

The operation of the project, once completed, is expected to have minimal noise impact on ambient

sound levels. The operational noise impacts will be derived from general vehicle traffic accessing the project elements, HVAC equipment associated with the buildings, and human activities at the site.

1) Existing noise levels/sources in the area

The project area includes a mixture of existing noise sources. Traffic on nearby roadways, particularly Shepard Road and Highway 5, is the primary source of noise in the project area. Aircraft takeoff and landing patterns do not direct flights over the project site but are likely to provide some additional background noise. The existing Marina, visitors accessing the Marina, and visitors accessing Crosby Farm Park are additional sources of noise in the immediate vicinity of the project. Recreational and commercial river traffic also contributes to the overall noise environment. Much of the activity in the immediate area of the project (marina and river activity) is largely seasonal, while road and air traffic noise occur year-round.

There is potential for limited reductions to existing noise sources associated with the project. Crosby Farm Road will be reduced in size as will the Marina. The Marina capacity will decrease from approximately 160 slips to 121 slips. These reductions are likely to provide minor decreases in effects from existing traffic, potentially offsetting some of the increased activity associated with the project.

2) Nearby sensitive receptors

The nearest noise sensitive receptors, aside from future project users themselves, are split directionally. To the south, the nearest sensitive receptors are over 500' away on Pike Island trails across the Mississippi River. The nearest sensitive receptors to the north are apartments and residences over 500 feet to the north of most project activity, across Shepard Road and atop the river bluff (nearly 100 feet above the RLC site).

3) Conformance to state noise standards

Construction machines operate intermittently and the types of machines in use at a construction site change with the construction phase. If necessary, proactive measures will be used to reduce further noise levels during construction such that the maximum construction-related sound levels at the nearest sensitive receptors will be less than the state NAC-1 daytime L10 threshold of 65 dBA and L50 threshold of 60 dBA. Nighttime construction is not anticipated at this time. Therefore, the nighttime standards will not apply.

Project operations are not anticipated to include significant noise sources and are anticipated to be compliant with state standards.

4) Quality of life

Overall impacts on quality of life due to noise are expected to be minimal for the project. Construction activity will be of limited duration during daytime hours, followed by operations with overall minimal sound generation. Paired with an existing noise environment largely influenced by traffic, no significant noise-related impact to quality of life is expected to result from the project.

Potential Mitigation Measures:

Construction noise, while varying according to equipment in use, will be mitigated by the attenuating

effect of distance and the intermittent and short-lived character of the noise. Given that diesel engine exhaust noise is a major component of construction equipment noise, functional mufflers will be maintained on all equipment in order to minimize construction noise levels. Noise generated during construction will not be unusual in nature and will be similar to that which occurs during other public works type projects in the city (e.g., paving, trenching).

20. Transportation

a. *Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternativetransportation modes.*

The project area would primarily be accessed from Shepard Road and Crosby Farm Road. Shepard Road runs along the Mississippi River corridor from the county's southwestern boundary to Downtown Saint Paul. According to the MnDOT Traffic Mapping Application, Shepard Road had an average daily traffic count of 13,000 in 2024.

1) Existing and proposed additional parking spaces.

Approximately 139 parking spaces are currently available within the project area. These include 28 marina parking spaces, 50 trail lot spaces, and 61 street parking spaces on Crosby Farm Road.

The project would construct an additional 40 parking spaces. After construction is complete, there will be 33 spaces constructed for the NPS building, 30 spaces near the RLC, 60 additional spaces at the Marina, and 50 trail lot spaces.

2) Estimated total average daily traffic generated.

The project is estimated to generate an additional 525 vehicles per day, including employees, park visitors, and Marina patrons.

3) Estimated maximum peak hour traffic generated and time of occurrence.

During weekdays peak traffic is expected to generate 87 vehicles between the hours of 7:15 AM and 8:15 AM. Traffic is anticipated to be the heaviest on Saturday mornings with approximately 92 vehicles moving through the area.

4) Indicate source of trip generation rates used in the estimate

The majority of traffic generated is anticipated to come from the surrounding communities and the Twin Cities Metro area. The Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, was used to estimate the trip generation for the development.

5) Availability of transit and/or other alternativetransportation modes

Metro Transit is a public transportation system in Minneapolis and Saint Paul, Minnesota. As of 2025, the transit system consists of two light rail lines (Blue and Green lines) and six bus rapid

transit (BRT) lines (Gold, Orange, Red, A, C, and D lines). The eight lines connect Minneapolis and Saint Paul with surrounding communities. Route 87 is the nearest bus route to the project area. This route runs between the Rosedale Transit Center and Highland Village, along Fairview, Raymond, University, and Cleveland avenues. The nearest bus stop for the Route 87 line is located at Davern St & Norfolk Ave / Shepard Rd (Stop Number 51892), this stop is approximately 500 feet from the Welcome Station entrance.

The project area can also be accessed through the Sam Morgan Regional Trail, the riverside park trail, and from the Watergate Marina. The Sam Morgan Regional Trail follows Shepard/Warner Road along the east side of the Mississippi River from Crosby Farm Regional Park to Indian Mounds Regional Park. The riverside trail connects Crosby Farm Regional Park to Hidden Falls Crosby Park. Both of these trails would provide site access for walkers, runners, and bikers. As previously discussed, the Watergate Marina currently operates out of the East Bay and would provide boating access to the project area from the Mississippi River and the Minnesota River.

b. *Discuss the effect on traffic congestion on affected roads and describe any traffic improvementsnecessary. The analysis must discuss the project's impact on the regional transportation system.If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: http://www.dot.state.mn.us/accessmanagement/resources.html) or a similar local guidance,*

The Project would not generate more than 250 vehicles during peak hour traffic or exceed 2,500 daily trips. Therefore, a traffic impact study will not be prepared as part of this EAW.

c. *Identify measures that will be taken to minimize or mitigate project related transportationeffects.*

No minimization measures are proposed.

21. Cumulative potential effects: *(Preparers can leave this item blank if cumulative potential effects areaddressed under the applicable EAW Items)*

a. *Describe the geographic scales and timeframes of the project related environmental effects thatcould combine with other environmental effects resulting in cumulative potential effects.*

The geographic scale considered for the cumulative effects analysis includes a one-mile radius from the project. The analysis considered other projects under construction or known to be completing environmental review and permitting processes.

b. *Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographicscales and timeframes identified above.*

Past actions have contributed to the project area's existing landscape, which is summarized in EAW Item 6. Several sources of information were reviewed to identify present and reasonably foreseeable future

projects within the geographic assessment area. Additional projects that occurred within a one mile radius of the project area. The City of Saint Paul Capital Projects Map identified the following project located near the MRLC project.

- Sam Morgan Regional Trail Reconstruction: The City of Saint Paul has received Federal and local match funding for the reconstruction of the Sam Morgan Trail between Elway and Randolph and Lower Landing and Highway 10-61. The project will include trail reconstruction, development of trail nodes in Lower Landing, and installation of site amenities such as lighting, benches, bike racks, and litter receptacles. Reconstruction of the trail is on going and would be completed prior to the development of the MRLC project.

- Mississippi River Boulevard Project: The Mississippi River Boulevard Project is a stacked storm water system. This includes a constructed open creek channel alongside a pedestrian path that travels through a tunnel structure under Mississippi River Boulevard and into Hidden Falls Regional Park. The creek channel is an extension of the water feature central to the Highland Bridge Project collecting storm water throughout the development site and releasing it at a controlled rate into Hidden Falls. Pedestrians are able to visualize the water channel as it flows between the development site, over the falls, and through the Hidden Falls creek before delivery to the Mississippi River. The trail alongside the creek connects the network of trails within the Highland Bridge site to the Mississippi River Boulevard Regional Trail and into Hidden Falls Regional Park.

As part of the cumulative effects analysis, Barr reviewed the Minnesota Department of Transportation construction projects, Ramsey County website, and the Environmental Quality Board Monitor. No additional projects were identified within one mile of the project area.

c. *Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmentaleffects due to these cumulative effects.*

The cumulative effects analysis for the project assesses both negative and beneficial potential environmental effects. Overall, the project is intended to have a beneficial impact on the natural environment and is intended to better connect the community with the Mississippi River. These benefits are similar to the Sam Morgan Regional Trail project, which would improve pedestrian access to the MRLC project, and the Mississippi River Boulevard Project would enhance Hidden Falls Regional Park.

The projects identified in this cumulative analysis are not anticipated to have a negative environmental impact after construction is complete. During construction, there would be short-term disturbances that would temporarily disturb the surrounding community. These would include increased noise, traffic, visual impairments, GHG emissions, and temporary erosion. However, once construction is complete, the sites will be restored and are anticipated to benefit the community.

22. Other potential environmental effects: *If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environmentwill be affected, and identify measures that will be taken to minimize and mitigate these effects.*

No other potential environmental effects were evaluated.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** EnvironmentalAssessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

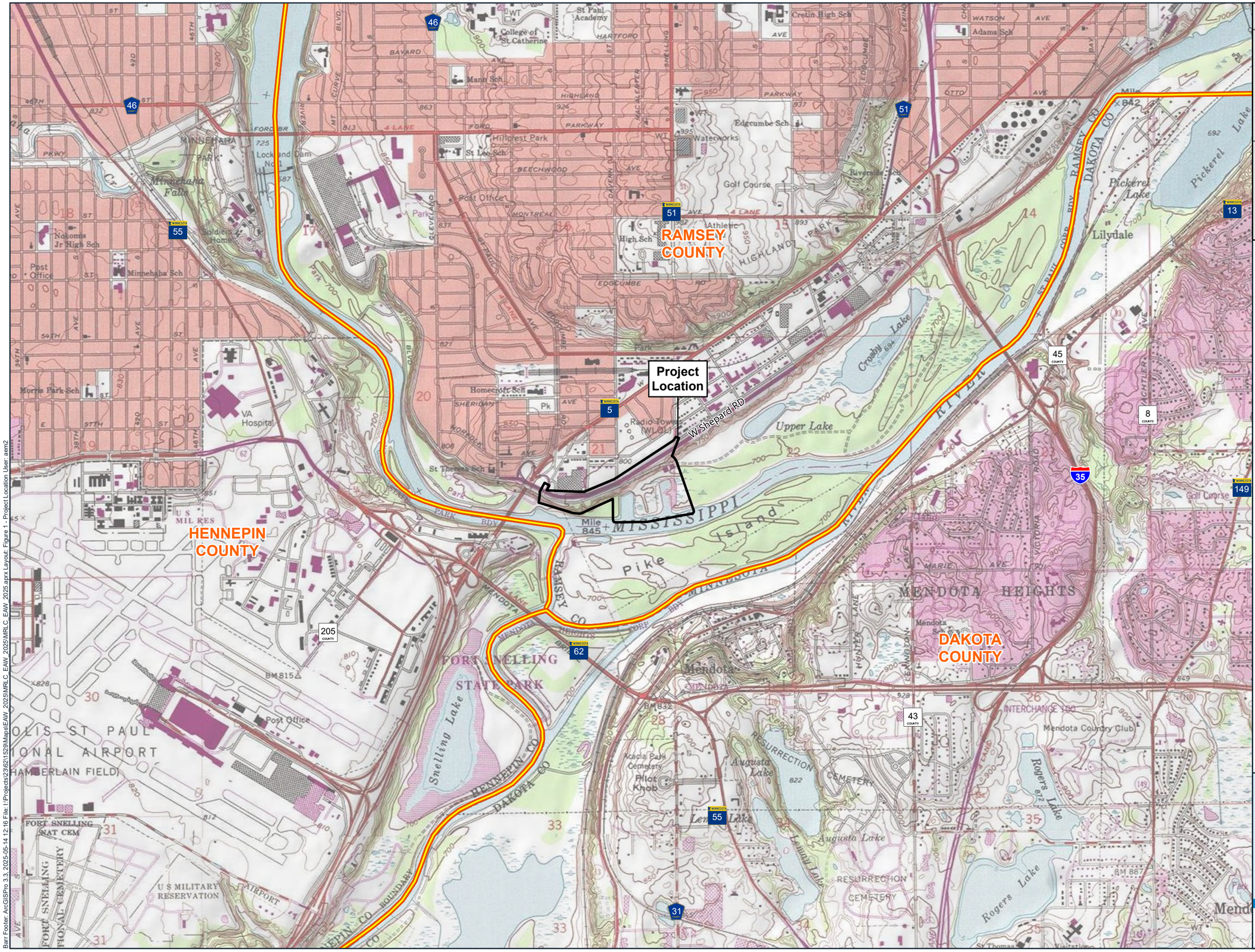
- The information contained in this document is accurate and complete to the best of myknowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60,respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature _____

Date October 7, 2025

Title Interim Director of Planning and Economic Development for the City of Saint Paul

Figures

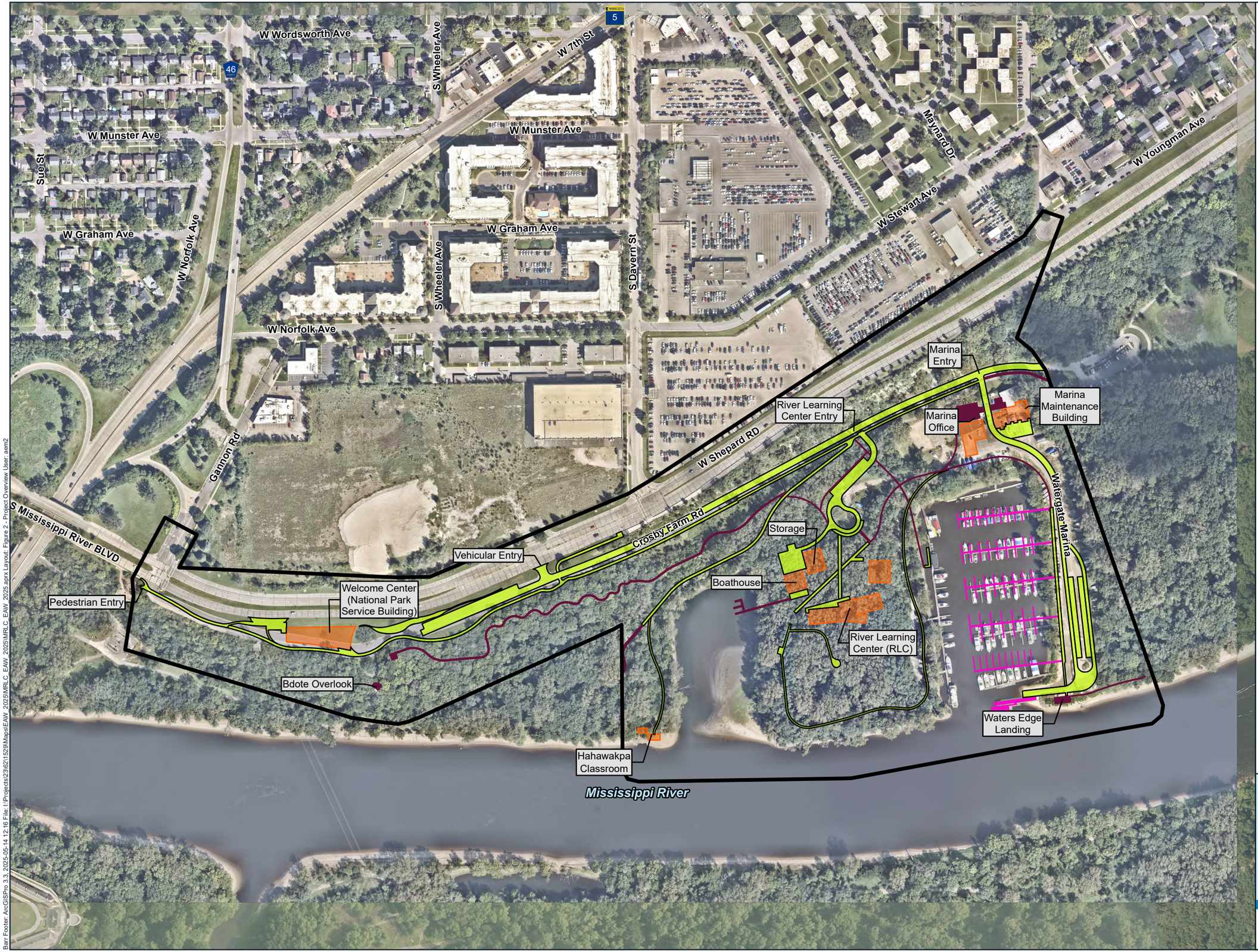


Project Location
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 1

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\6211\26\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 1 - Project Location User: aem2



Project Boundary
Building
Marina
Pavement
Pedestrian Path

0 150 300
Feet

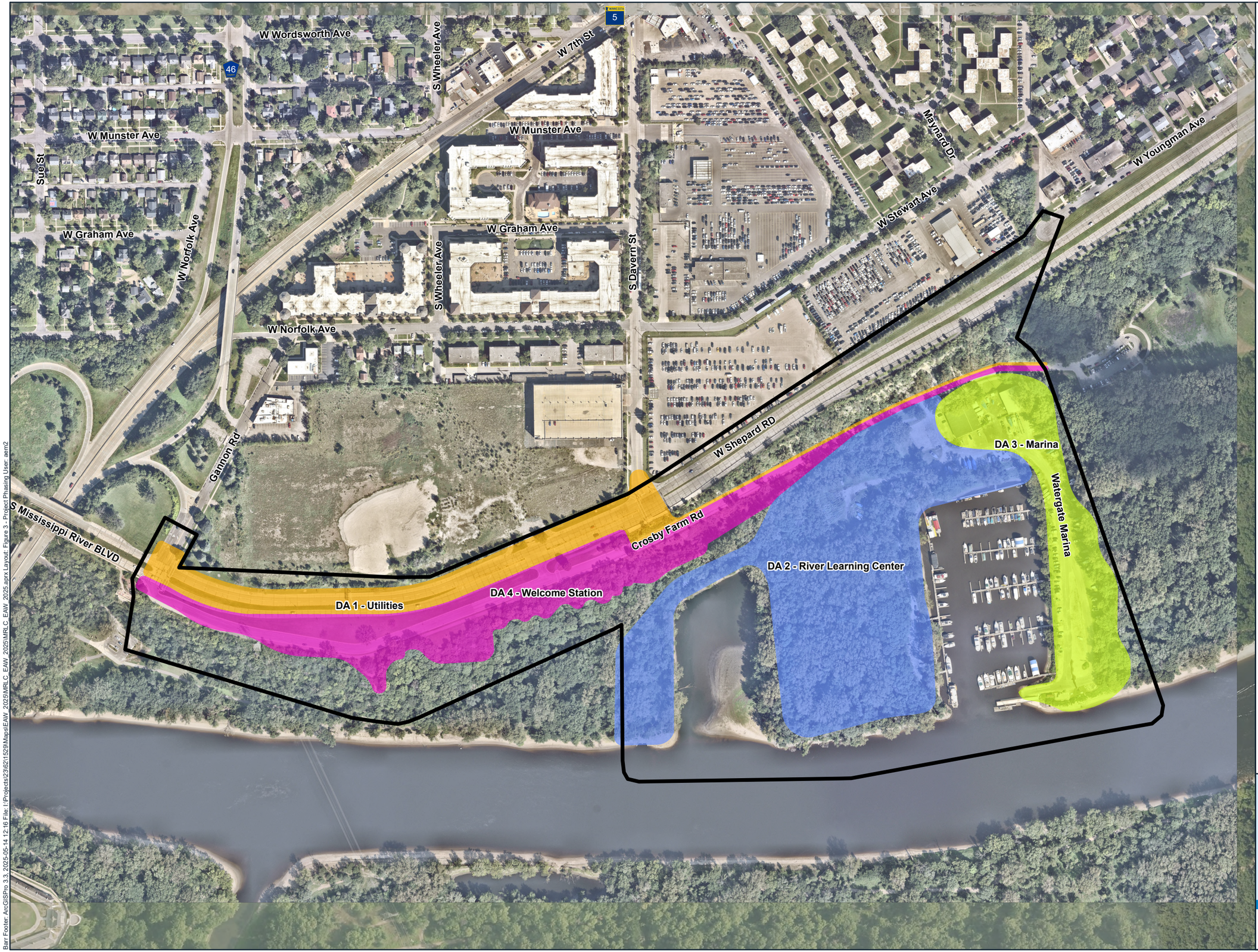
Imagery: Nearmap, 09/01/2024

Project Overview
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 2

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\62\11528\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 2 - Project Overview User: aem2



Project Boundary

Development Areas

- DA -1 Utilities
- DA-2 River Learning Center
- DA-3 Marina

Phase_Num

- DA-4 Welcom Station

0 150 300

Feet

Imagery: Nearmap, 09/01/2024

Development Areas
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 3

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\62\11528\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 3 - Project Phasing User: aem2

Project Boundary
Stormwater Basin
Sanitary Sewer
Storm Sewers

N

0 150 300
Feet

Imagery: Nearmap, 09/01/2024

Project Utilities
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 4

BARR

Barr Footer: ArcGISPro 3.3, 2025-06-12 10:33 File: I:\Projects\23\62\11528\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 4 - Project Utilities User: aem2

Project Boundary

Restoration Community

- Dry-Mesic Oak-Basswood Forest
- Lowland Deciduous Forest
- Oak Savanna
- Stormwater Habitat Feature

0 150 300

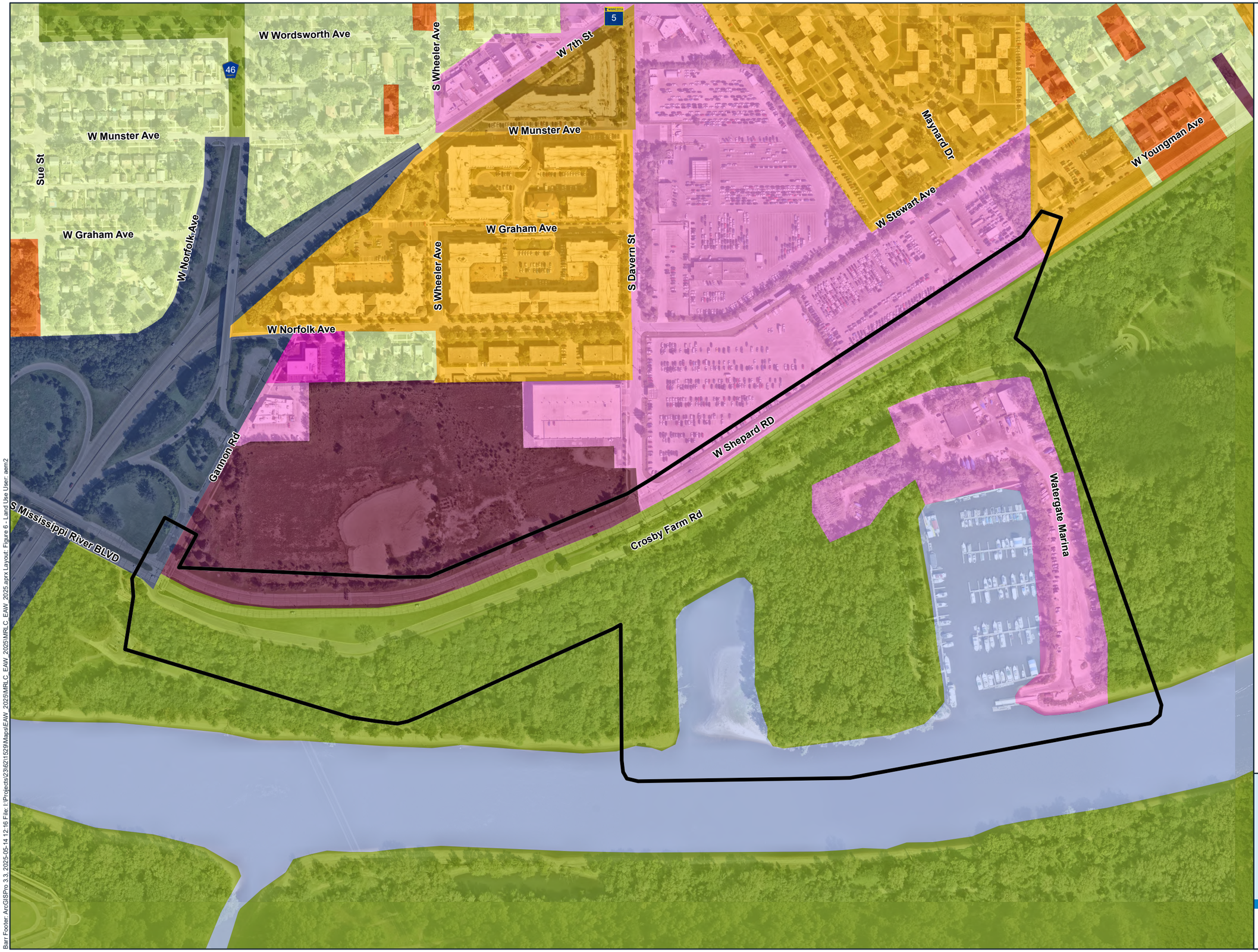
Feet

Imagery: Nearmap, 09/01/2024

Site Restoration
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 5

BARR



Project Boundary

Land Use - 2020 Generalized

- Major Highway
- Mixed Use Residential
- Multifamily
- Office
- Open Water
- Park, Recreational, or Preserve
- Retail and Other Commercial
- Single Family Attached
- Single Family Detached
- Undeveloped

N

0 150 300

Feet

Imagery: Nearmap, 09/01/2024

Land Use
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 6

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\6211\26\Maps\EAW_2026\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 6 - Land Use User: aem2

Project Boundary

Tree Species (# To Be Removed)

- American Elm - 5
- Basswood - 2
- Black Locust - 12
- Box Elder - 31
- Butternut - 2
- Cottonwood - 27
- Crabapple - 5
- Green Ash - 64
- Honey Locust - 11
- Kentucky Coffee Tree - 2
- Linden - 1
- Siberian Elm - 13
- Silver Maple - 12
- White Mulberry - 1
- Willow - 1

N

0 150 300

Feet

Imagery: FSA, 2023

Tree Removal
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 7

BARR

W Wordsworth Ave
S Wheeler Ave
T2
W 7th St
B2
W Munster Ave
Sue St
H2
W Graham Ave
W Norfolk Ave
RM2
S Wheeler Ave
T3
S Davern St
W Norfolk Ave
Maynard Dr
W Stewart Ave
T2
W Youngman Ave
W Shepard RD
Gannon Rd
S Mississippi River BLVD
Crosby Farm Rd
WatergateMarina
H1

Project Boundary

Zoning District

- H1,Residential
- H2,Residential
- RM2,Medium-Density Multiple-Family Residential
- T2,Traditional Neighborhood
- T3,Traditional Neighborhood

Floodplain Management Overlay Zoning

- FW - Floodway
- FF - Flood Fringe

0 150 300
Feet

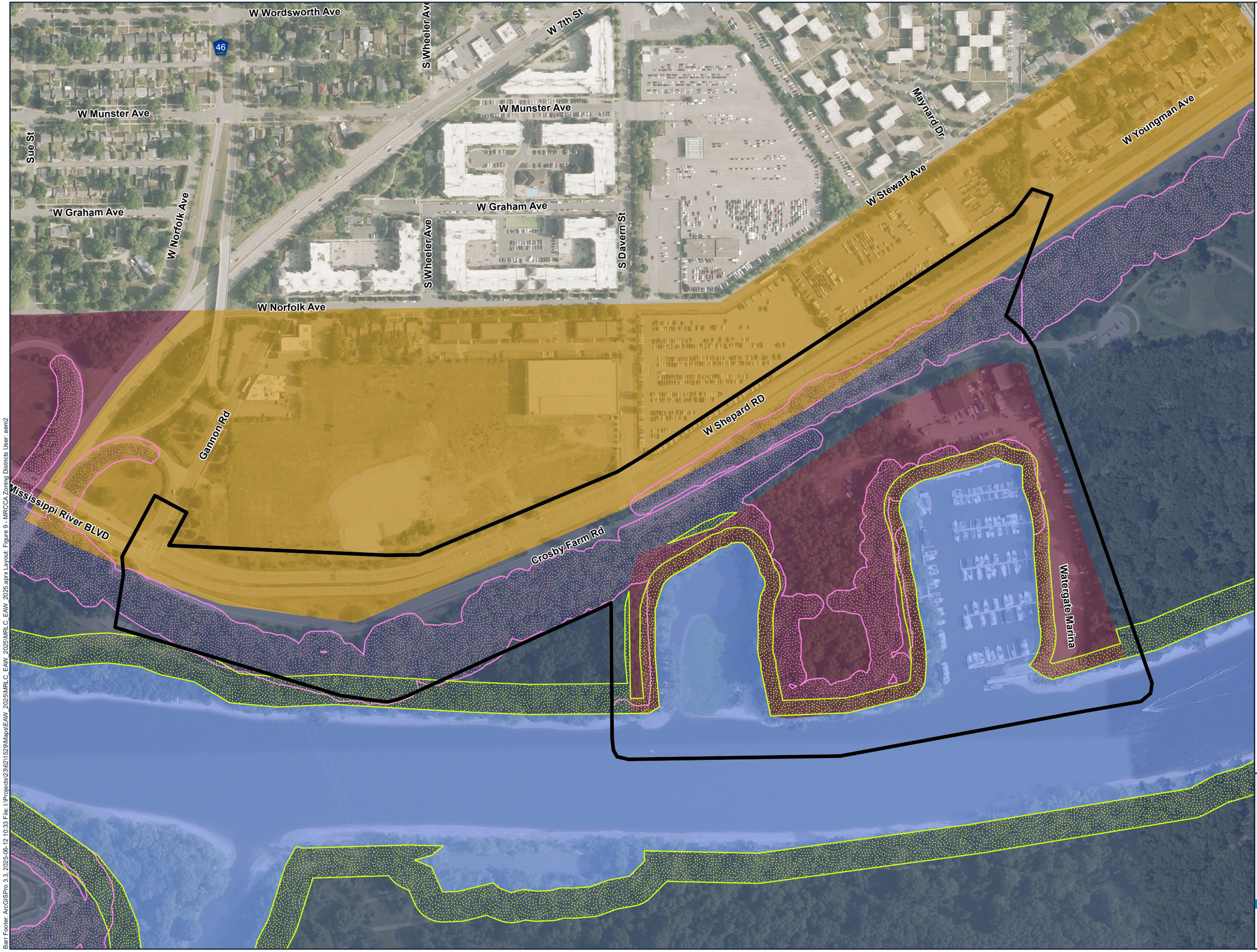
Imagery: Nearmap, 09/01/2024

Zoning
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 8

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\62\11529\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 8 - Zoning User: aem2



Project Boundary

Overlay Districts

MRCCA Shore Impact Zones (SIZ)

MRCCA Bluff Impact Zones (BIZ)

Mississippi River Critical Area Districts

CA-RN

CA-ROS

CA-RTC

Water

0 150 300

Feet

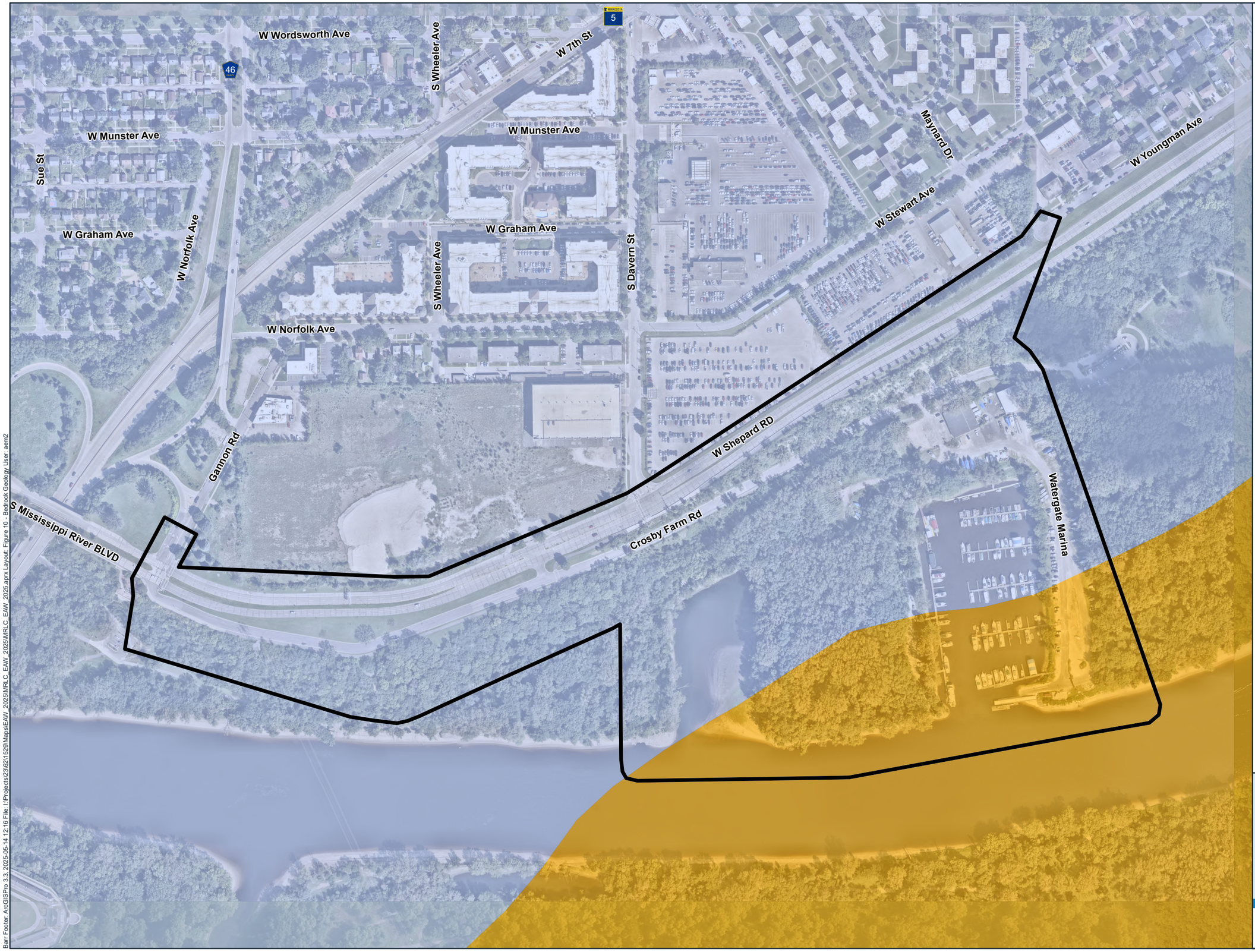
Imagery: FSA, 2023

MRCCA Zoning Districts
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 9

BARR

Barr Footer: ArcGISPro 3.3, 2025-06-12 10:33 File: I:\Projects\23\62\11529\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 9 - MRCCA Zoning Districts User: aem2



Project Boundary

Bedrock Geology

Ol	Ordovician: Prairie Du Chien (Dolomite and Sandstone)
Om	Ordovician: St. Peter - Platteville (Sandstone and Limestone)

*Bedrock geology data is from S-21 dataset from the Minnesota Geological Survey (MGS). This data was published in 2011.

N

0 150 300
Feet

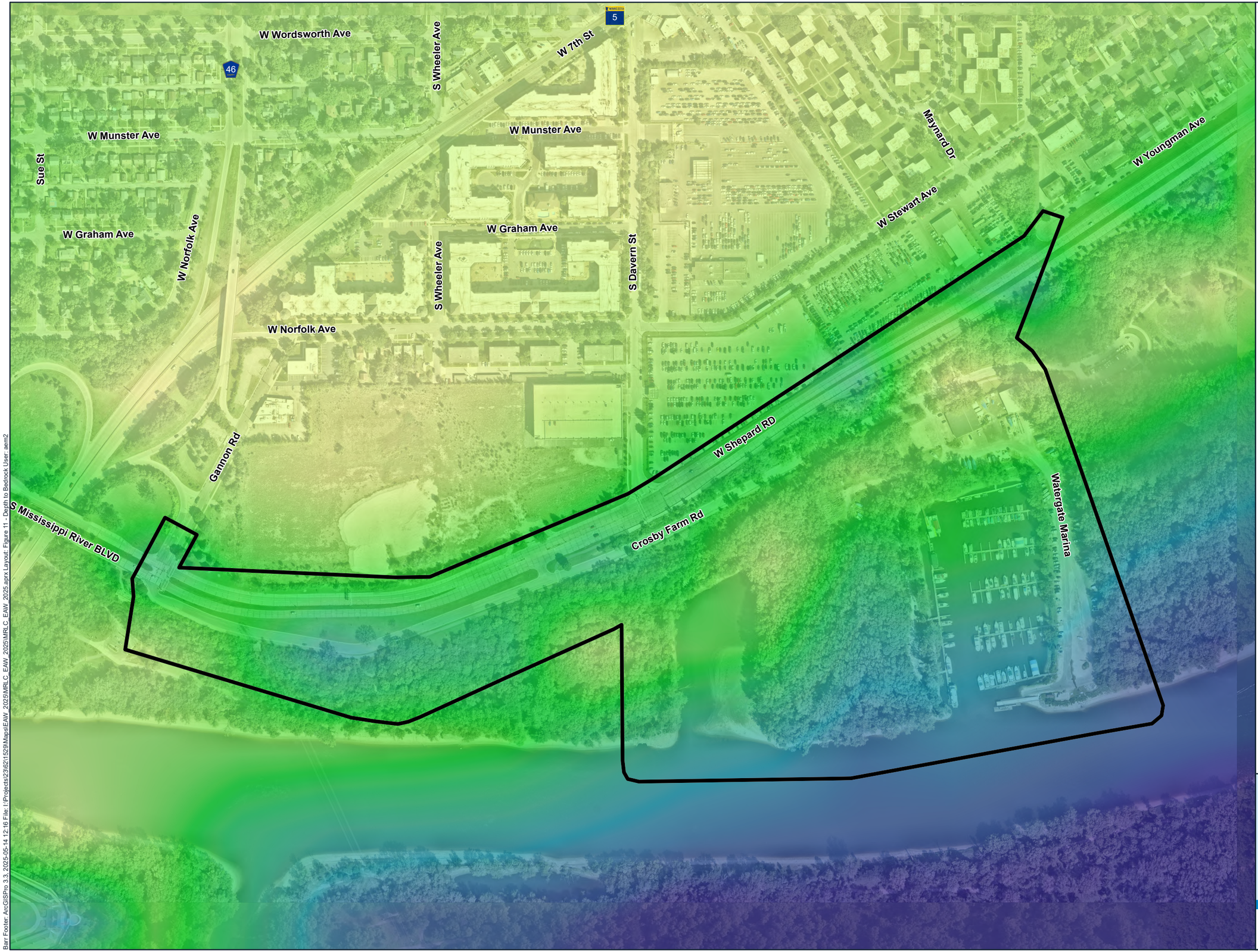
Imagery: Nearmap, 09/01/2024

Bedrock Geology
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 10

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\6211\529\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 10 - Bedrock Geology User: aem2



Project Boundary

Depth to Bedrock (ft) - Minnesota 2023

3

127

*Depth to bedrock data is from the Minnesota Geological Survey (MGS). This data was published in 2023 and updated on Nov 14, 2024.

0 150 300

Feet

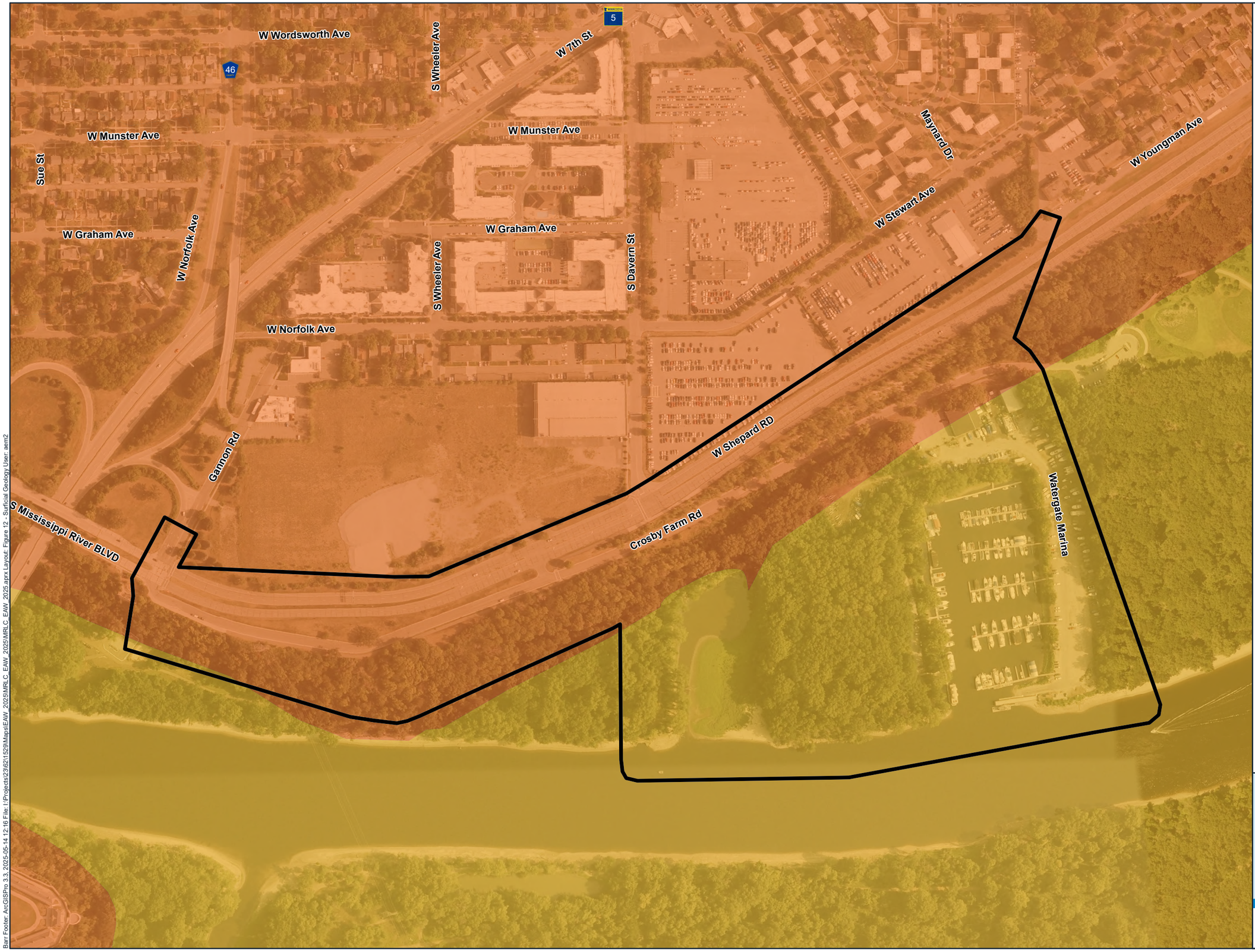
Imagery: Nearmap, 09/01/2024

Depth to Bedrock
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 11

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\6211\29\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 11 - Depth to Bedrock User: aem2



Project Boundary

Surficial Geology*

- AI — Holocene: Floodplain alluvium
- Te — Holocene: Terrace alluvium

*Surficial geology data is from D-01 dataset from the Minnesota Geological Survey (MGS). This data was published Feb 06, 2023 and was updated Oct 22, 2024.

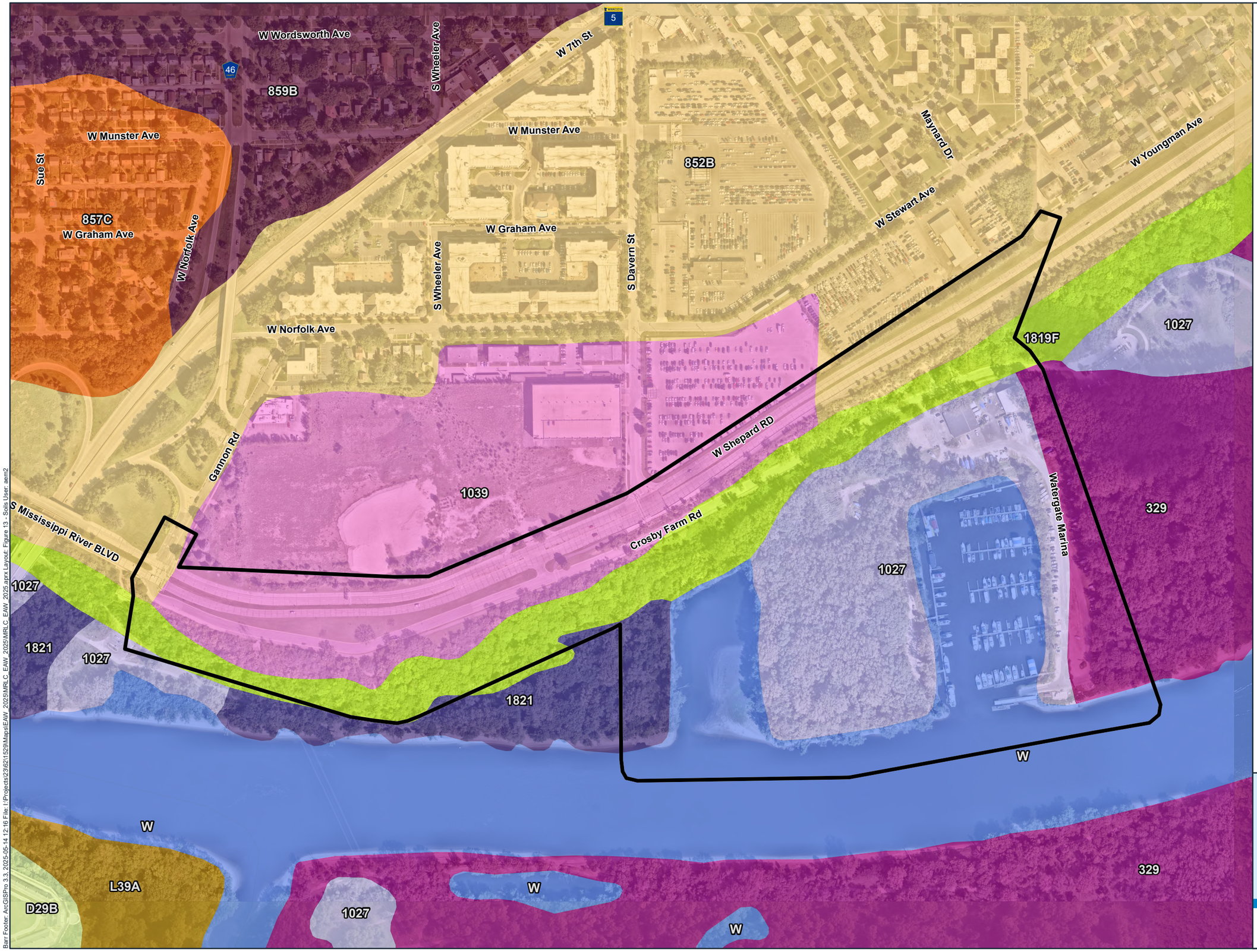
0 150 300
Feet

Imagery: FSA, 2023

Surficial Geology
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 12

BARR



Project Boundary

Soil Unit*

- 1027 - Udorthents, wet substratum
- 1039 - Urban land
- 1819F - Dorerton-Rock outcrop complex, 25 to 65 percent slopes
- 1821 - Algansee loamy sand
- 329 - Chaska silt loam
- 852B - Urban land-Copaston complex, 0 to 8 percent slopes
- 857C - Urban land-Waukegan complex, 3 to 15 percent slopes
- 859B - Urban land-Zimmerman complex, 1 to 8 percent slopes
- D29B - Urban land-Hubbard, bedrock substratum complex, 0 to 8 percent slopes
- L39A - Minneiska fine sandy loam, 0 to 2 percent slopes, occasionally flooded
- W - Water

*Soil data was obtained from the Soil Survey Geographic Database (SSURGO) on 03/18/2025.

N

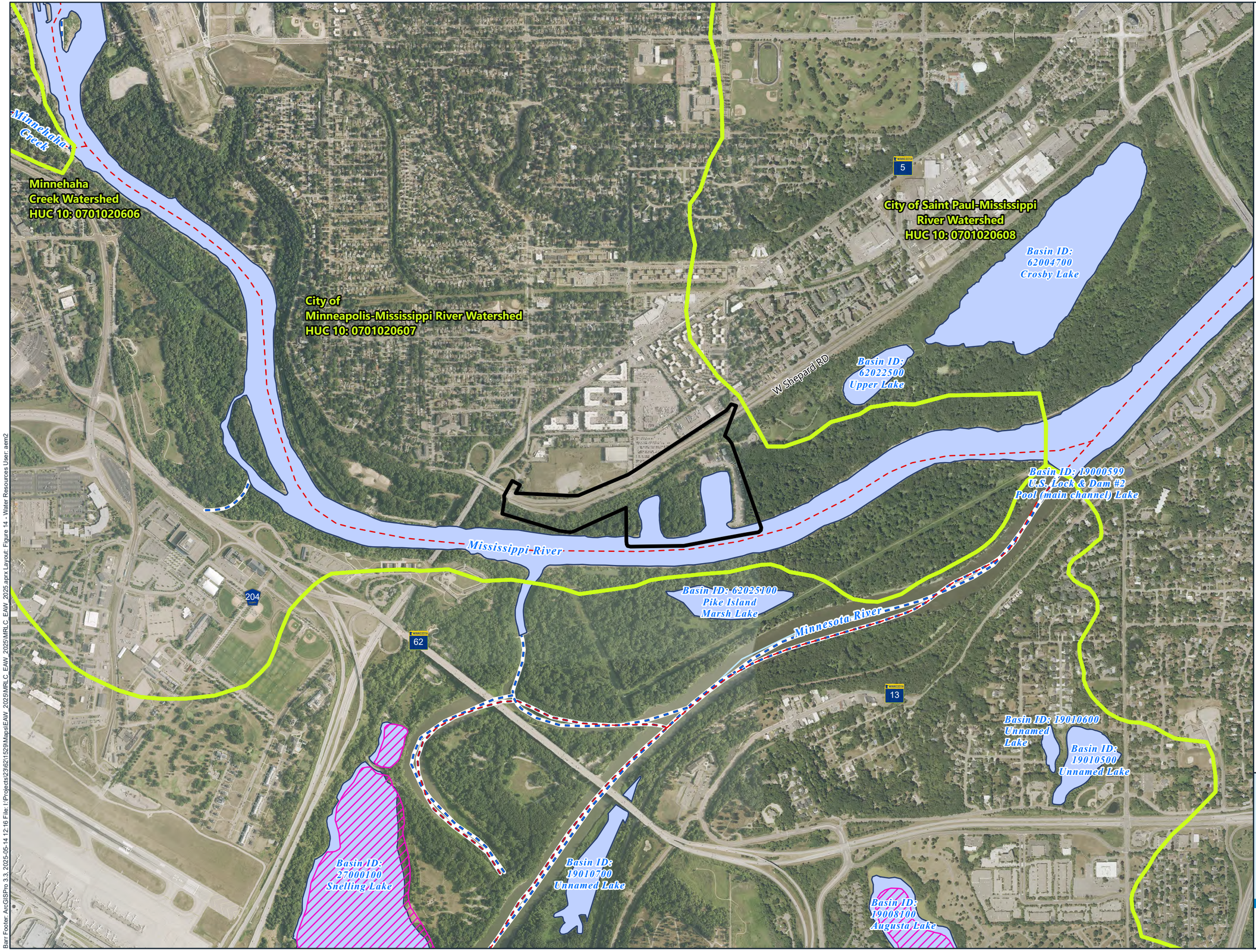
0 150 300
Feet

Imagery: Nearmap, 09/01/2024

Soils
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 13

BARR



Project Boundary
Stream (Order 3)
Impaired Stream - 2024
PWI Waterbody
Impaired Lake - 2024
Watershed (HUC 10)

N

0 600 1,200
Feet

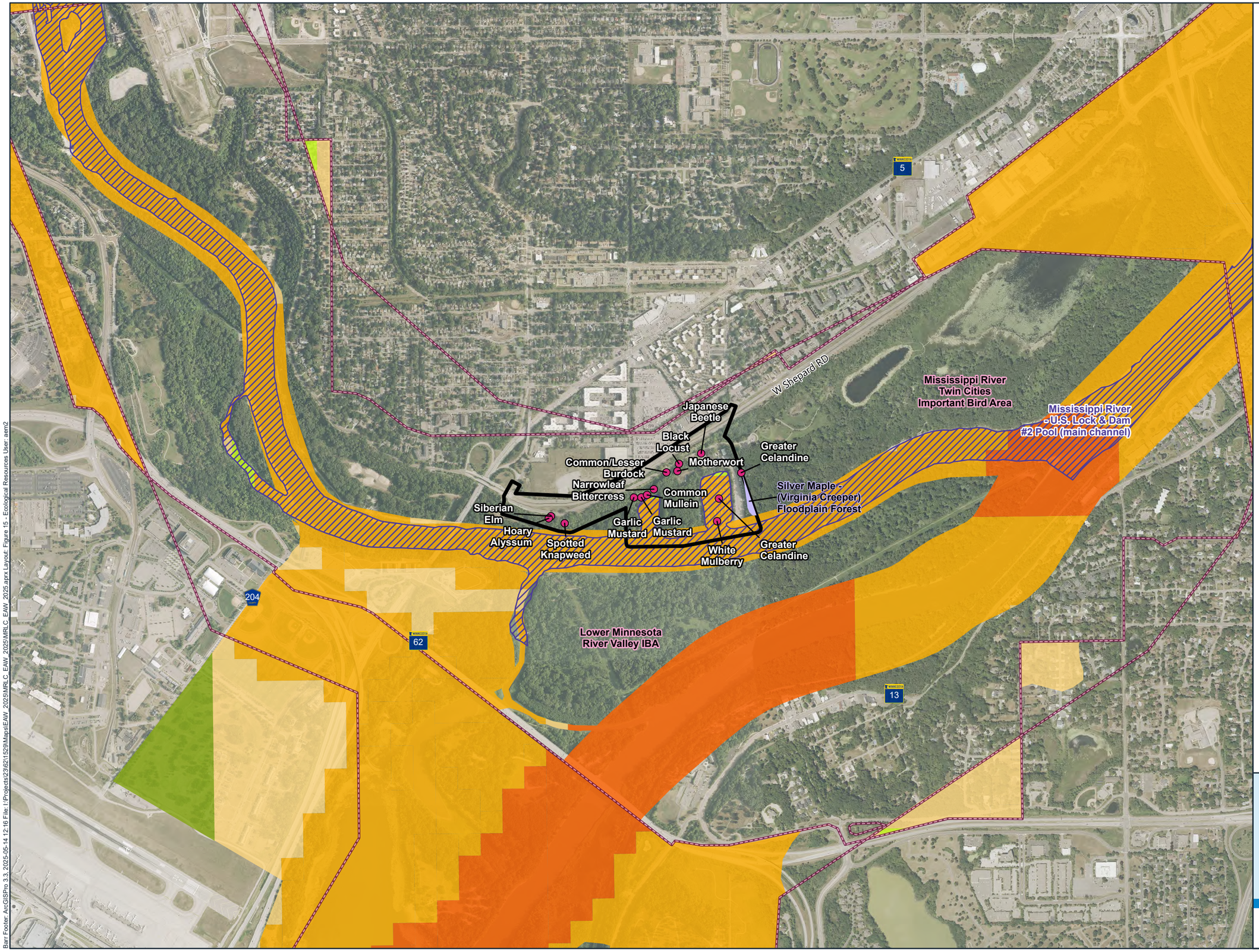
Imagery: FSA, 2023

Water Resources
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 14

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\6211529\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 14 - Water Resources User: aem2



Project Boundary

Terrestrial Invasive Species

Native Plant Community

Lakes of Biological Significance

Outstanding

Wildlife Action Network - Rank

Low

Low-Medium

Medium

Medium-High

High

Audubon MN Important Bird Areas

State Importance

Streets and Highways

Native Plant Community (S1-S3 Rankings)

0 600 1,200

Feet

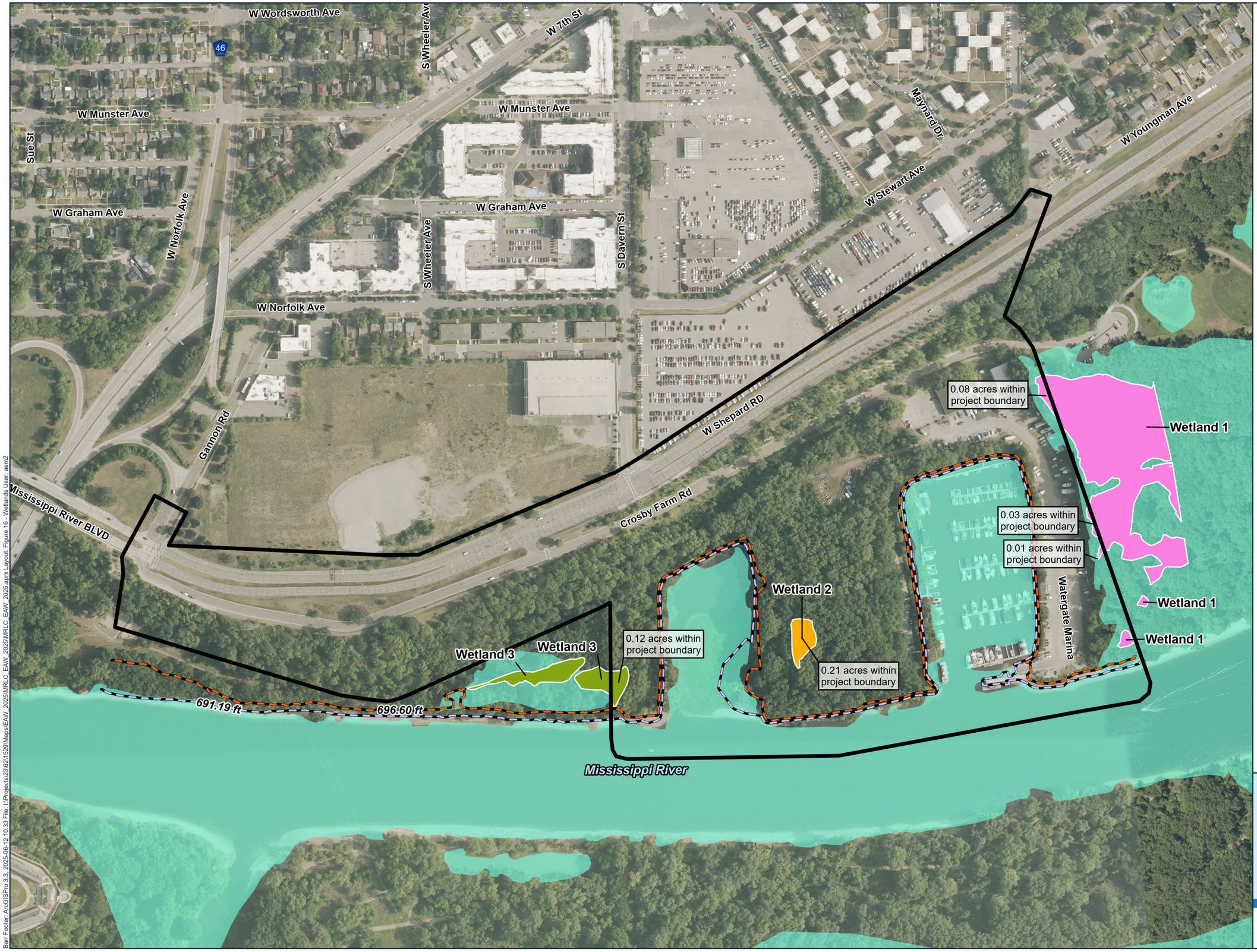
Imagery: FSA, 2023

Ecological Resources
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 15

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\62\11529\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx\Layout: Figure 15 - Ecological Resources User: aem2



Project Boundary

Oridinary High Water Level (OHWL)

Oridinary High Water Mark (OHWM)

Field-Delineated Wetland

Seasonally Floodplain Forest

Deep Marsh

Floodplain Forest

NWI Minnesota

NWI Minnesota

0 150 300

Feet

Imagery: FSA, 2023

Wetlands and OHW
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 16

BARR

Project Boundary

Project Boundary - Half Mile Radius

County Well Index - Use Type

- Abandoned
- Commercial
- Domestic
- Elevator
- Environmental Bore Hole
- Industrial
- Monitor Well
- Observation Well
- Other
- Public Supply
- Unknown
- Sealed Well

0 400 800

Feet

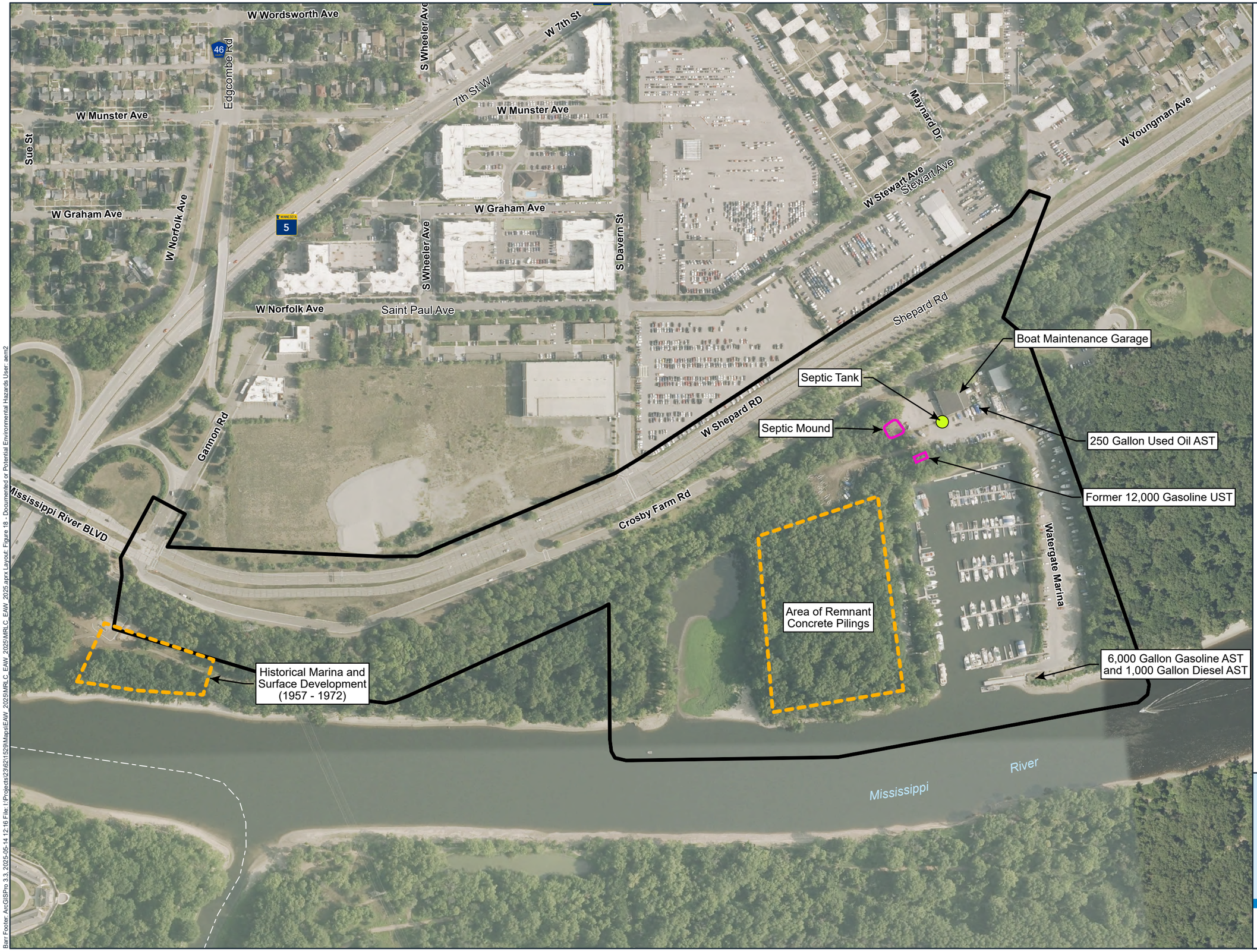
Imagery: FSA, 2023

Well Index
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 17

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\6211\528\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure 17 - Well Index User: aem2



Project Boundary
Phase I Delineated Area
Phase I Site Feature
Septic Tank

0 150 300
Feet

Imagery: FSA, 2023

Documented or Potential Environmental Hazards
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 18

BARR

Barr Footer: ArcGISPro 3.3, 2025-05-14 12:16 File: I:\Projects\23\6211529\Maps\EAW_2025\MRLC_EAW_2025\MRLC_EAW_2025.aprx Layout: Figure_18 - Documented or Potential Environmental Hazards User: aem2

1 MILE

21RAk

21HE0099

21RAe

21RA0078

21DK0024

21DK0017

21DK0031

21DK0018

21DK0066

21DK0080

21DK0067

Project Boundary

Project Boundary - 1 Mile Radius

Archaeological Site *

*Cultural resource data was obtained from the MN Office of the State Archaeologist (OSA) Portal.

0 600 1,200

Feet

Imagery: Esri Basemap, USA Topography

CONFIDENTIAL

Archaeological Resources

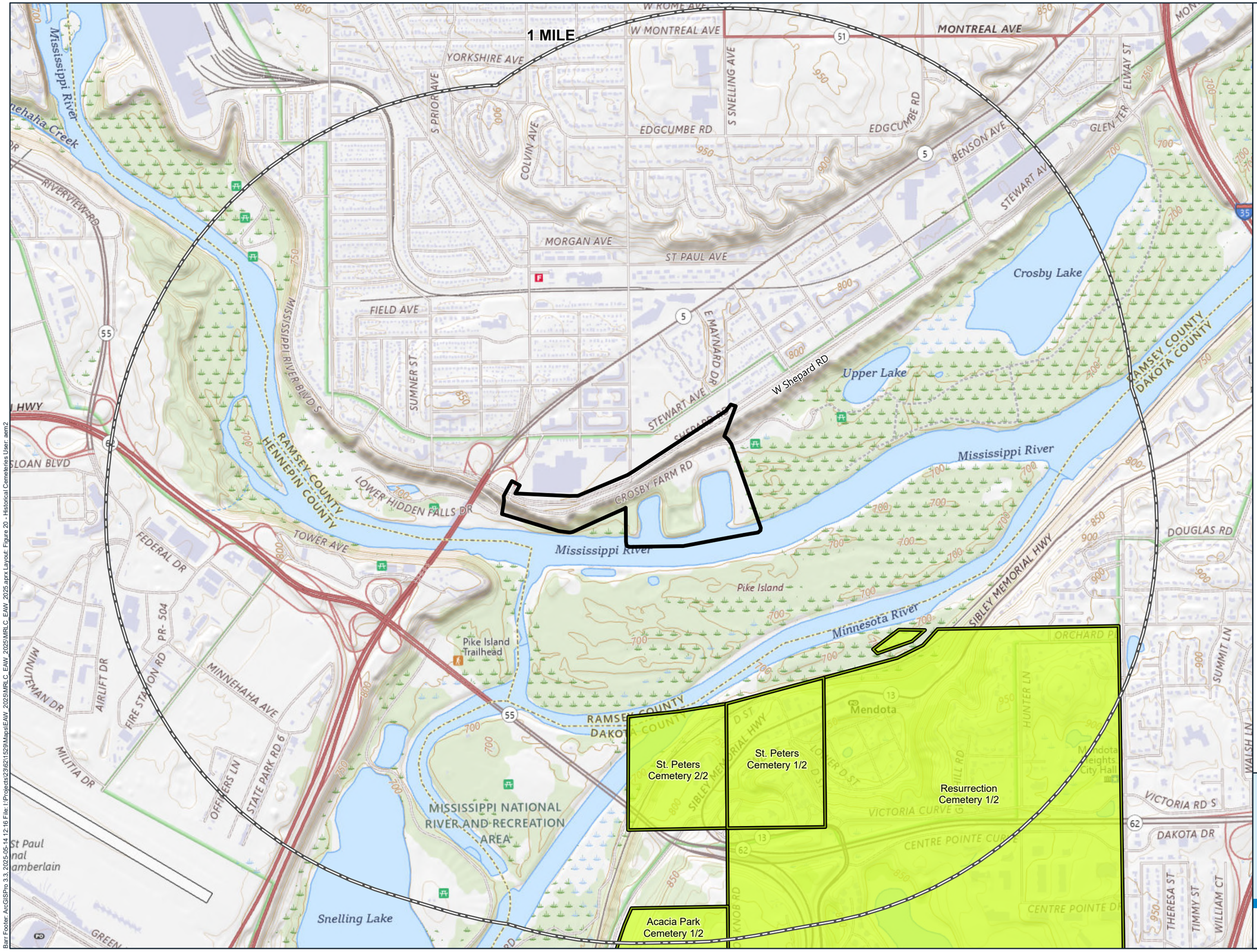
EAW

Mississippi River Learning Center

Saint Paul, MN

FIGURE 19

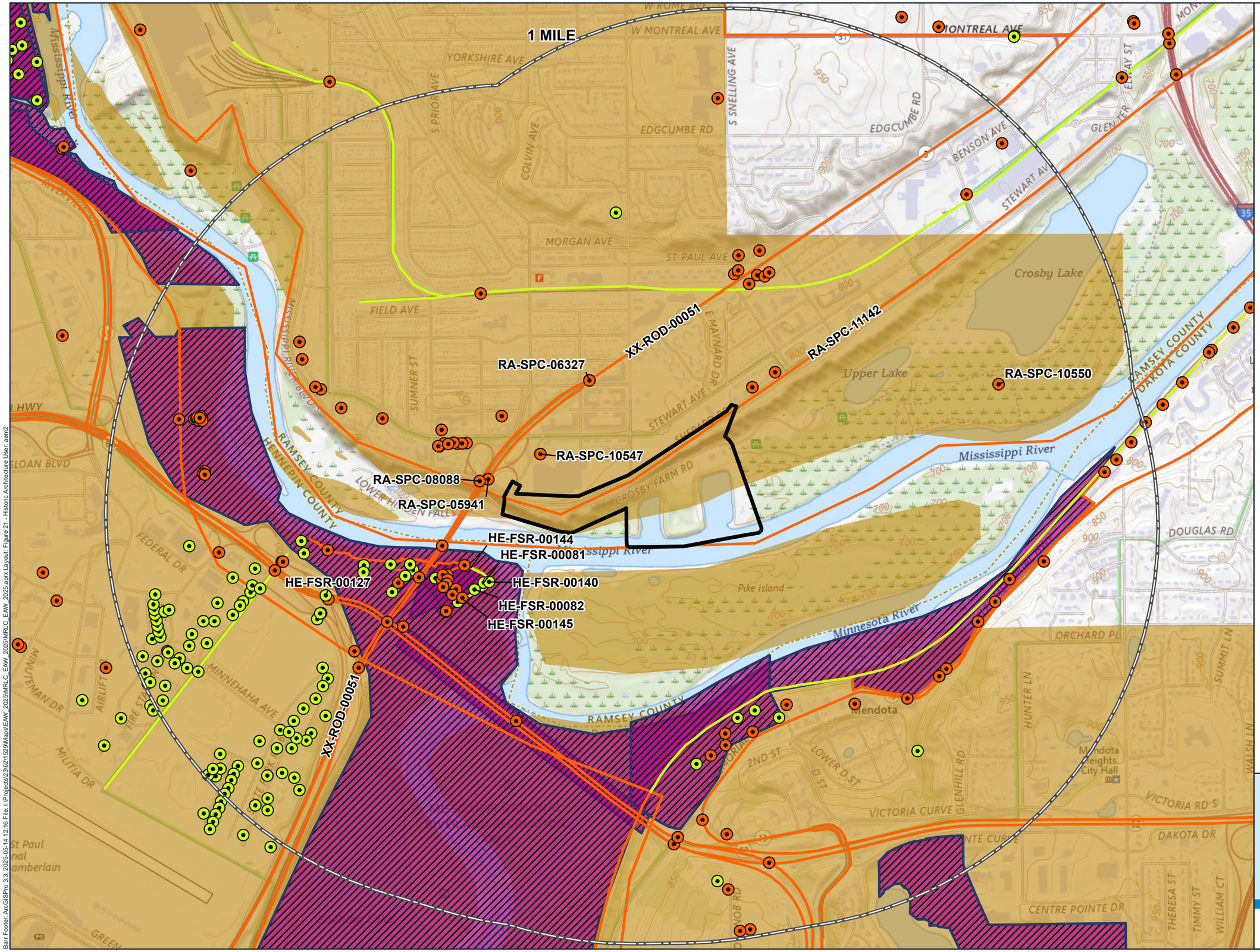
BARR



Historical Cemeteries
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 20

BARR



Project Boundary

Project Boundary - 1 Mile Radius

Inventoried Historic Architectural Resource Polygon

Restricted

Inventoried Historic Architectural Resources

NR Listed or Eligible

Non-NR Listed or Eligible

NR Listed or Eligible

Non-NR Listed or Eligible

0 600 1,200

Feet

Imagery: Esri Basemap, USA Topography

Historic Architecture
EAW
Mississippi River Learning Center
Saint Paul, MN

FIGURE 21

BARR

Appendix 1 Protected Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To: 05/13/2025 15:29:55 UTC
Project code: 2025-0041575
Project Name: Mississippi River Learning Center

Subject: Technical Assistance letter for 'Mississippi River Learning Center' for specified threatened and endangered species that may occur in your proposed project location consistent with the Minnesota-Wisconsin Endangered Species Determination Key (Minnesota-Wisconsin DKey).

Dear Tyler Conley:

The U.S. Fish and Wildlife Service (Service) received on **May 13, 2025** your effect determination(s) for the 'Mississippi River Learning Center' (Action) using the Minnesota-Wisconsin DKey within the Information for Planning and Consultation (IPaC) system. You have submitted this key to satisfy requirements under Section 7(a)(2). The Service developed this system in accordance of with the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 et seq.).

Based on your answers and the assistance of the Service's Minnesota-Wisconsin DKey, you made the following effect determination(s) for the proposed Action:

Species	**Listing Status**	**Determination**
Higgins Eye (pearlymussel) (*Lampsilis higginsii*)	Endangered	May affect
Monarch Butterfly (*Danaus plexippus*)	Proposed Threatened	No effect
Salamander Mussel (*Simpsonaias ambigua*)	Proposed Endangered	May affect
Snuffbox Mussel (*Epioblasma triquetra*)	Endangered	May affect
Spectaclecase (mussel) (*Cumberlandia monodonta*)	Endangered	May affect
Whooping Crane (*Grus americana*)	Experimental Population, Non-Essential	No effect
Winged Mapleleaf (*Quadrula fragosa*)	Endangered	May affect

Determination Information

Consultation with the Service is not complete. Further consultation with the Minnesota-Wisconsin Ecological Services Field Office is required for those species with a determination of "May Affect," listed above. Please email our office at TwinCities@fws.gov and attach a copy of this letter, so we can discuss methods to avoid or minimize potential adverse effects to those species.

Additional Information

Sufficient project details: Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

Future project changes: The Service recommends that you contact the Minnesota-Wisconsin Ecological Services Field Office or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. Please include the Federal action agency in additional correspondence regarding this project.

Species-specific information

Freshwater Mussels: Freshwater mussels are one of the most critically imperiled groups of organisms in the world. In North America, 65% of the remaining 300 species are vulnerable to extinction (Haag and Williams 2014). Implementing measures to conserve and restore freshwater mussel populations directly improves water quality in lakes, rivers, and streams throughout Minnesota and Wisconsin. An adult freshwater mussel filters anywhere from 1 to 38 gallons of water per day (Baker and Levinton 2003, Barnhart pers. comm. 2019). A 2015 survey found that in some areas, mussels can reduce the bacterial populations by more than 85% (Othman et al. 2015 in Vaughn 2017). Mussels are also considered to be ecosystem engineers by stabilizing substrate and providing habitat for other aquatic organisms (Vaughn 2017). In addition to ecosystem services, mussels play an important role in the food web, contributing critical nutrients to both terrestrial and aquatic habitats, including those that support sport fish (Vaughn 2017). Taking proactive measures to conserve and restore freshwater mussels will improve water quality, which has the potential to positively impact human health and recreation in the States of Minnesota and Wisconsin.

Federally listed mussels may be present in the Action area. Projects may adversely affect listed mussels if they permanently affect local hydrology, directly impact a stream (e.g., stream/road crossings, new stormwater outfall discharge, dams, other in-stream work, etc.), and/or indirectly impact a stream or riparian zone (e.g., cut and fill, horizontal directional drilling, construction, vegetation removal, discharge, etc.). Please coordinate with the Minnesota-Wisconsin Ecological Services Field Office to further evaluate effects of the Action on Federally listed mussels.
Bald and Golden Eagles: Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the "taking" of bald and golden eagles and defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Eagle Act's implementing regulations define disturb as "… to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

The following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Rusty Patched Bumble Bee *Bombus affinis* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

Coordination with the Service is not complete if additional coordination is advised above for any species.

Mussel References

Baker, S.M. and J. Levinton. 2003. Selective feeding by three native North American freshwater mussels implies food competition with zebra mussels. Hydrobiologia 505(1):97-105.

Haag, W. R. and J.D. Williams, 2014. Biodiversity on the brink: an assessment of conservation strategies for North American freshwater mussels. Hydrobiologia 735:45-60.

Morowski, D., L. James and D. Hunter. 2009. Freshwater mussels in the Clinton River, southeastern Michigan: an assessment of community status. Michigan Academician XXXIX: 131-148.

Othman, F., M.S. Islam, E.N. Sharifah, F. Shahrom-Harrison and A. Hassan. 2015. Biological control of streptococcal infection in Nile tilapia Oreochromis niloticus (Linnaeus, 1758) using filter-feeding bivalve mussel Pilsbryoconcha exilis (Lea, 1838). Journal of Applied Ichthyology 31: 724-728.

Vaughn, C.C. 2017. Ecosystem services provided by freshwater mussels. Hydrobiologia DOI: 10.1007/s10750-017-3139-x.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Mississippi River Learning Center

2. Description

The following description was provided for the project 'Mississippi River Learning Center':

> The City of St. Paul is proposing to construct the Mississippi River Learning Center, which would provide a mixed-use, river-focused campus at the center of the Hidden Falls Crosby Farm Regional Park. Project generally entails constructing of buildings, walkways/boardwalks, parking areas, and docks/piers.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.8965408,-93.17079126679187,14z

QUALIFICATION INTERVIEW

1. This determination key is intended to assist the user in evaluating the effects of their actions on Federally listed species in Minnesota and Wisconsin. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Additionally, this key DOES NOT cover wind development, purposeful take (e.g., for research or surveys), communication towers that have guy wires or are over 450 feet in height, aerial or other large-scale application of any chemical (such as insecticide or herbicide), and approval of long-term permits or plans (e.g., FERC licenses, HCP's).

   Click **YES** to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

   Yes
2. Is the action being funded, authorized, or carried out by a Federal agency?

   Yes
3. Are you the Federal agency or designated non-federal representative?

   No
4. Does the action involve the installation or operation of wind turbines?

   No
5. Does the action involve purposeful take of a listed animal?

   No
6. Does the action involve a new communications tower?

   No
7. Does the activity involve aerial or other large-scale application of ANY chemical, including pesticides (insecticide, herbicide, fungicide, rodenticide, etc)?

   No
8. Will your action permanently affect local hydrology?

   No
9. Will your action temporarily affect local hydrology?

   No
10. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new stormwater outfall discharge, dams, other in-stream work, etc.)?

    Yes

11. Does your project have the potential to impact the riparian zone or indirectly impact a stream/river (e.g., cut and fill; horizontal directional drilling; construction; vegetation removal; pesticide or fertilizer application; discharge; runoff of sediment or pollutants; increase in erosion, etc.)?

    Note: Consider all potential effects of the action, including those that may happen later in time and outside and downstream of the immediate area involved in the action.

    Endangered Species Act regulation defines "effects of the action" to include all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (50 CFR 402.02).

    Yes

12. Will your action disturb the ground or existing vegetation?

    Note: This includes any off-road vehicle access, soil compaction (enough to collapse a rodent burrow), digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application (herbicide, fungicide), vegetation management (including removal or maintenance using equipment or prescribed fire), cultivation, development, etc.

    Yes

13. Will your action include spraying insecticides?

    No

14. Does your action area occur entirely within an already developed area?

    Note: Already developed areas are already paved, covered by existing structures, manicured lawns, industrial sites, or cultivated cropland, AND do not contain trees that could be roosting habitat. Be aware that listed species may occur in areas with natural, or semi-natural, vegetation immediately adjacent to existing utilities (e.g. roadways, railways) or within utility rights-of-way such as overhead transmission line corridors, and can utilize suitable trees, bridges, or culverts for roosting even in urban dominated landscapes (so these are not considered "already developed areas" for the purposes of this question). If unsure, select NO..

    No

15. Your project is within the range of federally listed freshwater mussels. Have surveys for freshwater mussels been conducted according to a Service-approved survey plan?

    Note: You must receive prior approval for any proposed mussel survey by contacting the Minnesota-Wisconsin Ecological Services Field Office. All mussel surveys in Minnesota and Wisconsin must comply with State approved protocols.
    Minnesota Mussel Protocol: https://files.dnr.state.mn.us/eco/nhnrp/mn-mussel-survey-and-relocation-protocol.pdf.
    Wisconsin Mussel Protocol: https://molluskconservation.org/Library/Protocol%20PDFs/WI%20Wadable%20Mussel%20Protocol_8-18-15.pdf

    No

16. [Semantic] Does the project intersect the Salamander mussel AOI?

    Automatically answered
    Yes

17. Have you determined that the action will have no effect on individuals within the whooping crane nonessential experimental population (NEP)?

    Yes

18. [Hidden Semantic] Does the action area intersect the monarch butterfly species list area?

    Automatically answered
    Yes

19. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

    If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project.

    Are you making a "no effect" determination for monarch?

    Yes

IPAC USER CONTACT INFORMATION

Agency: Barr Engineering
Name: Tyler Conley
Address: 4300 MarketPointe Drive Suite 200
City: Minneapolis
State: MN
Zip: 55435
Email tconley@barr.com
Phone: 9528423638

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To: 05/13/2025 15:39:03 UTC
Project code: 2025-0041575
Project Name: Mississippi River Learning Center

Federal Nexus: yes

Federal Action Agency (if applicable): Army Corps of Engineers
Subject: Verification letter for 'Mississippi River Learning Center' for rusty patched bumble bee that may occur in your proposed project location consistent with the Rusty Patched Bumble Bee Range Wide Determination Key (RPBB DKey).

Dear Tyler Conley:

This letter records your determination using the RPBB DKey within the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (USFWS) on **May 13, 2025**, for 'Mississippi River Learning Center' (here forward, Project). This project has been assigned Project Code ‘2025-0041575’ and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC Determination Keys

The USFWS developed the IPaC system and associated species’ determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. **Failure to accurately represent or implement the Project as detailed in IPaC or the RPBB DKey, invalidates this letter.**

Determination for the Rusty Patched Bumble Bee

Based on your answers and the assistance of the USFWS’ RPBB DKey, you made the following effect determination for the proposed Action:

Species	Listing Status	Determination
Rusty Patched Bumble Bee (*Bombus affinis*)	Endangered	NLAA

Next Steps

Consultation with the USFWS is necessary. The project has a federal nexus (e.g., Federal funds, permit, etc.), but you are not the federal action agency or its designated (in writing) non-federal representative. Therefore, the ESA consultation status is incomplete, and no project activities should occur until consultation between the Service and the Federal action agency (or designated non-federal representative), is completed.

As the federal agency or designated non-federal representative deems appropriate, they should submit their determination of effects to the Service by doing the following.

1. Log into IPaC using an agency email account and click on My Projects, click "Search by record locator" to find this Project using **495-161993310**. (Alternatively, the originator of the project in IPaC can add the agency representative to the project by using the Add Member button on the project home page.)
2. Review the answers to the RPBB Dkey to ensure that they are accurate.
3. Click on Review/ Finalize to convert the 'not likely to adversely affect' technical assistance letter to a concurrence letter. Download the concurrence letter for your files if needed.

Coordination with the USFWS regarding the Rusty Patched Bumble Bee is complete. Thank you for considering federally listed species during your project planning

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the rusty patched bumble bee **does not** apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Higgins Eye (pearlymussel) *Lampsilis higginsii* Endangered
- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Snuffbox Mussel *Epioblasma triquetra* Endangered
- Spectaclecase (mussel) *Cumberlandia monodonta* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential
- Winged Mapleleaf *Quadrula fragosa* Endangered

Critical Habitats:

- Rusty Patched Bumble Bee Bombus affinis Endangered

Coordination with the USFWS is advised for any species and/or critical habitat listed above.

You should coordinate with our Office to determine whether the Action may affect the species and/or critical habitat listed above and if further consultation is required. Note that reinitiation of

consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the local Ecological Services Field Office and reference Project Code '2025-0041575' associated with this Project. See the top of this letter for the Project Code.

Additional Information

Sufficient project details: Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

Future project changes: The Service recommends that you contact the local Ecological Services Field Office or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect rusty patched bumble bee in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to rusty patched bumble bee; or 4) or critical habitat is designated. If any of the above conditions occur, additional consultation with the Service should take place before project changes are final or resources are committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the USFWS must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. Please include the Federal action agency in additional correspondence regarding this project.

Species-specific information

Bald and Golden Eagles: Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the "taking" of bald and golden eagles and defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Eagle Act's implementing regulations define disturb as "… to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

If you observe a bald eagle nest in the vicinity of your proposed project, you should follow the National Bald Eagle Management Guidelines (May 2007). For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit our regional eagle website or

contact the local Ecological Services Field Office. If the Action may affect bald or golden eagles, additional coordination with the Service under the Eagle Act may be required.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Mississippi River Learning Center

2. Description

The following description was provided for the project 'Mississippi River Learning Center':

> The City of St. Paul is proposing to construct the Mississippi River Learning Center, which would provide a mixed-use, river-focused campus at the center of the Hidden Falls Crosby Farm Regional Park. Project generally entails constructing of buildings, walkways/boardwalks, parking areas, and docks/piers.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.8965408,-93.17079126679187,14z

QUALIFICATION INTERVIEW

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Are you the Federal agency or designated non-federal representative?

   No

3. Does the action area overlap with a rusty patched bumble bee high potential zone?

   Automatically answered
   Yes

4. Is the action being implemented under a Natural Resources Conservation Service (NRCS) or FSA (Farm Service Agency) program?

   Note: Farm Bill programs include, the Conservation Reserve Program, Environmental Quality Incentive Program, NRCS Easement Program, Farm Loan Program, Farm Storage Facility Loan Program.

   No

5. Does the action include - or is it reasonably certain to cause - intentional take of rusty patched bumble bee (rusty patched bumble bee) that is not covered under a scientific recovery permit under section 10(A)1(a) of the Endangered Species Act or under a cooperative agreement with a state agency?

   Note: This could include, for example, surveys or studies that include handling or capture of the species. Whether "Project Review" surveys using USFWS protocols were conducted as part of the action is addressed later in this key.

   No

6. Does the action include – or is it reasonably certain to result in – construction of one or more new roads or rail lines that will increase vehicle traffic in a rusty patched bumble bee HPZ?

   No

7. Does the action include – or is it reasonably certain to result in – the addition of travel lanes that are likely to increase vehicle traffic on one or more existing roads that will increase vehicle traffic in a rusty patched bumble bee HPZ?

   No

8. Is an increase in vehicular traffic in one or more HPZs a likely outcome of the federal action?

   No

9. Does the action include – or is it reasonably certain to cause – the use of commercial/ managed bees (e.g., the use of honeybees or managed bumble bees to pollinate crops).

   No

10. Is there habitat for nesting, foraging, and/or overwintering for the rusty patched bumble bee in the action area?

    Note: Please refer to the ESA Section 7(a)(2) Voluntary Implementation technical assistance for Rusty Patched Bumble Bee .

    Yes

11. Have “Project Review” surveys for rusty patched bumble bees already been conducted in the action area according to Service-approved protocols? If you don't know, answer 'no'.

    No

12. Does the action include collection of seed from native species?

    No

13. Does the action include, or will it cause the application of insecticides or fungicides?

    No

14. Does the action include, or will it cause activities to control native rodent species?

    No

15. Does the action include, or will it cause planting or seeding of non-native plant species?

    No

16. Will the action include or cause herbicide use?

    No

17. Will the action cause an increase in the extent or duration of surface flooding or soil saturation in rusty patched bumble bee habitat in a High Potential Zone?

    Note: This may occur, for example, as a result of activities or structures that impound water, otherwise alter or interrupt existing drainage patterns, or that affect surface runoff.

    No

18. Will the action cause ground disturbance in rusty patched bumble bee habitat within a High Potential Zone?

    Yes

19. Will the ground disturbance within the High Potential Zone affect more than 0.25 acre (0.1 hectare) of rusty patched bumble bee nesting habitat (upland grasslands, shrublands, and forest edges that contain native sources of pollen and nectar)?

    Note: Please refer to the ESA Section 7(a)(2) Voluntary Implementation technical assistance for Rusty Patched Bumble Bee Table 1, p. 12.

    Yes

20. Will the ground disturbance occur during the nesting season (April 15 to October 10)?

    No

21. Will the ground disturbance within the High Potential Zone affect more than 0.25 acre (0.1 hectare) of rusty patched bumble bee overwintering habitat (i.e., forested areas with native plants that provide springtime pollen and nectar, with uncompacted soils and not dominated by invasive plant species, like buckthorn)?

    Note: For a more detailed description of rusty patched bumble bee overwintering dates and habitat, see the section 7 guidelines**.**

    No

22. Will the action include or cause effects to native vegetation in rusty patched bumble bee habitat?

    Yes

23. Will the action cause effects to native vegetation in rusty patched bumble bee habitat within the High Potential Zone during the nesting period (April 15 to October 10)?

    Note: Effects could occur as a result of mowing, cutting, grazing, prescribed fire, tree removal, spot-application of herbicide, tree clearing, and/or other activities. Effects could occur as a result of activities carried out outside of the nesting period if they result in reduced forage availability during a subsequent nesting period.

    No

24. Does the action include the use of prescribed fire during the overwintering period? Overwintering dates are October 11 to April 14.

    No

25. Will the action result in the regular, re-occurring, or permanent removal, reduction, or conversion of any existing rusty patched bumble bee habitat?

    No

IPAC USER CONTACT INFORMATION

Agency: Barr Engineering
Name: Tyler Conley
Address: 4300 MarketPointe Drive Suite 200
City: Minneapolis
State: MN
Zip: 55435
Email tconley@barr.com
Phone: 9528423638

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To: 05/13/2025 15:23:04 UTC
Project Code: 2025-0041575
Project Name: Mississippi River Learning Center

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A demonstration video showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of “no effect” or “may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species’ biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a “Not Likely to Adversely Affect” (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a “May Affect” determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for “May Affect” determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected. For bat activity dates, please review Appendix L in the Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines.

Examples of unsuitable habitat include:
- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:
- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC

species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the northern long-eared bat and tricolored bat range-wide D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys helps to determine if prohibited take might occur and, if not, will generate an automated verification letter. Additional information about available tools can be found on the Service's northern long-eared bat website.

Whooping Crane
Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities
Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. It is the responsibility of the project proponent to survey the area for any migratory bird nests. If there is an eagle nest on-site while work is on-going, eagles may be disturbed. We recommend avoiding and minimizing disturbance to eagles whenever practicable. If you cannot avoid eagle disturbance, you may seek a permit. A nest take permit is always required for removal, relocation, or obstruction of an eagle nest. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. **Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.**

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

PROJECT SUMMARY

Project Code: 2025-0041575
Project Name: Mississippi River Learning Center
Project Type: Recreation - New Construction
Project Description: The City of St. Paul is proposing to construct the Mississippi River Learning Center, which would provide a mixed-use, river-focused campus at the center of the Hidden Falls Crosby Farm Regional Park. Project generally entails constructing of buildings, walkways/boardwalks, parking areas, and docks/piers.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.8965408,-93.17079126679187,14z

Counties: Ramsey County, Minnesota

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

CLAMS

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered
Snuffbox Mussel *Epioblasma triquetra* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4135	Endangered
Spectaclecase (mussel) *Cumberlandia monodonta* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7867	Endangered
Winged Mapleleaf *Quadrula fragosa* Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4127	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Rusty Patched Bumble Bee *Bombus affinis* There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9383 General project design guidelines: https://ipac.ecosphere.fws.gov/project/EHSE2COO7BEPFJLEK4EROMBHFE/documents/generated/5967.pdf	Endangered

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Rusty Patched Bumble Bee *Bombus affinis* https://ecos.fws.gov/ecp/species/9383#crithab	Proposed

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

BALD & GOLDEN EAGLES INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

MIGRATORY BIRD INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R2UBH

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1A

IPAC USER CONTACT INFORMATION

Agency: Barr Engineering
Name: Tyler Conley
Address: 4300 MarketPointe Drive Suite 200
City: Minneapolis
State: MN
Zip: 55435
Email tconley@barr.com
Phone: 9528423638

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

Appendix 2 Historic Architectural Resources within 1- Mile of the Project Area

Table 1 Historic Architectural Resources Within 1-Mile of the Project Area

Resource Number	Resource Name	Resource Type	NRHP Eligibility
DK-MDC-00001	Henry H. Sibley House	Building	Listed (contributing resource to DK-MDC-00005)
DK-MDC-00002	Faribault House	Building	Listed (contributing resource to DK-MDC-00005)
DK-MDC-00004	Hypolite Dupuis House	Building	Listed (contributing resource to DK-MDC-00005)
DK-MDC-00005	Mendota Historic District	District	Eligible
DK-MHC-00006	Oheyawahe/Pilot Knob	Site	Listed
DK-MDC-00009	Milwaukee and St. Paul Railway: Mendota Segment	Structure	Eligible (contributing resource to DK-MDC-00005)
DK-MHC-00124	Church of St. Peter's	Building	Listed
HE-FSR-00002	Building 53 (G-5)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00003	Building 54	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00004	Building 55 (G-3)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00005	Building 56 (G-4)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00006	Building 57 (C-9)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00007	Building 58 (C-11) (flagstaff)	Site	Listed (contributing resource to HE-FSR-00001)

HE-FSR-00008	Building 62 (G-6)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00009	Building 63 (C-6)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00010	Building 64 (C-10) (vacant)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00011	Building 65 (C-4)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00012	Building 66 (C-13)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00013	Building 67 (C-1)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00014	Building 76 (F-4)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00015	Building 79	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00016	Building 99	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00017	Building 101 (B-1)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00018	Barracks - Building 102 (B-2)	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00020	Building 108	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00022	Building 151 (A-20)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00023	Building 152 (A-1)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00024	Building 153 (A-2)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00025	Officers' Quarters - Building 154 (A-3)	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00026	Officers' Quarters - Building 155 (A-4)	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00027	Officers' Quarters - Building 156 (A-5)	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00035	Building T-178 (A-28)	Structure	Listed (contributing resource to HE-FSR-00001)

HE-FSR-00036	Building T-186	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00037	Building 201 (F-42) (Cavalry Drill Field)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00038	Building 202 (F-24)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00039	Building 203 (F-22)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00040	Building 205 (F-27)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00041	Building 206 (F-26)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00042	Building 207 (F-23)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00043	Building 209 (F-21)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00044	Building 210 (F-43)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00045	Building 211 (F-49)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00046	Building 212 (F-44)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00047	Building 214 (F-56)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00048	Building 215 (F-57)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00049	Building 217 (F-7)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00050	Building 218 (F-11)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00051	Building 219 (F-10)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00052	Building 220 (F-58)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00053	Building 222 (F-14, 18, 19)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00054	Building 223 (F-61)	Structure	Listed (contributing resource to HE-FSR-00001)

HE-FSR-00055	Building 224 (F-60)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00056	Building T-226 (F-3)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00057	Building 227a-b (F-30, 31)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00061	Building 237 (F-2)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00062	Building 239 (F-15)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00063	Building 240 (F-53)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00064	Building 241 (F-50)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00065	Building 242 (F-48)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00066	Building 243a-g (F-62)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00067	Building 244 (F-51)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00068	Building 245 (F-52)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00069	Building 246 (F-54)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00070	Building 247 (F-58)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00071	Building 248a-b (E-12)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00072	Building 249	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00074	Building 30 (F-37)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00075	Building 31	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00076	Building 18 (A-B)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00077	Building 17 (A-B)	Structure	Listed (contributing resource to HE-FSR-00001)

HE-FSR-00078	Ft. Snelling Chapel	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00079	Building 16 (Round Tower)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00080	Building 3 (Hexagonal Tower)	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00108	Transformer Vault - Building Number 19	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00109	Ordnance Storehouse - Building Number 22	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00110	Transformer Vault	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00111	Recreation Building	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00112	restroom - Building 188	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00113	Garage - Building T-203a	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00114	Quartermaster Storehouse - Building 225	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00116	Coldwater Spring	Site	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00117	Artillery Drill Field	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00118	Infantry Drill Field	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00119	Air Raid Siren	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00120	Bloomington Avenue	Roadway	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00121	Leavenworth Avenue	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00122	Minnehaha Avenue	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00123	Sibley Street	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00124	Taylor Avenue	Structure	Listed (contributing resource to HE-FSR-00001)

HE-FSR-00126	Ramsey Street	Structure	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00152	Historic Fort Snelling Visitor Center	Building	Listed (contributing resource to HE-FSR-00001)
HE-FSR-00155	Bridge 27027 Highway 5 Tunnel	Structure	Eligible (contributing resource to HE-FSR-00001)
HE-FSR-00183	Tower Avenue	Structure	Listed
HE-MPC-04833	Minnehaha Historic District	District	Eligible
RA-SPC-00899	William Davern House	Building	Listed
XX-RRD-CSP020	Milwaukee and St. Paul Railway Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company: Iowa and Minnesota Division, St. Paul to Mendota	Railroad	Eligible
XX-RRD-CSP028	Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company: Ford Branch Line - Ramsey County	Railroad	Eligible

Appendix 3 SHPO Response 2025-0912

DEPARTMENT OF ADMINISTRATION
STATE HISTORIC PRESERVATION OFFICE

May 8, 2025

Lindsey Wallace
Sr. Architectural Historian and Planner
106 Group
lindseywallace@106group.com

RE: St. Paul Mississippi River Learning Center Project
St. Paul, Ramsey County
SHPO Number: 2025-0912

Dear Lindsey Wallace:

Thank you for the opportunity to review and comment on the above referenced project. Information received on March 24, 2025, and April 23, 2025, has been reviewed pursuant to the responsibilities given the State Historic Preservation Office by the Minnesota Historic Sites Act (Minn. Stat. 138.665-666) and the Minnesota Field Archaeology Act (Minn. Stat. 138.40). However, according to your correspondence this project is in the final stages of pursuing a potential Navigation and Ecosystem Sustainability Program (NESP) grant. If the project is selected for NESP, it will be subject to review under Section 106 of the National Historic Preservation Act and consultation with our office will need to be initiated by the lead federal agency in order to define an appropriate area of potential effects (APE) for the federal undertaking as well as the necessary historic property identification and evaluation efforts required for a federal review.

Project/Undertaking and Area of Potential Effects
As stated in your correspondence, the City of St. Paul is proposing to develop a mixed-use, river-focused space at the Watergate Marina site in Hidden Falls/Crosby Farm Regional Park (Project). This development, the Mississippi River Learning Center, will include a National Park Service Headquarters and Welcome Station; a River Learning Center Education Building, Café Building, Boathouse and Storage Buildings; and a Marina Office and Maintenance Building. The National Park Service Headquarters and Welcome Station will be located on the upper bluff, and will be connected to the lower, river-side campus and marina buildings by a new ADA-compliant trail. The existing clubhouse and boat hangar in Watergate Marina will be demolished. Marina and roadway improvements are also proposed. The project will be located between Shepard Road and the Mississippi riverfront from Gannon Road to the eastern edge of the Watergate Marina. We have reviewed the documentation provided regarding the determination of the area of potential effects (APE) for the proposed Project. The report states that the APE was developed to take into account potential physical, auditory, atmospheric, and visual effects, but has the Project considered other non-visual effects to historic properties (e.g., traffic, access, and parking)? Please confirm that the APE accounts for these types of effects as well.

Identification of Historic Properties
History/Architecture Properties
We have reviewed the following report and associated inventory forms submitted through MnSHIP: *Architectural History Reconnaissance Survey and Assessment of Effects Study for the Saint Paul Mississippi River Learning Center Project, Saint Paul, Ramsey County, Minnesota* (March 2025) by 106 Group.

New Inventory Forms:

- *RA-SPC-12024 Watergate Marina*
- *RA-SPC-06327 The Manor*
- *RA-SPC-08088 Bridge 9489*
- *RA-SPC-05941 Bridge 9490*
- *RA-SPC-10550 Crosby Farm Regional Park*

Our comments are provided below.

The report states that nine (9) properties 45 years of age or older within the APE were not evaluated as part of this Project because they were located outside the viewshed. Please see our comments above regarding the APE. Has the Project considered other non-visual effects to these properties (e.g., traffic, access, and parking)?

According to the report, the following previously inventoried architectural history properties are located within the APE for this Project:

- Fort Snelling
- Hidden Falls Regional Park (RA-SPC-10549)
- Crosby Farm Regional Park (RA-SPC-10550)
- Bridge 9489 (RA-SPC-08088)
- Bridge 9490 (RA-SPC-05941)
- The Manor (RA-SPC-06327)
- Trunk Highway 5 (XX-ROD-00051)

The following inventoried historic districts are associated with **Fort Snelling**:

- Fort Snelling National Historic Landmark
- Fort Snelling Historic District (HE-FSR-00001) (National Register of Historic Places)
- Old Fort Snelling Historic District (State Register of Historic Places)
- Historic Fort Snelling (Historic Site – Historic Sites Network)

We appreciate receiving notice that **The Manor** (**RA-SPC-06327**) has been razed. The information will be incorporated into MnSHIP.

Trunk Highway 5 (XX-ROD-00051) has previously been determined not eligible for listing in the National Register of Historic Places (NRHP).

We are returning the following inventory forms for additional information and clarifications:

- **Bridge 9489 (RA-SPC-08088) and Bridge 9490 RA-SPC-05941**: While we agree the two surveyed bridges are not individually eligible for inclusion in the NRHP, they both need to be considered

within the context of the St. Paul Grand Round (RA-SPC-11142), see additional information below.

- **Watergate Marina (RA-SPC-12024)**: The inventory form mentions an underground boat storage facility within the bluffs. We presume the entrance to this underground facility is the triangular opening in the bluffs just across Crosby Farm Road and east of the property's entry drive. If the underground boat storage is part of the Watergate Marina, it should be included within the property boundaries along with the date the entrance was closed. Please clarify the relationship (historically and currently) between the underground boat storage and Watergate Marina. We also recommend noting where the two buildings discussed in the attachment are located on Map 1 and including the aerial photographs used to describe the history of the inlet and marina to better understand the changes to these features. This facility should also be considered within the context of the St. Paul Grand Round (RA-SPC-11142).

- **Crosby Farm Regional Park (RA-SPC-10550)**: We recommend evaluation of this property and its picnic shelter within the context of 1960s and 1970s era park and picnic shelter design. The Phase I documentation notes the property "does not stand out within the history of St. Paul because it did not spur on any new development within the immediate vicinity of the park, nor does it convey any significance about the development of park spaces in the city of St. Paul." Further, the documentation notes the park "is mostly natural land" and "there is little to no landscape design present at the site." However, there is no consideration of how this park fits within the 1960s and 1970s design trend for parks that deemphasized the automobile, encouraged pedestrian paths, and maintained natural resources (c.f., Wood Lake Nature Center HE-RFC-00057, recently evaluated by 106 Group). The narrative also does not provide an architectural context or an architect for the 1974 picnic shelter, which has striking architectural features including the massive roof planes, intricate stonework, and central fireplace. The park should also be considered within the context of the St. Paul Grand Round (RA-SPC-11142). Additional information on park and picnic shelter design of the era can be found in the Phalen Park Evaluation by Sebastian Renfield, Mead & Hunt, 2020 (RA-SPC-10850), the Theodore Wirth Regional Park Cultural Landscape Study for the Blue Line Extension LRT Project by Parisa Ford, 106 Group (HE-2015-3H), *Minnesota Trunk Highway Roadside Properties: 1950-1975* by Will Stark and Andrea Pizza, April 2016 (XX-2016-02H) and *Minnesota Trunk Highway Roadside Properties, 1932-1975* by Andrea Pizza, June 2020 (XX-2020-08H and XX-2020-09H).

- **Hidden Falls Regional Park (RA-SPC-10549)**: The report states that this property has previously been determined not eligible for listing in the NRHP, this is incorrect. Hidden Falls Regional Park is currently considered unevaluated for listing in the NRHP. The property was identified during a previous federal review with the Federal Emergency Management Agency (FEMA) and our office agreed that the property is *likely eligible* for listing in the NRHP. Our office determined that the documentation submitted at that time was sufficient to consider the property NRHP-eligible for the purposes of completing the Section 106 review of that federal undertaking, but that a successful nomination would need to include substantial additional documentation on the developmental history of the park, appropriate contexts, documentation (including mapping) of all contributing and noncontributing elements, and an analysis of integrity based on a yet-to-be-established period of significance. Additional documentation is needed to determine the eligibility of this resource, and it should also be considered within the context of the St. Paul Grand Round (RA-SPC-11142).

The report did not identify the **St. Paul Grand Round (RA-SPC-11142)** as being along Shepard Road within the APE. Although not fully inventoried or evaluated, the St. Paul Grand Round is mapped in MnSHIP and portions of this resource have been surveyed throughout the community (see report numbers in the inventory record). Originally proposed by landscape architect Horace William Shaler Cleveland in the 19th century, the Grand Round is comprised of a series of large parks connected by parkways that the City of St. Paul developed over a period of time. Most of the parkways were present by the 1930s and the City continues to work toward implementation of the Grand Round (https://www.stpaul.gov/departments/parks-and-recreation/design-construction/current-projects/saint-paul-grand-round) as part of modern park planning. Since this undertaking involves park improvements and changes adjacent to the property, the St. Paul Grand Round should be inventoried and any individual resources within the APE should be considered within the context of the entire system. We understand that the Minnesota Department of Transportation (MnDOT) has hired a consultant to create a context for the St. Paul Grand Round. You may want to reach out to the MnDOT Cultural Resources Unit for more information.

Archaeological Resources
We understand that identification efforts are underway to identify archaeological resources in the Project APE. We look forward to reviewing the results of the investigations when they are available.

Assessment and Finding of Effect
Once the historic property identification efforts have been completed, we will be able to consult further regarding the effects of the Project on historic properties.

We look forward to continuing consultation on this Project. If you have any questions regarding our comments, please contact me at (651) 201-3285 or kelly.graggjohnson@state.mn.us.

Sincerely,

Kelly Gragg-Johnson

Kelly Gragg-Johnson
Environmental Review Specialist

Appendix 4 Greenhouse Gas Calculations

Mississippi River Learning Project
GHG Calculations

Table 1. Construction Emissions Summary

Construction Activity	CO_2e (metric tons)
Site Preparation	534
Site Improvements	211
Site Civil/Mechanical Utilities	70
Site Electrical Utilities	70
Welcome Center	167
Mississippi River Learning Center	64
Boathouse and Storage	39
Marina Maintenance and Retail Building	37
Land Use Change	201
TOTAL	**1,394**

Mississippi River Learning Project
GHG Calculations

Table 2. Construction Emissions from Site Preparation and Utilities

Construction Activity[1]	Equipment Type[1]	Quantity[1]	Hours of Operation[1]	Fuel Type[1]	Fuel Consumption[1] (gallons)	CO_2 Emission Factor[2] (kg/gallon)	CH_4 Emission Factor[3] (g/gallon)	N_2O Emission Factor[3] (g/gallon)	CO_2[4] (metric tons)	CH_4[4] (metric tons)	N_2O[4] (metric tons)	CO_2e[5] (metric tons)
Site Preparation	Backhoe	2	2080	Diesel	7,280	10.21	1.01	0.94	74.33	0.0074	0.0068	76.35
Site Preparation	Bulldozer	2	2080	Diesel	7,280	10.21	1.01	0.94	74.33	0.0074	0.0068	76.35
Site Preparation	Dump Truck	2	2080	Diesel	7,280	10.21	1.01	0.94	74.33	0.0074	0.0068	76.35
Site Preparation	Excavator	2	2080	Diesel	7,280	10.21	1.01	0.94	74.33	0.0074	0.0068	76.35
Site Preparation	Pickup Truck	2	1040	Diesel	3,640	10.21	1.01	0.94	37.16	0.0037	0.0034	38.17
Site Preparation	Hydrovac Truck	1	1040	Diesel	3,640	10.21	1.01	0.94	37.16	0.0037	0.0034	38.17
Site Preparation	Semitruck/Trailer	2	2080	Diesel	7,280	10.21	1.01	0.94	74.33	0.0074	0.0068	76.35
Site Preparation	Loader	2	2080	Diesel	7,280	10.21	1.01	0.94	74.33	0.0074	0.0068	76.35
Site Improvements	Backhoe	2	1280	Diesel	4,480	10.21	1.01	0.94	45.74	0.0045	0.0042	46.98
Site Improvements	Bulldozer	2	1280	Diesel	4,480	10.21	1.01	0.94	45.74	0.0045	0.0042	46.98
Site Improvements	Concrete Mixer Truck	1	640	Diesel	2,240	10.21	1.01	0.94	22.87	0.0023	0.0021	23.49
Site Improvements	Dump Truck	1	640	Diesel	2,240	10.21	1.01	0.94	22.87	0.0023	0.0021	23.49
Site Improvements	Pickup Truck	2	1280	Diesel	4,480	10.21	1.01	0.94	45.74	0.0045	0.0042	46.98
Site Improvements	Scrapers	1	640	Diesel	2,240	10.21	1.01	0.94	22.87	0.0023	0.0021	23.49
Site Civil/Mechanical Utilities	Excavator	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
Site Civil/Mechanical Utilities	Skid steer loader	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
Site Civil/Mechanical Utilities	Medium Crane	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
Site Civil/Mechanical Utilities	Trencher	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
Site Electrical Utilities	Excavator	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
Site Electrical Utilities	Skid steer loader	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
Site Electrical Utilities	Medium Crane	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
Site Electrical Utilities	Trencher	1	480	Diesel	1,680	10.21	1.01	0.94	17.15	0.0017	0.0016	17.62
TOTAL					--	--	--	--	**863.36**	**0.09**	**0.08**	**886.81**

[1] Data provided by Rockwise Strategies.

[2] Table 2, Mobile Combustion CO2. Emission Factors for Greenhouse Gas Inventories, EPA CCCL. January, 2025. https://www.epa.gov/climateleadership/ghg-emission-factors-hub

[3] Table 5, Mobile Combustion CH4 and N2O for Non-Road Vehicles. Emission Factors for Greenhouse Gas Inventories, EPA CCCL. January, 2025. https://www.epa.gov/climateleadership/ghg-emission-factors-hub

[4] The below conversion were used for calculations:

Unit	Amount	Unit
ton	0.907	metric tons
ton	907	kg
ton	907185	grams

[5] CO_2e calculated by multiplying the Global Warming Potential (GWP) for each pollutant by the potential pollutant emissions. GWPs (100-Year Time Horizon) are from Table A-1 to Subpart A of Part 98, Title 40.

Pollutant	GWP
CO2	1
CH4	28
N2O	265

Table 3. Construction Emissions from Building Construction

Gross Floor Area (SF)	A5 Construction and Installation Emissions[1] (kg CO_2e)	A5 Construction and Installation Emissions[2] (metric tons CO_2e)	Building(s)
20,000	167,286	167	Welcome Center
9,800	63,755	64	Mississippi River Learning Center
8,300	38,569	39	Boathouse and Storage
7,950	36,942	37	Marina Maintenance and Retail Building
46,050	**306,552**	**307**	**Subtotal**

[1] Source: Carbon Leadership Forum Benke, B., Jensen, A., Chafart, M., Simonen, K. and Lewis, M. (2025). The Embodied Carbon Benchmark Report: Embodied Carbon Budgets and Analysis of 292 Buildings in the US and Canada. Carbon Leadership Forum.

[2] The below conversion were used for calculations:

Unit	Amount	Unit
ton	0.907	metric tons
ton	907	kg

Table 3. Construction Emissions from Building Construction

Inputs	**Welcome Center**	
20,000	**SF Gross Floor Area**	
Public Assembly	Use Type	
75th Percentile "High"		
Embodied Carbon Budget	Value Type	
SEI	Scope	SE (foundation, structure, enclosure) vs. SEI (also interiors)
720	kgCO2e/m2	A-C (no A5)
810	kgCO2e/m2	A-C (with A5)
90	kgCO2e/m2	A5 Construction and Installation
8.4	kgCO2e/SF	A5 Construction and Installation
167,286	**kgCO2e Estimated A5 Construction and Installation**	

Inputs	**Mississippi River Learning Center**	
9,800	**SF Gross Floor Area**	
Education	Use Type	
75th Percentile "High"		
Embodied Carbon Budget	Value Type	
SEI	Scope	SE (foundation, structure, enclosure) vs. SEI (also interiors)
690	kgCO2e/m2	A-C (no A5)
760	kgCO2e/m2	A-C (with A5)
70	kgCO2e/m2	A5 Construction and Installation
6.5	kgCO2e/SF	A5 Construction and Installation
63,755	**kgCO2e Estimated A5 Construction and Installation**	

Inputs	**Boathouse and Storage**	
8,300	**SF Gross Floor Area**	
Warehouse and Storage	Use Type	
75th Percentile "High"		
Embodied Carbon Budget	Value Type	
SEI	Scope	SE (foundation, structure, enclosure) vs. SEI (also interiors)
360	kgCO2e/m2	A-C (no A5)
410	kgCO2e/m2	A-C (with A5)
50	kgCO2e/m2	A5 Construction and Installation
4.6	kgCO2e/SF	A5 Construction and Installation
38,569	**kgCO2e Estimated A5 Construction and Installation**	

Inputs	**Marina Maintenance and Retail Building**	
7,950	**SF Gross Floor Area**	
Warehouse and Storage	Use Type	
75th Percentile "High"		
Embodied Carbon Budget	Value Type	
SEI	Scope	SE (foundation, structure, enclosure) vs. SEI (also interiors)
360	kgCO2e/m2	A-C (no A5)
410	kgCO2e/m2	A-C (with A5)
50	kgCO2e/m2	A5 Construction and Installation
4.6	kgCO2e/SF	A5 Construction and Installation
36,942	**kgCO2e Estimated A5 Construction and Installation**	

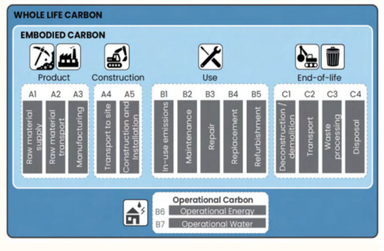

Table 3. Construction Emissions from Building Construction

The Embodied Carbon Benchmark Report - Carbon Leadership Forum

Carbon Leadership Forum Benke, B., Jensen, A., Chafart, M., Simonen, K. and Lewis, M. (2025). The Embodied Carbon Benchmark Report: Embodied Carbon Budgets and Analysis of 292 Buildings in the US and Canada. Carbon
Refefence study period is 60 years
Global Warming Potential (GWP) using GWP 100
ECI Normalized by GFA (kgCO2e/m2)

Embodied Carbon Budgets

Table 1. Summary of embodied carbon budgets (ECBs) based on 75th, 50th, and 25th percentiles. SE scope corresponds to foundations, structure and enclosure, with SEI also adding interiors. Life cycle stages are indicated by (A1-A3, A1-A5, A-C without A5, and A-C with A5), where A-C in this report indicates A1-A3, A4, B4-B5, and C2-C4. Units are kgCO2e/m2 normalized by gross floor area (GFA). Values in this table were rounded upward to 10.

Embodied Carbon Budgets		SE scope				SEI scope			
Value Type	Use Type	A1-A3	A1-A5	A-C (no A5)	A-C (with A5)	A1-A3	A1-A5	A-C (no A5)	A-C (with A5)
75th Percentile ("High")	Warehouse and Storage	260	330	350	400	260	330	360	410
	Multifamily Residential	370	440	450	520	420	490	550	620
	Education	510	580	580	650	550	630	690	760
	Office	540	630	610	680	570	660	680	760
	Public Assembly	550	630	650	740	580	650	720	810
	Other Types	600	680	680	760	640	720	780	850
50th Percentile ("Typical")	Warehouse and Storage	230	300	280	340	230	300	290	350
	Multifamily Residential	290	340	340	390	310	370	420	480
	Education	380	460	470	530	440	510	570	640
	Office	430	490	520	590	470	550	620	700
	Public Assembly	400	490	530	600	430	520	570	640
	Other Types	490	560	550	620	520	600	620	690
25th Percentile ("Low")	Warehouse and Storage	210	270	250	300	210	270	260	310
	Multifamily Residential	200	250	270	320	230	290	350	410
	Education	290	360	380	450	320	390	460	530
	Office	340	410	400	460	360	440	460	530
	Public Assembly	330	400	410	480	360	430	480	550
	Other Types	350	420	420	490	390	470	500	560

As explained in section 2.2.1, these benchmarks are applicable to a building's **primary use type**. Buildings with multiple uses (mixed-use) should refer to the use type within **Table 6** that is consistent with the greatest share of the gross floor area in the program.

Table 6. Summary of embodied carbon budgets (ECBs) based on 75th, 50th, and 25th percentiles. SE scope corresponds to foundations, structure and enclosure, with SEI also adding interiors. Life cycle stages are indicated by (A1-A3, A1-A5, A-C without A5, and A-C with A5), where A-C in this report indicates A1-A3, A4, B4-B5, and C2-C4. Units are kgCO2e/m2 and normalized by gross floor area (GFA). Values in this table were rounded upward to 10.

Embodied Carbon Budgets		SE scope				SEI scope			
Value Type	Use Type	A1-A3	A1-A5	A-C (no A5)	A-C (with A5)	A1-A3	A1-A5	A-C (no A5)	A-C (with A5)
75th Percentile ("High")	Warehouse and Storage	260	330	350	400	260	330	360	410
	Multifamily Residential	370	440	450	520	420	490	550	620
	Education	510	580	580	650	550	630	690	760
	Office	540	630	610	680	570	660	680	760
	Public Assembly	550	630	650	740	580	650	720	810
	Other Types	600	680	680	760	640	720	780	850
50th Percentile ("Typical")	Warehouse and Storage	230	300	280	340	230	300	290	350
	Multifamily Residential	290	340	340	390	310	370	420	480
	Education	380	460	470	530	440	510	570	640
	Office	430	490	520	590	470	550	620	700
	Public Assembly	400	490	530	600	430	520	570	640
	Other Types	490	560	550	620	520	600	620	690
25th Percentile ("Low")	Warehouse and Storage	210	270	250	300	210	270	260	310
	Multifamily Residential	200	250	270	320	230	290	350	410
	Education	290	360	380	450	320	390	460	530
	Office	340	410	400	460	360	440	460	530
	Public Assembly	330	400	410	480	360	430	480	550
	Other Types	350	420	420	490	390	470	500	560

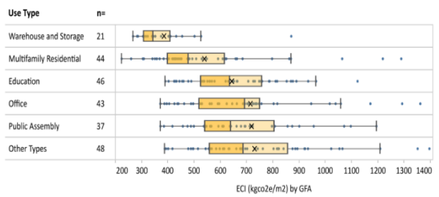

Figure 4. ECI (A-C with A5) performance scale distributions for benchmarks. This graphic shows structure, enclosure, and interior scope for life cycle stages A1-A3, A4, A5, B4-B5, and C2-C4. For visibility, extremely high outliers are cropped from view (n=1 Office and n=1 Public Assembly). Units are in kgCO2e/m2 and normalized by GFA.

Mississippi River Learning Project

GHG Calculations

Table 4. Construction Emissions from Land Use Change

Temporary Land Use Change	Area of Land Change[1] (acres)	2022 Net CO_2 Flux for Converted Land Type[2] (M metric tons CO_2e)	2022 Total US Land Use Change [3] (thousands of hectares)
Forest Land to Settlement	2.20	58.6	440
Wetland to Settlement	0.09	0.1	14
Grassland to Settlement	0.96	7.5	1,648
TOTAL	**3.25**	**--**	**--**

[1] Land use areas obtained from UofM 2016 High Res Dataset.

[2] Net CO2 flux tables for converted land types. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2022.

https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022

[3] Table 6-5: Land Use and Land-Use Change for the U.S. Managed Land Base for All 50 States, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2022.

https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022

[4] The below conversion were used for calculations:

Unit	Amount	Unit
hectare	2.471	acres

Mississippi River Learning Project
GHG Calculations

Table 5. Operations Emissions Summary

Source	CO_2e (metric tons/year)
Welcome Center Energy Consumption	118
River Learning Center Energy Consumption	61
Boathouse/Storage Energy Consumption	41
Marina Energy Consumption	28
Land Use Change	121
TOTAL	**149**

Mississippi River Learning Project
GHG Calculations

Table 6. Operations Emissions from Electrical Consumption

Source[1]	Energy Consumption[1] (kWh/year)	eGRID Subregion	CO_2 Emission Factor[2] (lb/MWh)	CH_4 Emission Factor[2] (lb/MWh)	N_2O Emission Factor[2] (lb/MWh)	CO_2[3] (metric tons/year)	CH_4[3] (metric tons/year)	N_2O[3] (metric tons/year)	CO_2e[4] (metric tons/year)
Welcome Center	281700	MROW	920.0	0.097	0.014	117.55	1.24E-02	1.79E-03	118
River Learning Center	144300	MROW	920.0	0.097	0.014	60.22	6.35E-03	9.16E-04	61
Boathouse/Storage	98300	MROW	920.0	0.097	0.014	41.02	4.33E-03	6.24E-04	41
Marina	66400	MROW	920.0	0.097	0.014	27.71	2.92E-03	4.22E-04	28
TOTAL	--	--	--	--	--	**246.50**	**2.60E-02**	**3.75E-03**	**248**

[1] Data provided by Rockwise Strategies.

[2] Table 6, Electricity. Emission Factors for Greenhouse Gas Inventories, EPA CCCL. January, 2025. https://www.epa.gov/climateleadership/ghg-emission-factors-hub

[3] The below conversion were used for calculations:

Unit	Amount	Unit
1 MWh	1000	kWh
1 US ton	2000	lbs
1 US ton	0.907	metric tons

[4] CO_2e calculated by multiplying the Global Warming Potential (GWP) for each pollutant by the potential pollutant emissions. GWPs (100-Year Time Horizon) are from Table A-1 to Subpart A of Part 98, Title 40.

Pollutant	GWP
CO2	1
CH4	28
N2O	265

Mississippi River Learning Project
GHG Calculations

Table 7. Operations Emissions from Land Use Change

Permanent Land Use Change	Area of Land Change[1] (acres)	2022 Net CO_2 Flux for Converted Land Type[2] (M metric tons CO_2e)	2022 Total US Land Use Change [3] (thousands of hectares)	CO_2e Emission Factor[4] (metric tons CO_2e/acre)	CO_2e (metric tons/year)
Forest Land to Settlement	2.20	58.6	440	53.90	118.65
Wetland to Settlement	0.09	0.1	14	2.89	0.26
Grassland to Settlement	0.96	7.5	1,648	1.84	1.76
TOTAL	**3.25**	--	--	--	**120.68**

[1] Land use areas obtained from UofM 2016 High Res Dataset.

[2] Net CO2 flux tables for converted land types. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2022.

https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022

[3] Table 6-5: Land Use and Land-Use Change for the U.S. Managed Land Base for All 50 States, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2022.

https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022

[4] The below conversion were used for calculations: