

# ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at: [EAW Form and Guidelines](#).

The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW for.

**Cumulative potential effects** can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.

**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:** [Interstate Island Avian Habitat Restoration Project](#)
2. **Proposer:** [MN Department of Natural Resources](#)  
Contact person: [Melissa Sjolund](#)  
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3. **RGU:** [MN Department of Natural Resources](#)  
Contact person: [Kate Fairman](#)  
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4. **Reason for EAW Preparation:** (check one)  

<u>Required:</u>	<u>Discretionary:</u>
<input type="checkbox"/> EIS Scoping	<input type="checkbox"/> Citizen petition
<input checked="" type="checkbox"/> <b>Mandatory EAW</b>	<input type="checkbox"/> RGU discretion
<input type="checkbox"/> Proposer initiated	

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

[M.R., part 4410.4300 subpart 27, item A: Wetlands and Public Waters](#)

5. **Project Location:**  
County: [St. Louis County, Minnesota and Douglas County, Wisconsin](#)  
City/Township: [Duluth, MN and Superior, WI](#)  
PLS Location (1/4, 1/4, Section, Township, Range): [T49N, R14W, Sections 3, 4](#)  
Watershed (81 major watershed scale): [St. Louis River](#)  
GPS Coordinates: [46° 44' 57.8" N, 92° 6' 35.1" W](#)  
Tax Parcel Numbers: [Not applicable. There are no tax parcel numbers associated with either the MN or WI portions of the island.](#)

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

- County map showing the general location of the project;

See [Figure 1. General Project Location](#)

- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and

See [Figure 2. Interstate Island WMA 1:24,000 Topographic Map](#)

- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.

#### Additional Figures

[Figure 3. Phase I Construction Plans](#)

[Figure 4. Phase I Implementation Photo \(September 2015\)](#)

[Figure 5. Phase II Concept Design](#)

[Figure 6. Nesting Area Enhancements](#)

[Figure 7. Current Interstate Island WMA Topography and Bathymetry](#)

[Figure 8. Alternatives considered](#)

[Figure 9. Interstate Island WMA Common Tern Nesting Counts \(1989-2018\)](#)

#### Attachments

[Attachment A. St. Louis River Area of Concern Background](#)

[Attachment B. 2014 Environmental Review Need Determination](#)

[Attachment C. Plan Sets for Spring and Fall Work](#)

[Attachment D. Natural Heritage Review](#)

[Attachment E. SHPO Letter and Historic Properties Reports](#)

[Attachment F. Geotechnical Information](#)

[Attachment G. SEH Design Memorandum](#)

## **6. Project Description:**

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

Minnesota DNR proposes to restore and protect imperiled avian habitat on Interstate Island Wildlife Management Area (WMA). The WMA is the largest of two remaining Common Tern nesting areas in the Lake Superior watershed and is the only federally-listed critical habitat for Piping Plover in Minnesota. Recent high water levels have caused significant loss of critical habitat on the island.

- 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 equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

The Interstate Island Avian Habitat Restoration Project (Project) will restore critical avian habitat in the St. Louis River estuary (SLRE), a waterbody designated by the Minnesota Department of Natural Resources (MNDNR) as a resource of Outstanding Biological Significance. Interstate

Island was designated as a state Wildlife Management Area (WMA) in 1983; it is also located within the St. Louis River Area of Concern (SLRAOC, see Attachment A). This Project has been identified as an action required to mitigate legacy impacts, restore beneficial uses, and ultimately delist the SLRAOC.

Interstate Island WMA is an approximately 5.5-acre island within the Duluth-Superior Harbor (Figure 2). The island is located on the Minnesota - Wisconsin border and is jointly owned and managed by MNDNR and the Wisconsin Departments of Natural Resources (WDNR). Interstate Island WMA is the largest of only two remaining Common Tern (*Sterna hirundo*) nesting areas in the Lake Superior watershed and is the only federally-listed critical habitat for Piping Plover (*Charadrius melodus*) in Minnesota.

Interstate Island is a feature constructed from dredge materials by the United States Army Corps of Engineers (USACE) in the 1930's. In the 1980's, the site became of interest as habitat for Common Terns as human disturbance and site development in other nesting locations in the estuary made those places no longer viable for the species (Matteson, 1988). A restoration project was conducted on Interstate Island in 1989 to clear all vegetation completely to expose sand substrate in an effort to attract Common Terns. The entire breeding population of the SLRE was subsequently attracted to the site in 1989 and 1990 (Penning, 1983).

The second tern colony in the watershed is located in Ashland, Wisconsin on a crib structure that was a remnant of an old pier that has been reconstructed several times and will be again in 2019. Both the Interstate Island and Ashland colonies are located on man-made features that have been restored and managed over time in their histories as nesting sites for Common Terns (Matteson, 1988). Constructing and maintaining man-made features is a proven method for managing critical habitat to protect these targeted species.

Approximately two-thirds of all Common Terns breeding in the Lake Superior watershed nest on Interstate Island WMA, making it critical to the Lake Superior, Minnesota, and Wisconsin tern population. Due to the loss of SLRE island habitat due to historic dredging and filling, Interstate Island WMA is the only remaining and viable Common Tern nesting area in the SLRE. Therefore, it is of vital importance to protect it with restoration approaches that will increase resilience to rising water levels.

Piping Plover do not currently nest on Interstate Island and have not been known to nest there in the past. The presence of a colony of Ring-billed Gulls nesting on the island limits the possibility of plovers nesting there at present. However, state and federal avian experts agree that the island is suitable stopover habitat for the species, which is limited in the estuary. This project incorporates habitat requirements for Piping Plover, such that the restored island will provide increased habitat options for this endangered species.

Complete restoration of Interstate Island WMA has been planned over the following three phases.

- Phase I: Emergency nesting habitat protection (completed in 2015)
- Phase II: Large-scale restoration and stabilization of flooded habitat
- Phase III: Develop and implement a long-term monitoring and maintenance plan

Because MNDNR completed Phase I in 2015, it is not considered part of the proposed Project and is not detailed in this Environmental Assessment Worksheet (EAW). Phases II and III comprise the proposed Project and are detailed in this EAW.

### Phase I

MNDNR designed and constructed Phase I in 2015 with support from the US Fish and Wildlife Service (USFWS) and Minnesota's Outdoor Heritage Fund (OHF). MNDNR strategically placed approximately 3,300 cubic yards (CY) of sandy substrate and other surface amendments to protect a 30,000 square foot (sqft) nesting area from flooding (Figure 3). Phase I was successfully implemented in September 2015 and provided the necessary short-term protection (Figure 4).

Due to the size and scope of Phase I, MNDNR determined that the state's EQB Rules Environmental Review Unit did not require MNDNR to prepare an EAW in 2015 (Attachment B).

### Phase II

Phase II of the Project was designed in consultation with local avian species experts and design elements reflect habitat requirements listed in scientific literature. The design incorporates specific habitat requirements of Common Terns and Piping Plover, as well as providing sandy beach habitat for use by a variety of shorebirds. MNDNR will implement Phase II over two seasons to fully restore, stabilize, and maintain the long-term viability of Interstate Island WMA. All restoration activity will occur outside of the Common Tern nesting season (March 1 to August 30); exclusion dates for Piping Plover and other migratory shorebirds do not apply, as they are not currently nesting on the island. The Phase II design incorporates a conservative reference elevation of 605.5' IGLD85. This is equal to the historic Lake Superior high elevation of 604.5' IGLD85, with an additional foot incorporated to ensure island protection and resiliency to increasingly unpredictable Lake Superior water levels. For the purpose of this Project, the 605.5' IGLD85 elevation identifies the area of Interstate Island that would reliably be considered upland in the long-term.

#### *Spring Work*

Attachment C presents the plan sets for spring and fall work. In Spring 2020, MNDNR will place 14,600 CY of fill to stabilize two key areas: the designated Common Tern area and the lower elevation portions of the island that are currently flooded and/or at risk of flooding (Table 1). A portion of the island's southern extent is excluded from the work area, as it is currently at desired elevation. Common borrow will be placed in the work area, raising the island's elevation by one to two feet at the perimeter and by three to four feet near the center. Shoreline slopes in the restored areas will be approximately 8%, as area wildlife experts recommend beach slopes of no more than 10% for shorebird use. Spring construction will increase the total island acreage above the ordinary high water level (OHWL) from 4.3 to 4.4 acres; shoreline length will decrease slightly from 2,093 to 2,085 linear feet (LF). The portion of the island considered to have long-term upland stability (605.5' IGLD 85 elevation or greater) will increase from 1.7 to 3.0 acres; shoreline length at this elevation will increase from 1,546 to 1,624 LF.

**Table 1.** Interstate Island WMA construction details

	EXISTING CONDITIONS		SPRING CONSTRUCTION		FALL CONSTRUCTION	
	MN	WI	MN	WI	MN	WI
TOTAL ISLAND ACREAGE (above OHWL) <sup>(1) (4)</sup>	3.1	1.2	3.2	1.2	3.8	5.2
TOTAL ISLAND ACREAGE (below OHWL) <sup>(1)</sup>	0.3	0.2	0.3	0.2	0.5	2.0
TOTAL ISLAND ACREAGE (above reference) <sup>(2)</sup>	1.1	0.6	2.4	0.6	3.0	4.0
ISLAND ACREAGE (above OHWL) (undisturbed) <sup>(3)</sup>	0.2	0.7	N/A	N/A	N/A	N/A
ISLAND ACREAGE (above reference) (undisturbed) <sup>(3)</sup>	0.2	0.5	N/A	N/A	N/A	N/A
ISLAND PERIMETER (OHWL)	1,081 LF	1,012 LF	1,067 LF	1,018 LF	1,206 LF	2,207 LF
ISLAND PERIMETER (reference)	910 LF	636 LF	981 LF	643 LF	1,391 LF	1,714 LF
FILL PLACED BELOW OHWL	N/A	N/A	90 CY	N/A	1,050 CY	7,900 CY
FILL PLACED ABOVE OHWL	N/A	N/A	14,600 CY	N/A	7,000 CY	50,000 CY
<b>Footnotes</b>						
(1) OHWL = Ordinary High Water Level of 602.8' IGLD85'						
(2) The reference water elevation used in design is 605.5' IGLD85						
(3) Portions of the island that are "undisturbed" are already at the desired elevation						
(4) Included undisturbed areas						

Common borrow used for spring work must be tested and verified to be low in organic material and contaminant free. MNDNR's selected contractor may source this fill from an upland sand pit or through beneficial use of federal navigation channel dredging. Sands purchased from a regional commercial pit are of glacial origin and therefore likely to meet required specifications. Beneficial use of dredged materials must be coordinated with the USACE and meet additional state and federal permit requirements for placement below and above water. USACE tests all potential dredged materials against sediment quality targets established by Minnesota for their beneficial use in restoration (MPCA and MNDNR, 2015b). See section 12.a., below, for more detail on USACE methods. In addition to meeting state and federal permit criteria, materials will be evaluated against more stringent avian habitat guidelines established by WDNR for Piping Plover habitat restoration on nearby Wisconsin Point.

At the center of the island lies a 30,000 sqft rectangular area that is protected and managed exclusively for Common Tern use. In this area, MNDNR will place an additional two feet of clean, coarse-grained sand on top of two to three feet of common borrow to establish suitable nesting habitat. This material has stricter requirements for grain size than the common borrow and will be sourced from a commercial sand pit. Material testing results will be reviewed to verify that criteria for grain size, organic content, and contaminant levels are met. To promote drainage, the elevated nesting area will be crowned at the center with 2% slopes. The 20% slopes on the north and south banks of the elevated nesting areas subjected to higher wind energy will be protected using approximately 610 CY of riprap underlain with geotextile fabric,

keyed in at two feet below the common borrow surface elevation. Riprap side slopes will be approximately 20%. Existing riprap will be salvaged and re-used to the extent possible.

MNDNR will enhance Common Tern habitat in spring by removing all woody vegetation on the island. Trees currently occupying the island are generally in poor health or dead, and serve as undesirable perches for predators. Prior to placement of materials, MNDNR will cut and remove all woody vegetation. Additional spring habitat enhancements include placing small stones and driftwood in the Common Tern nesting area and placing larger driftwood on the sandy beaches outside the nesting area. MNDNR will salvage driftwood currently occupying the nesting area prior to construction, and then re-scatter it afterwards with new wood added as needed. Approximately 25-50% of the immediate nesting area will be scattered with small stones (0.5-1.5" in diameter). Figure 5 displays desired nesting area conditions. MNDNR will also install new fencing to protect the Common Tern area. The new fences will be sized and configured to deter Ring-billed Gull use, exclude mammalian predators, reduce wind energy in the nesting area, and allow for maintenance and management access.

MNDNR worked with USACE to identify a location of suitable navigational channel dredge material to beneficially use for a portion of the fill required for spring 2020 work (e.g. the common borrow). The selected contractor will have a choice between using material from the identified location or using common borrow from a glacial deposit.

#### *Fall Work*

In fall 2020, a larger effort will further increase the island's elevation and footprint to achieve the objective of providing at least 5.5 acres of stable, long-term, upland habitat (Attachment C). The upland habitat includes the nesting area specific to Common Terns, as well as sandy beach habitat with slopes of 10% or less suitable for Piping Plover and other shorebirds that may use the habitat. Expanding the island to create additional upland habitat is necessary to reduce pressure and predation on the Common Terns from co-nesting species such as Ring-billed Gulls. Historically, Common Tern population size and reproductive rates on the island have been highest when water levels were high and upland areas were maximized.

An alternatives analysis concluded that expanding the island to the west provides the least-impactful means of ensuring the availability of quality, long-term habitat for use by a variety of shorebird species (see section 11.b.iv for additional information on alternatives considered). MNDNR will place 55,000-70,000 CY of fill to raise the elevation of a 7.0-acre area at 605.5' IGLD85 elevation (Table 1) from approximately 600 to 606' IGLD85. Ten percent shoreline slopes will be established to provide habitat for a variety of shorebirds, decreasing pressure on the Common Tern nesting area. Completion of the fall work will increase the total shoreline from 2,093 LF to 3,413 LF. The 7.0 acre area is necessary to achieve the 5.5 acre goal with shoreline slopes of <10% required for shorebird use; the design also allows for equilibration of the sandy material along the shoreline by natural wave action consistent with current USACE design guidance for island creation (USACE, 2012). Several small dunes will be established across the southern portion of the feature; MNDNR will plant sparse native dune community vegetation in these areas (Table 2). Rock vane features of cobble will be installed on the surface of interior of the Phase II island area to minimize wind erosion.

MNDNR intends to work with the USACE to beneficially use suitable navigational channel dredge

materials for all or a portion of the fill required in fall 2020. As described in EAW Item 12.a., any dredged materials used for restoration will be tested and verified to meet state and federal permit requirements for placement above and below water, as well as more stringent criteria established by WDNR for Piping Plover habitat restoration. If sufficient dredge materials are not obtained, commercially purchased sand may be used to make up the deficit, or the project footprint downsized accordingly.

Phase II restoration would directly benefit the Common Tern by improving the quality and availability of nesting and rearing habitat. Increasing the island’s sandy beach area provides additional nesting and stopover habitat for shorebirds, including Piping Plover. This additional habitat would reduce competition and predation in the portion of the island that is managed for terns. Current use of the island by Piping Plover as stopover habitat is unknown; however, spring and fall migration monitoring is planned that would help to improve understanding of use by Piping Plover and other migrating shorebirds. Annual monitoring following spring 2020 construction would determine the restoration’s effects on tern nesting productivity and migratory bird use. MNDNR will evaluate restoration effectiveness by examining pre- and post-restoration breeding success, juvenile survival, and habitat use. University of Minnesota’s Natural Resources Research Institute (NRRI) maintains a long-term dataset on the island’s tern colony; NRRI researchers will contribute to the analysis of restoration effectiveness and sustainability of the colony.

**Table 2.** Native dune community planting list

Species <sup>(1)</sup>	Common Name
<i>Ammophila breviligulata</i>	American beachgrass
<i>Artemisia campestris</i>	Field sagewort
<i>Asclepias syriaca</i>	Common milkweed
<i>Cyperus schweinitzii</i>	Schweinitz’s flatsedge
<i>Elymus canadensis</i>	Canada wildrye
<i>Fragaria virginiana</i>	Wild strawberry
<i>Hudsonia tomentosa</i>	False heather
<i>Lathyrus japonicas</i>	Beach pea
<i>Maianthemum stellatum</i>	Starry false solomon’s seal
<i>Oenothera biennis</i>	Common evening primrose
<i>Sporobolus cryptandrus</i>	Sand Dropseed

(1) Species availability will vary, some may be only available by seed, by container stock, or by plugs. *A. breviligulata* and *H. tomentosa* are state-listed threatened in Minnesota.

### Phase III

Common Tern habitats are inherently dynamic. MNDNR would ensure the sustainability of Interstate Island WMA as suitable tern habitat by developing a comprehensive Long-term Monitoring and Maintenance Plan (Plan) to assess and address the ongoing and cumulative effects of wind scour, ice, storm surge, wave wash, woody vegetation, and invasive species. MNDNR will develop the Plan following completion of final Phase II construction plans and specifications. The Plan will focus on maintaining suitable vegetation communities, infrastructures, and the specific substrates required to enhance nesting habitat. The Plan will

also maintain the extent and elevation of Interstate Island WMA via periodic substrate replacement within the footprint and elevations established in Phase II. All maintenance activity would occur outside of the Common Tern nesting season (March 1 to August 30).

MNDNR and WDNR intend to work with the USACE to beneficially use suitable navigational channel dredge materials to address anticipated substrate losses in a systematic manner. As described in EAW Item 12.a., any dredged materials used for restoration would be tested and verified to meet state and federal permit requirements for placement above and below water, as well as more stringent criteria established by WDNR for Piping Plover habitat restoration. MNDNR and WDNR would jointly implement the Plan, ensuring that we protect our investments and that Interstate Island WMA can be maintained as critical Common Tern nesting habitat and stopover habitat for other migrating shorebirds for many years to come.

c. Project magnitude:

<b>Parameter</b>	<b>Size</b>
Total Project Acreage	Total footprint: 11.5 ac Area above OHWL (602.8' IGLD85'): 9.0 ac (3.8 ac in MN)
Linear project length	Perimeter using OHWL: 3,414 LF (1,206 LF in MN)
Number and type of residential units	N/A
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	N/A
Institutional building area (in square feet)	N/A
Other uses – specify (in square feet)	
Common Tern Nesting Habitat	0.7 ac (all in MN)
Shorebird Nesting and Stopover Habitat	8.3 ac (3.1 ac in MN)
Structure height(s)	N/A

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

Purpose

The Project’s primary purpose is to maintain viability of the largest Common Tern nesting colony in the Lake Superior watershed. High quality nesting habitat is critical to the success of the colony. Approximately 50% of available habitat on the island has been lost due to a combination of sustained high water levels, strong storm surges, wind erosion, and colonization by woody vegetation. High water levels and strong storm surges have been occurring in recent years due to changing climate conditions; the Project design addresses these impacts to secure the restored habitat for the future. Objectives supporting this purpose include the following:

- Restore at least 5.5 acres of stable upland habitat for nesting and rearing use by Common Terns and nesting and stopover use by other migratory shorebirds, including Piping Plover;
- Increase island elevation to protect against flooding;
- Stabilize the island perimeter to prevent scour and further habitat loss;

- Enhance substrate composition and control woody vegetation;
- Quantify target populations' status, nest success, and habitat usage; and
- Develop and implement a proactive program to sustain habitat quality.

### Need

The Common Tern is listed as threatened in Minnesota and endangered in Wisconsin. In the SLRE, Common Terns are currently limited by legacy physical habitat impairments. When the SLRE was first mapped in 1861, there were extensive areas of sandy shoreline and numerous islands suitable for nesting colonies for terns and other waterbirds. Since that time, dredging and filling for industrial development has had significant negative impact on the natural shorelines and islands needed by colonially nesting waterbirds. In recent years, new islands, created from dredged material have served as artificially created replacement habitat for nesting Common Terns whose natural habitats have been lost to development. In the late 1970s, Common Terns nested on at least four sites in the SLRE. These substitute nesting sites have proven to be less stable over time due to their artificial origins and have failed to maintain the type of habitat needed by colonial waterbirds without ongoing management.

Loss of habitat due to industrial development has now confined Common Terns to one site (Interstate Island WMA), which is unstable due to increased storm surge and flooding from high water elevations and increased storm severity in recent years. This one colony serves as the nesting site for approximately two-thirds of the Common Terns found on Lake Superior. A colony of Ring-billed Gulls also nests on the island. Ring-billed Gulls are nesting habitat competitors of Common Terns, as they will use the same habitat for nesting. Competition for tern nesting habitat by Ring-billed Gulls has increased in recent years as gull nesting habitat has decreased due to flooding and erosion of the island, increasing the vulnerability of the tern colony. This vulnerability has been expressed in terms of decreased colony sizes and even complete colony failure in some years due to flooding, predation, or other unknown issues.

In 2014, rising lake levels and increased storm surges resulted in significant and sustained flooding at Interstate Island. This change in lake level was unexpected and contrary to what was then predicted as a result of changing climate. In 2015, the colony was only 101 nesting pairs, the lowest number since 1989. Lake levels have remained high and may represent a new long-term challenge for restoring lost estuarine habitats. This prompted local resource managers to increase the elevation of the tern nesting area and build a protective berm around it in 2015 to protect it from destruction by flooding. These completed efforts have been identified as Phase I of the Project.

Though the 2015 construction successfully protected the nesting area for the time being, resource managers at MNDNR and WDNR have watched erosion continue and water levels rise while nesting and reproduction rates remain well below recovery goals. These resource managers formally recommended that SLRAOC Coordinators review and revise the necessary management actions related to Common Tern habitat as the population is in decline due to legacy habitat loss. These recommendations resulted in the incorporation of this Project as a management action required to remove SLRAOC Beneficial Use Impairment 2 (BUI 2): Degraded Fish and Wildlife Populations in 2019. The forthcoming 2019 SLRAOC Remedial Action Plan will reflect this addition.

Implementation of Phase II and development of a Long-term Monitoring and Maintenance Plan

are required in order to remove BUI 2 and ultimately delist the SLRAOC. Implementation of the Plan (Phase III) is not required for BUI 2 removal but is an important Project phase and included in this review.

Interstate Island is the only federally designated critical habitat for Piping Plovers in the state of Minnesota. While Piping Plover have not nested at Interstate Island and are not likely to nest there while the Ring-billed Gull colony is present, the island may be used as stopover habitat for Piping Plover, as well as other migrating shorebirds (see beneficiaries below). Critical habitat is protected by Section 7 of the Endangered Species Act of 1973 by requiring Federal agencies involved in carrying out, funding, or permitting actions on critical habitat to conduct a special review to ensure that activities do not destroy, alter, or adversely modify the important components of critical habitat (USFWS, 2001). Three federal agencies--USFWS, USEPA, and USAC—are involved in the work at Interstate Island.

Ring-billed Gulls have historically been a nuisance to private industry in the harbor, due to their numbers and habits. MNDNR Wildlife managers prefers the gulls to nest at Interstate Island, which is publicly owned, versus having them nest in locations where they may cause a nuisance (i.e. private property). Managers of Interstate Island WMA have a federal permit for crushing Ring-billed Gull eggs when they are found within the Common Tern nesting area; this provides a small amount of population management for the colony. While this Project focuses on restoration of Interstate Island primarily for the benefit of the Common Tern colony currently nesting there, MNDNR recognizes that the conditions present on the island with the gulls may change. Therefore, the restoration plan is designed to provide habitat suitable for Piping Plover, as well as other shorebirds, which is limited in the estuary. Monitoring will be conducted to quantify use of the island by other species. Habitat suitable for Piping Plover nesting is also being created at Wisconsin Point as one of the removal actions for BUI 2 (see Table 4, project 9.15).

#### Beneficiaries

Primary Project beneficiaries are the species of concern whose habitats are targeted by proposed restoration and include Common Tern, Piping Plover, and other migrating shorebirds. The Project's avian experts have identified more than 25 migratory shorebird species that could be expected to benefit from the restoration project. Fourteen of these species have been observed on the island during limited monitoring conducted in Fall 2019, including: Semipalmated Plover, Sanderling, Baird's Sandpiper, Least Sandpiper, Buff-breasted Sandpiper, Semipalmated Sandpiper, Spotted Sandpiper, Lesser Yellowlegs, Black-bellied Plover, Killdeer, Ruddy Turnstone, Red Knot (was seen on the island earlier this fall), Pectoral Sandpiper, and Dunlin. A secondary beneficiary is the Rhode Island Hairy-necked tiger beetle, a state-listed endangered species last recorded near Interstate Island WMA in 1974. This species is found on sandy beaches along the Lake Superior shoreline in the Duluth area. MNDNR proposes to improve habitat for this species by restoring Interstate Island's sandy beaches. The people of Minnesota and Wisconsin, and specifically the citizens of Duluth, Minnesota and Superior, Wisconsin would also be the beneficiaries of the habitat improvements achieved at Interstate Island WMA and throughout the SLRAOC.

- e. Are future stages of this development including development on any other property planned or likely to happen? Yes No

If yes, briefly describe future stages, relationship to present project, timeline and plans for

environmental review.

Actions required to remove nine BUIs and delist the SLRAOC are described and updated annually in the SLRAOC Remedial Action Plan (RAP)(MPCA and WDNR, 2018). Ongoing and future phases of remediation and restoration work associated with the SLRAOC process are listed in Table 3. These activities will contribute significantly to the 1,700-acre habitat restoration target associated with BUI 9: Loss of Fish and Wildlife Habitat, as well as to the targets associated with BUI 5: Restrictions on Dredging and BUI 4: Degradation of Benthos.

**Table 3.** Ongoing and future phases of SLRAOC remediation and restoration work. Status is current as of June 2019.

<b>RAP Action No.</b>	<b>State</b>	<b>Project Name</b>	<b>Project Description</b>	<b>Status</b>
2.06	MN/WI	Interstate Island Avian Habitat Restoration	Restore and maintain the largest Common Tern colony in the Lake Superior watershed	In progress
5.02	WI	Howard’s Bay (including Hughitt and Cummings Slips)	Remediate contaminated sediments.	In progress
5.03	WI	Superior Light & Power MGP Site/Coal Slip	Remediate contaminated sediments.	In progress
5.07	MN	Northland Pier/AGP Slip	Remediate contaminated sediments.	In progress
5.08	MN	Azcon Corp/ Duluth Seaway Port Authority Garfield Slip C	Remediate contaminated sediments.	In progress
5.09	MN/WI	Munger Landing	Remediate contaminated sediments; restoration.	In progress
5.13	MN	Ponds Behind Erie Pier	Remediate contaminated sediments.	In progress
5.19	MN	Thomson Reservoir	Remediate contaminated sediments.	In progress
5.2	MN	Scanlon Reservoir	Remediate contaminated sediments.	In progress
5.21	WI	Oil Barge Dock Slip	Remediate contaminated sediments.	In progress
5.22	WI	Tower Avenue Slip	Complete assessment on the need for remedial action.	Under assessment
5.23	WI	General Mills Slip	Complete assessment on the need for remedial action.	Under assessment
5.24	WI	Bunge Dock	Complete assessment on the need for remedial action.	Under assessment
5.25	WI	Superior Ore Docks	Complete assessment on the need for remedial action.	Under assessment
9.01	MN	Spirit Lake	Remediate contaminated sediments and restore emergent wetlands.	In progress

RAP Action No.	State	Project Name	Project Description	Status
5.18/9.08	MN	Mud Lake	Remediate contaminated sediments, establish more vital hydrologic connection and restore wetland habitat including wild rice; establish deep water.	In progress
9.09	MN	Perch Lake	Revitalize biological connection between estuary and Perch Lake and restore optimum bathymetry.	In progress
9.12	WI	Crawford Creek Habitat Restoration	Remediate contaminated sediments and restore habitat within stream, wetland, and floodplain.	In progress
9.14	WI	Pickle Pond	Habitat enhancement and sediment remediation as warranted by remediation to restoration evaluation.	In progress

Is this project a subsequent stage of an earlier project?  Yes  No

If yes, briefly describe the past development, timeline and any past environmental review.

Actions required to remove nine BUIs and delist the SLRAOC are described and updated annually in the SLRAOC RAP (MPCA and WDNR, 2018). To date, 19 SLRAOC remediation and restoration projects have been completed, or are under construction (see Table 4). These activities will contribute significantly to the 1,700-acre habitat restoration target associated with BUI 9: Loss of Fish and Wildlife Habitat, as well as to the targets associated with BUI 5: Restrictions on Dredging and BUI 4: Degradation of Benthos.

**Table 4.** Completed and under construction phases of SLRAOC remediation and restoration work. Status is current as of June 2019.

RAP Action No.	State	Project Name	Project Description	Status
5.04	MN	Minnesota Slip	Remediate contaminated sediments.	Complete
5.05	MN	Slip 2	Remediate contaminated sediments.	Complete
5.06	MN	Slip C	Remediate contaminated sediments.	Complete
5.14	MN	Slip 3	Remediate contaminated sediments.	Complete
5.17	MN	DSPA Garfield Slip D	Remediate contaminated sediments.	Complete
5.26	WI	Newton Creek/Hog Island Inlet	Remediate contaminated sediments.	Complete
5.27	MN/WI	St Louis River/ Interlake/Duluth Tar (SLRIDT)	Remediate contaminated sediments.	Complete

RAP Action No.	State	Project Name	Project Description	Status
9.02	MN	40th Avenue West R2R Project	Remediate contaminated sediments and restore habitat.	Under Construction
9.03	MN	Radio Tower Bay	Remove non-native material and restore optimum bathymetry.	Complete
9.04	MN	Grassy Point Restoration	Remove non-native material and restore optimum bathymetry.	Under Construction
9.05	MN	21st Avenue West R2R Project	Remediate contaminated sediments and restore habitat.	Under Construction
9.06	MN	Kingsbury Bay Restoration	Restore wetland complex at the mouth of Kingsbury Creek to pre-1961 condition.	Under Construction
9.07	MN	Knowlton Creek Watershed Project	Reduce runoff and sediment transport within watershed and restore cold-water stream habitat.	Complete
9.10	MN	Chambers Grove Park	Soften and restore shoreline in City of Duluth park. Create sturgeon spawning habitat in river channel.	Complete
9.11	WI	Allouez Bay	Vegetation restoration including removal of AIS and re-establishment of wild rice. Upstream sediment control outreach.	Under Construction
9.15	WI	Wisconsin Point Dune Restoration	Development of appropriate public access infrastructure to protect dunes and conduct dune restoration and invasive species control.	Under Construction
9.16	WI	Hog Island	Nesting area enhancement, habitat restoration.	Complete
9.17	WI	Fish Passage Culverts	Replace or retrofit a minimum of two perched culverts to allow for fish passage and other aquatic organism passage.	Under Construction
9.21	MN/WI	Wild Rice Plan and Associated Restoration Sites	Develop a plan that identifies the high priority restoration sites and provides a process for restoring those sites. Restoration of 275 acres of wild rice.	Under Construction

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

**Table 5.** Project area cover types

	Before	After		Before	After
Wetlands	0	0	Lawn/landscaping	0	0

	Before	After		Before	After
Deep water/streams			Impervious surface	0	0
Wooded/forest	0	0	Stormwater Pond	0	0
Brush/Grassland			Other (Non-native vegetation)	0	0
Cropland	0	0			
			<b>TOTAL</b>	<b>0</b>	<b>0</b>

Note: Project area cover types are not represented by the standard options given in the table above. The following table represents the project area cover types. The areas given are based on the total construction footprint for all phases; therefore, the total acreage is the same (11.5 acres) for before and after construction.

	Before		After	
	MN	WI	MN	WI
Sand/gravel (above 602.8' IGLD85)*	3.1 ac	1.2 ac	3.8 ac	5.0 ac
Open water (below 602.8' IGLD85)	1.2 ac	6.0 ac	0.5 ac	2.0 ac
Vegetated dune	0 ac	0 ac	598 sf	7,075 sf
<b>TOTAL</b>	<b>4.3</b>	<b>7.2</b>	<b>4.3</b>	<b>7.2</b>

\*Sand/gravel area includes nesting habitat area (30,000 sf in Minnesota, 0 sf in Wisconsin) & excludes vegetated dune area.

- 8. 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 prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

MNDNR is consulting with local, state, and federal government units (both MN and WI) to determine all permits, approvals, and certifications associated with the proposed Project. Table 6 lists anticipated applications, based upon the Phase I work completed in 2015; these are being evaluated for applicability and prepared for submittal.

**Table 6.** Anticipated local, state, and federal applications

Unit of government	Type of application	Status
City of Duluth	Special Use Permit for Construction	Complete
City of Duluth	Shoreland Use	Complete

Unit of government	Type of application	Status
MNDNR	Public Waters Work Permit	Application submitted
MNDNR	Prohibited Invasive Species Permit	To be submitted
MNDNR	Lake Superior Coastal Zone federal consistency letter	To be submitted by USFWS
MN-SHPO	Section 106 Consultation - National Historic Preservation Act	Complete
WI-SHPO	Section 106 Consultation - National Historic Preservation Act	Complete
MPCA	401 Water Quality Certification	Included in USACE NWP 27 (spring work); To be submitted (fall work)
MPCA	National Pollutant Discharge Elimination System (NPDES)/Site Dredge Permit	Application submitted
MPCA	NPDES General Construction Stormwater Permit	To be submitted by contractor
USACE	Nation Wide Permit 27	Application submitted
USACE	CWA Section 404 Permit	To be submitted
USACE	Section 10 Permit - Rivers and Harbors Act	To be submitted (fall work only)
WDNR	Waterway Permit	Application submitted (spring work); To be submitted (fall work)
WDNR	401 Water Quality Certification	Included in USACE NWP 27 (spring work); To be submitted (fall work)

**Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19.**

**9. Land use:**

a. Describe:

- i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

The WMA is an approximately 5.5 acre island parcel within the Duluth-Superior Harbor. The island is located on the Minnesota - Wisconsin border and is jointly owned and managed by the Minnesota and Wisconsin Departments of Natural Resources.

Interstate Island is designated and managed as both a State of Minnesota WMA and State

of Wisconsin wildlife refuge (see EAW Item 9.a.ii for more information). The island serves as the primary nesting colony for Common Terns on Western Lake Superior. There are only two nesting colonies of Common Terns in the entire Lake Superior Basin, one at Interstate Island WMA and the other at Ashland Tern Island WMA in Chequamegon Bay, Wisconsin. In 2018, 131 pairs of Common Terns nested at Interstate Island, about two-thirds of the Lake Superior breeding population. Interstate Island is also a major colonial nesting area for gulls. In 2018, more than 11,800 pairs of Ring-billed Gulls and 26 pairs of Herring Gulls also nested on the island.

Other wildlife species using the island or the shallow waters surrounding it include: Mallards, Great Blue Herons, Double-crested Cormorants, American White Pelicans, and a variety of shorebirds during migration. Fish species using the waters around the island include but are not limited to: Black Bullhead, Bluegill, Channel Catfish, Golden Shiner, Northern Pike, River Ruffe, Shorthead Redhorse, Smallmouth Bass, and White Sucker.

~~Little is known about the feeding habits of the Common Tern colony at Interstate Island. A research study on feeding locations of the colony using geolocation is currently underway led by University of Minnesota Natural Resources Research Institute researcher Annie Bracey. While this project will reduce the shallow open water habitat located on the east side of Interstate Island that could potentially be along the closest feeding grounds used by the terns, similar habitat is available in a much larger area along the north edge of the island, as well as on the southwest edge of the main island lobe, and on the southwest edge of the current island peninsula (see Figures 7a and 7b).~~

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

Plans applicable to the use of Interstate Island WMA and the surrounding resources are described below.

#### Minnesota State Wildlife Management Area (WMA)

Interstate Island was designated as a State WMA in 1983. According to the 1978 Duluth-Superior Harbor Land Use Management Plan, the purpose of the Interstate Island WMA was to enhance and expand the natural resource base of the lower St. Louis Bay. This included providing improved wildlife habitat and increasing the biological value of the site in partial compensation for the historic losses of habitat in the lower St. Louis Bay due to past development activities.

The WMA was developed and managed to provide suitable nesting and brood-rearing habitat for Common Terns and Piping Plovers. The current WMA serves all of these purposes, except that Piping Plovers have not been successfully established on the island. The island is managed for the terns by closing it to public access during the nesting season. Signs are posted around the boundaries of the island indicating that it is a nesting bird sanctuary and that trespassing is not allowed from March 1 to August 30. There is also no hunting permitted on the Minnesota side of the WMA due to its location within the city limits of Duluth, which has a city ordinance prohibiting discharge of firearms.

*The Interstate Island WMA Management Guidance Document (WMA Guidance Document)*

describes the purpose of the WMA and provides basic information regarding the management of the resource (Minchak and Staffon, 2007).

#### Federal Great Lakes Piping Plover Recovery Plan

The Federal *Recovery Plan for the Great Lakes Piping Plover (Charadrius melodus)* (USFWS, 2003) establishes a recovery objective to restore and maintain a viable Piping Plover population to the Great Lakes region and remove the Great Lakes population from the list of Threatened and Endangered Species by 2020. The plan's strategy includes protecting essential breeding and wintering habitat, in part through designation of critical habitat, with the criteria of ensuring the protection and long-term maintenance of essential breeding and wintering habitat sufficient in quantity, quality, and distribution to support a recovery goal of 150 pairs. Interstate Island is one of 35 designated critical habitat units along Great Lakes shorelines in eight states, and the only designated critical habitat in Minnesota.

#### Wisconsin Common Tern Recovery Plan

Wisconsin listed the Common Tern as endangered in December 1979. The Wisconsin Common Tern Recovery Plan reviews the species' former and current status and distribution, its life history, identifies limiting factors, discusses previous research and management, and presents goals, objectives, and strategies to achieve population stability (Matteson, 1988).

Per the recovery plan, the history of the Common Tern population in the St. Louis River estuary has been erratic and the population unstable. Between 1977 and 1987, nesting Common Terns declined by 63% in the estuary; this decline was largely driven by human disturbance and site development. Terns were encouraged to nest at Interstate Island in 1985, in an effort to remove them from sites of future development. The recovery plan identifies Interstate Island as a site that may offer long-term stability to nesting terns in the estuary.

#### Wisconsin Wildlife Refuge

Wisconsin Administrative Rules NE 15.05 designates Interstate Island under "no entry wildlife refuge, rookeries, and special areas." Per this designation, no person may enter upon such area for any reason from April 1 through August 24.

#### Lake Superior Lakewide Action and Management Plan (LAMP)

The Lake Superior Lakewide Action and Management Plan (LAMP) (Lake Superior Partnership, 2016) was developed to address challenges to the Lake Superior ecosystem such as aquatic invasive species, contaminants, habitat destruction, and more. The most recent (2016) LAMP is a binational action plan for restoring and protecting the ecosystem. The LAMP documents current conditions, ecosystem threats, lakewide objectives, priorities for future investigation, and actions or projects to achieve objectives.

Maintaining islands that support colonial nesting water birds is a LAMP objective. The region's Biodiversity Conservation Strategy, specifically identifies protection of Interstate Island as an action to protect and restore significant St. Louis River habitats. The proposed Project further connects to the LAMP by supporting climate adaptation strategies to

manage habitats, species, and ecosystem functions.

#### St. Louis River Area of Concern Remedial Action Plan (RAP)

The SLRAOC Remedial Action Plan (RAP) is a comprehensive plan for delisting the SLRAOC through a series of action steps that address the BUIs designated for the harbor (MPCA and WDNR, 2018). The RAP details the actions necessary to remove each of the BUIs identified for the SLRAOC. See Attachment A for additional background on the SLRAOC RAP.

The RAP identifies Common Tern and Piping Plover as indicator species associated with BUI 2: Degraded Fish and Wildlife Populations. These species were chosen because local and regional factors had caused their populations to decline at the time the SLRAOC was listed. The current BUI 2 removal objective for Common Tern requires support for both the numeric goals established by Wisconsin's Common Tern Recovery Plan and the efforts needed to maintain and enhance nesting habitat in the AOC. As of the 2018 RAP, these goals were not on track to be met without additional action being taken. Therefore, in early 2019, agencies managing the SLRAOC made restoring Common Tern habitat at Interstate Island a RAP management action required to address legacy habitat impairments and meet the BUI 2 removal target stating that native fish and wildlife populations are not limited by physical habitat. The restoration project at Interstate Island will be Action 2.06 in the forthcoming 2019 RAP document.

#### City of Superior Comprehensive Plan

The City of Superior's Comprehensive Plan 2010-2030 (City of Superior, 2011) acknowledges the value of the St. Louis River estuary as a natural resource and describes Interstate Island as an area targeted by WDNR for preservation, specifically as wildlife habitat. The Comprehensive Plan does not designate any specific future category of use for Interstate Island.

#### City of Duluth Comprehensive Land Use Plan

Duluth's Comprehensive Land Use Plan Imagine Duluth 2035 (City of Duluth, 2018) includes a geographic representation of the City's preferred land use scenario for 2035. It is an update to the City's 2006 comprehensive plan that puts people and natural places at its center, and shifts away from the auto- and industry-centric development of the past. The City of Duluth comprehensive plan identifies a future use of "open space" at Interstate Island WMA.

#### Minnesota Wildlife Action Plan 2015 - 2025

The Minnesota Wildlife Action Plan 2015 – 2025 (MNDNR, 2016) has identified richness hotspots of Species in Greatest Conservation Need (SGCN). SGCN are defined as native animals, nongame and game, whose populations are rare, declining, or vulnerable to decline and are below levels desirable to insure their long-term health and stability. Also included are species for which Minnesota has a stewardship responsibility. The SGCN population areas that produced the top 95% scores of mapped SGCN populations are recognized as Minnesota Conservation Focus Areas (CFA). The St. Louis Bay Estuary was classified as a CFA. The Estuary received a Medium High score for conservation value and need.

### Duluth-Superior Port Land Use Plan

The Duluth-Superior Port Land Use Plan (2016) was developed by the Duluth-Superior Metropolitan Interstate Council. The comprehensive port developmental plan serves the “working port” of the cities of Duluth, MN and Superior, WI. The plan’s Future Land Use Map includes Interstate Island WMA and describes the vision for the Port of Duluth-Superior for the next 20 years. The Interstate Island WMA is designated as a “natural area” which is available for outdoor recreation and public water access locations.

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

The proposed Project is compatible with the following local zoning and overlay districts:

#### Floodplain

In accordance with Duluth zoning regulations regarding floodplain ordinances, Article II, Section 51- 16 states this Project is permitted under Rule a3, falling in the category of a wildlife and nature preserve, fish hatcheries, and fishing areas.

Based on the most current floodplain map Interstate Island WMA lies within a designated FEMA 100- year floodplain. The water level of the Estuary is controlled by the surface elevation of Lake Superior and river flow has a minor effect on flood elevation. The proposed Project will not increase floodplain capacity nor change the frequency, magnitude, or extent of the flooding.

#### Cities of Duluth and Superior Zoning

The Interstate Island WMA is zoned by the City of Duluth as Industrial Waterfront (I-W). The I-W district is intended to provide for water-dependent and port- dependent industrial uses. Office structures are allowed providing they clearly are incidental and supportive of on-site industrial uses. Interstate Island is not included in the City of Superior Zoning map.

#### Lake Superior Coastal Zone

The Project is within the Lake Superior Coastal Zone under the jurisdiction of the Minnesota Lake Superior Coastal Program (MLSCP) as administered by the MNDNR. The Project is a federal action that has reasonably foreseeable effects on coastal uses or resources. It will be subject to the Federal Consistency Review. The MNDNR and federal agencies must follow the requirements of 15 Code of Federal Regulations (CFR) 930, Subpart C, which require a review of federal activities or federally funded projects to determine consistency, to the maximum extent practicable, with the enforceable policies of MLSCP.

The evaluation of federal consistency by MNDNR is a brief evaluation of the relationship of the proposed activity and its reasonably foreseeable coastal effects considered enforceable under the review. The review includes identifying whether federally approved state coastal policies are met, such as approved county shoreland ordinances and approved floodplain ordinances. The proposed Project appears to be compatible with the terms of the review.

#### Other

Interstate Island WMA and the St. Louis River are not designated as wild and scenic rivers or critical areas.

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

The proposed Project is compatible with the nearby land uses, local zoning ordinances, and associated plans described above. The plans identified above apply to this Project because Interstate Island WMA is within the geographic boundary of the plans and/or the Project impacts species addressed by the plans. The Project is compatible with the Plans identified above because it supports goals for land use, wildlife species recovery and protection, and ecological restoration. In the case of the SLRAOC RAP, Project completion is required to achieve plan goals.

The objectives of the proposed Project are compatible with existing local land use and city zoning. The proposed project will not result in any changes to current zoning designations.

- c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

Per the *WMA Guidance Document*, all restoration and long-term maintenance activities will occur outside of the nesting season (March 1 – August 30). No further incompatibility has been identified.

## 10. Geology, soils and topography/land forms:

- a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic 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 Lower St. Louis River flows through thick layers of red clay deposited approximately 11,000 years ago as the Superior Lobe of the Laurentide Ice Sheet retreated. After the level of ancestral Lake Superior dropped, the river and its tributaries cut deeply incised valleys through the easily eroded clay. When the lake level rose again, the river valley was flooded, creating a complex estuary with an irregular shoreline and bays at the mouth of each tributary (SLRCAC, 2002).

- 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, highly permeable 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 in response to Item 11.b.ii.

In 2014, the Minnesota Pollution Control Agency (MPCA), proposer of the adjacent 21<sup>st</sup> Ave

West project, contacted the USACE to retain GEI Consultants to install borings and take sediment samples for geotechnical analysis. Four borings were placed at the project site, ranging in depth between 35 and 59 feet. GEI borings placed to the north, northwest, and west of Interstate Island encountered sediments that generally consisted of silt underlain by clayey silt, organic clay, or silty clay followed by sand (GEI Consultants, 2015). See Attachment F for a map of boring locations and associated boring logs.

Interstate Island was created from dredge spoil when the navigational channel was dredged in the 1930s. The soil of the island is composed primarily of well-drained sand with some silt and gravel. The soil and sand were graded and shaped and the north side of the island and western tip were stabilized with rip-rap in 1989. The shoreline of the island ranges from sandy to cobblestone beach. In 2015, MNDNR strategically placed approximately 3,300 CY of sandy substrate and gravel to protect the 30,000 square foot nesting area from flooding (Figure 3).

Interstate Island was studied by USACE – Detroit District as part of the adjacent 21<sup>st</sup> Avenue West project (Table 4). This include the geotechnical analysis described above, as well as hydrodynamic and sediment transport modeling. Due to the location of the Project and nature of the habitat type, the island is subjected to wind, wave, runoff, and ice erosional forces. As described in Attachment G, modeling conducted by USACE revealed dominant erosional forces (riverine flow) and estimated fill settlement. Modeling also indicated which portions of the island are most susceptible to wave erosion (southwest portion) and predicted erosion rates of both placed and native island materials under multiple wind and river flow scenarios. MNDNR consulted and incorporated these studies in the project design and also used them to develop appropriate erosion and sediment control methods. (Attachment G).

Figure 7a displays the results of a December 2018 topographic survey and January 2019 bathymetric surveys. The island's upland footprint fluctuates significantly with changing lake levels due to its low profile. In recent years, this means that large portions of the island are low enough that the soil is wet, saturated, or completely flooded. The northern portion of the island is primarily between 602' and 604' IGLD85 elevation, meaning it is frequently inundated. For example, in the month of May 2019, the daily mean Lake Superior water elevation in Duluth (station no. 9099064) was above 603' IGLD85 elevation for 27 out of 31 days with the monthly mean elevation of 603.2' IGLD85 (NOAA, 2019). The Common Tern nesting area is between 605' and 607' IGLD85; elevation, flanked by a small dune area to the south, where elevations range from 607' to 610' IGLD85.

Most of the water immediately surrounding the island is shallow at three to four feet deep (Figure 7b). There is one large hole on the south side of the island that is 10 to 40 feet deep (not included in 2019 survey). It was created sometime between 1967 and 1970 by sand and gravel dredging operations to provide fill for building docks in the harbor.

## **11. 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, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include 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 within the St. Louis River bay (PWI 69-1291) and is one-third of a mile upstream of the river's entry to Lake Superior at the Blatnik Bridge. Lake Superior (PWI 16-1) including St. Louis River Bay is designated as an Outstanding Resource Value Water (ORVW). The Project is located within the SLRE where Lake Superior's seiche influences the Bay's water levels and flow patterns of the St. Louis River

#### Water Use Classifications

The reach of the St. Louis River where the Project Site is located is designated by the MPCA, under Minn. R. 7050.0470, as a Class 2Bg, 3C, 4A, 4B, 5, and 6 waterbody. As such, it is protected by the general water quality (WQ) standards defined at Minn. R. 7050.0210, the antidegradation standards (Minn. R. 7050.0250 to 7050.0335), and by the applicable WQ standards governing each classification as identified below: Class 2Bg: Aquatic life and recreation (includes cool and warm water sport fish). The applicable WQ standards are defined in Minn. R. 7050.0222. Further, the more restrictive WQ standards for the parameters listed at Minn. R. 7052.0100, subp. 5 (e.g., total mercury limit of 1.3 ng/L) and subp. 6 apply because the Project is within the Lake Superior Basin.

Class 3C: Industrial consumption (includes all waters of the state that are, or industry may use as, a source of supply for industrial process or cooling water, or any other industrial or commercial purposes, and for which quality control is or may be necessary to protect the public health, safety, or welfare). Class 3C also specifies the protection of cool and warm water sport fish, indigenous aquatic life, and wetlands. The applicable WQ standards are defined in Minn. R. 7050.0223, subps. 1, 4 and 6.

Class 4A and 4B: Agriculture and wildlife (includes all waters of the state that are, or may be used for, any agricultural purposes, including stock watering and irrigation, or by waterfowl or other wildlife and for which quality control is or may be necessary to protect terrestrial life and its habitat or the public health, safety, or welfare. Class 4A also includes a sulfate limit of 10 milligrams per liter (mg/L) for the protection of wild rice where it is present. Class 4A waters also include cold water sport fish (trout waters) and 4B waters include cool and warm water sport fish. The applicable WQ standards are defined in Minn. R. 7050.0220 and part 7050.0224.

Class 5: Aesthetic enjoyment and navigation. The applicable WQ standards are defined in Minn. R. 7050.0220 and part 7050.0225.

Class 6: Other uses and protection of border waters. The applicable WQ standards are defined in Minn. R. 7050.0226.

#### List of MPCA/Clean Water Act (CWA) Impairments in the Project Area

The St. Louis River is listed as impaired on the MPCA CWA Impaired Waters List. The Project Site includes the St. Louis River impairments listed in Table 7.

**Table 7.** MPCA 2014 Draft Impaired Waters List (Section 303(d) of the Clean Water Act)

Reach name	Reach Description	Year added to List	Stream/River Segment ID	Affected designated use	Pollutant or stressor
St Louis River (SLB)	Mouth of SLB at Blatnik Bridge to Duluth Ship Channel (DSC)	2002	04010201-530	Aquatic Consumption	DDT
St Louis River (SLB)	Mouth of SLB at Blatnik Bridge to DSC	2002	04010201-530	Aquatic Consumption	Dieldrin
St Louis River (SLB)	Mouth of SLB at Blatnik Bridge to DSC	2002	04010201-530	Aquatic Consumption	Dioxin (including 2,3,7,8-TCDD)
St Louis River (SLB)	Mouth of St Louis Bay at Blatnik Bridge to DSC	1998	04010201-530	Aquatic Consumption	Mercury in fish tissue
St Louis River (SLB)	Mouth of St Louis Bay at Blatnik Bridge to DSC	1998	04010201-530	Aquatic Consumption	Mercury in water column
St Louis River (SLB)	Mouth of St Louis Bay at Blatnik Bridge to DSC	1998	04010201-530	Aquatic Consumption	PCB in fish tissue
St Louis River (SLB)	Mouth of St Louis Bay at Blatnik Bridge to DSC	1998	04010201-530	Aquatic Consumption	PCB in water column
St Louis River (SLB)	Mouth of St Louis Bay at Blatnik Bridge to DSC	2002	04010201-530	Aquatic Consumption	Toxaphene

- 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.

Not applicable. The Project is in the waters of the St. Louis River. According to the Minnesota Department of Health County Well Index Online, there are no wells located within a mile radius of the site, and the Project site is not located in a wellhead protection area.

- b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.
  - i. Wastewater - For each of the following, describe the sources, quantities and composition of all 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 and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

- 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 such a system.
- 3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

Not applicable. The Project's operations will not generate wastewater.

- ii. Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

MNDNR will obtain an NPDES/State Disposal System (SDS) Construction Stormwater General permit. The MNDNR, together with the construction contractor, will prepare a Stormwater Pollution Prevention Plan (SWPPP) to address the Best Management Practices (BMPs) necessary to manage, control, and/or treat stormwater runoff before it enters the St. Louis River Bay. The SWPPP must identify and address all disturbed areas above the existing OHWL and describe the proposed control structures needed to manage stormwater runoff from the site, including engineering designs for these structures in the construction plans. MNDNR is coordinating with MPCA construction stormwater staff to identify appropriate sediment controls for the project, which will be incorporated into the plan set and specifications. EAW Item 11b.iv.b further describes BMPs that would be used to mitigate environmental effects to surface water from placement of dredge materials.

MNDNR would ensure that erosion is controlled, sedimentation is prevented, and that provisions of all permits are adhered to. MNDNR would conduct construction activities in a manner that would minimize soil erosion. Temporary erosion control measures would be installed before commencing construction, inspected and maintained during construction, and removed when no longer necessary.

- 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 any well abandonment. If connecting to an existing municipal water supply, identify the wells to be 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. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

Not applicable. The Project would not appropriate water resources.

- 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. 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.

Interstate Island WMA does not contain any wetland features.

- b) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) 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. 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 the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

This Project would provide 5.5 acres of stable upland habitat for the colony above a target elevation of 605.5' IGLD85, which was set as one foot higher than the record high water elevation in the long-term record for Lake Superior to provide climate resiliency. The target acreage was set by local avian experts based on their long-term experience and history at the Project Site, as well as the long-term monitoring dataset for the colony. Phase II spring work would increase habitat above the target elevation from 1.7 to 3.0 acres (in MN and WI). Fall construction would be required to achieve the goal of at least 5.5 acres of habitat above the target elevation.

Direct, permanent impacts of this work include shallow open water loss, increased critical habitat for threatened and endangered species, and increased natural shorelines. Direct impacts associated with the dredging and placement of fill material would be reduced by incorporating geotechnical analyses, hydrodynamic, and sediment transport modeling into the project design (Attachment G and EAW Item 10.b, above). Temporary impacts of dredging and placement would be reduced using BMPs as required by various state and federal permits. Considering the relative net benefit to public resources created by improving critical habitat for threatened and endangered species, MNDNR considers this Project to be self-mitigating.

#### Open Water Loss

##### *Spring Work*

Using the OHWL of 602.8' IGLD85 as a reference water elevation, placement of 90 CY of fill would convert 0.1 acres of MN shallow open water to upland. The small amount of fill placed below the OHWL would achieve shoreline slopes between 8-10% that are required for the target avian species. Island footprint below OHWL would not change.

##### *Fall Work*

Using the OHWL of 602.8' IGLD85 as a reference water elevation, placement of 14,600

CY of fill would convert 0.6 acres of MN shallow open water to upland. Island footprint below the OHWL will increase by 0.2 acres, meaning these waters remain open, but are made shallower. Fill proposed by Fall 2020 construction is necessary to increase stable upland habitat for threatened and endangered avian species.

Shallow Water Loss

USEPA has evaluated shallow (0-4 ft deep) water in the estuary using two reference elevations (Table 8). Based on this analysis, shallow water makes up between 14-30% of the lower estuary, depending on elevation.

The entire Phase II (spring and fall) construction would fill 0.9 acres in MN and 5.8 ac in WI at the OHWL of 602.8' IGLD85. Depending on elevation and reach, this impacts up to 0.1% or 0.7% of shallow open water in MN and WI, respectively. While shallow open water extents are impacted minimally, the return for threatened and endangered species is an increase in critical stable upland habitat (using 605.5' elevation) by 400% (immediately after fill placement) or by 300% (after accounting for shifting/settling).

The river bed within the Project footprint is relatively flat with slopes <2%. Current shorelines adjacent to the expansion area are approximately 4-7%. Following construction, shorelines would slope at 8 to 10% to meet the surrounding bed elevations.

Table 8. Analysis of shallow open water in the estuary

Water Elevation->	Area in Acres						% Shallow Water filled by Spring and Fall 2020 Construction*			
	601.1' IGLD85			603.1' IGLD85			601.1' IGLD85		603.1' IGLD85	
Location	Shallow water (0-4')	All open water	% Shallow Water	Shallow water (0-4')	All open water	% Shallow Water	MN	WI	MN	WI
Grassy Point and downstream	1,584	5,369	30%	852	6,082	14%	0.06%	0.4%	0.1%	0.7%
Fond du Lac Dam and downstream	4,595	8,006	57%	2,718	10,044	27%	0.02%	0.1%	0.03%	0.2%

\*Assumes 0.9 acres filled in MN and 5.8 acres in WI based on 602.8' IGLD85 water elevation  
Data provided by Jon Launspach, USEPA contractor, 7/30/19

The riparian zone at Interstate Island is currently devoid of emergent vegetation with the exception of a limited number of trees and shrubs along the shoreline that will be removed during construction to eliminate possible perches for avian predators. The shoreline is currently sandy with random scattered driftwood. Post-construction shorelines will mimic the existing condition. Emergent vegetation does not currently exist in the riparian fringe and is not desired due to the possibility of encouraging

mammalian predators to visit the island.

#### *Shallow Open Water and Fisheries Habitat Zones*

MNDNR Fisheries has identified a long-term monthly average of 601.7' IGLD85 (equivalent to 601.9' NAVD88) as important in assessing fisheries impacts relative to juvenile and adult fish habitat. As requested, changes to waters 2.0 feet or deeper relative to this elevation were evaluated within the Phase II, fall work footprint (Figure 5). All Phase II spring construction will be at 602.0' IGLD85 or higher and does not impact these depth ranges.

Using the 601.7' IGLD85 elevation, there are 0.3 acres of MN waters in the construction footprint that are between 0 and 2.0 feet deep, and 0.5 acres that are currently more than 2.0 feet deep. Of the 0.5 acres:

- 0.1 ac will become a shallow near shore zone (0-2 ft deep)
- 0.3 ac will become upland
- 0.1 acre will remain > 2' deep

Fill placement required by this Project would reduce shallow open water fisheries habitat. USEPA/USFWS/1854 Authority have directly characterized fisheries use of the shallow waters surrounding the island. Sampling with various gears over multiple years in this area captured 29 species of fish, including the following gamefish species: black crappie, bluegill, channel catfish, walleye, smallmouth bass, northern pike, white bass and muskellunge. In general, shallow open waters are not limited in the SLRE and include shallow sheltered bays, flats, industrially influenced bays, and clay influenced bays (SLRCAC, 2002). The Project Site is located within an approximately 2,400-acre area classified as Lower Estuary (Industrial Harbor) Flats (SLRCAC, 2002). The condition and quantity of the flats in the lower estuary has been impacted heavily by industrial and commercial activity. Very little submergent and emergent vegetation is present in the industrial flats; however, vegetation was likely extensive prior to commercial and industrial development (SLRCAC, 2002). The shallow waters surrounding Interstate Island may be more productive compared to others in the area if they receive increased nutrient inputs due to heavy avian use.

In general, fisheries habitats of mid-depth, open water (depths of 6-8 feet) and deep, open water (depths of 8-15 feet) are more limited in the estuary than shallow, open water because of historical habitat alternations. The exception to this is the extreme loss of shallow water habitat in the lower industrialized portion of the estuary. (Ultra-deep water present in the dredge navigational channels provides reduced habitat value for the fisheries.) Shallow and Mid-depth, open water habitat provides important nursery and foraging areas for Lake Sturgeon and game species such as Walleye, Muskellunge, and Northern Pike, while deep, open water habitat provides overwintering habitat for these species, as well as Black Crappie, Bluegill, and Bass (LimnoTech, 2012). The selected project design intentionally avoids filling of the unique off-channel deep water habitat located immediately adjacent to Interstate Island on the southwest in order to preserve this important habitat type for fisheries (see Alternative 2 below in this section).

### Increased Critical Habitat

Interstate Island WMA is the largest of two remaining Common Tern (threatened) nesting areas in the Lake Superior watershed and is the only federally-listed critical habitat for Piping Plover (endangered) in Minnesota. Both the Common Tern and Piping Plover were chosen as SLRAOC indicator species and are used to monitor successful recovery of degraded fish and wildlife populations associated with BUI 2. Neither species are on target to meet state and regional recovery goals referenced by BUI 2 objectives (MPCA and WDNR, 2018). This failure is attributed to the historic and continued loss of suitable habitat in the SLRE. In response to population declines and continued water elevation increases, restoration of Interstate Island WMA was specifically chosen by SLRAOC managers to mitigate for critical habitat loss. The 0.9 ac of MN and 5.8 ac of WI fill required by Spring and Fall 2020 construction will increase critical habitat by over 400%. Completion of the Interstate Island Project is required for removal of BUI 2.

Indicator species associated with BUI 2 also include multiple fish: Muskellunge, Walleye, Lake Sturgeon, and Ruffe (invasive). With the exception of Lake Sturgeon, fish species removal objectives have been met and many SLRAOC projects will be completed to directly benefit fisheries by cleaning up contaminated sediments and restoring 1,700 acres of aquatic habitat (see Tables 3 and 4).

Regarding Lake Sturgeon, a radio tagging study of juvenile Lake Sturgeon in the SLRE showed that most sturgeon stayed above the actively maintained industrial harbor, from Grassy Point bridge upstream to the Oliver Bridge and primarily in the shallow waters in and around Spirit Lake. Only a few tagged juveniles moved out of the estuary, presumably to Lake Superior. Research into habitat use and movement by adults is underway, data through September 2018 showing that 57% of tagged adults migrated out of the SLRE for some period of time during the year (MNDNR, 2019). Suitable spawning habitat for sturgeon in the SLRE is located below the Fond du Lac Dam and at the newly restored Chambers Grove location.

### Increased Natural Shoreline

Fragmentation, island loss, and shoreline hardening in the SLRE have created barriers to wildlife that move between aquatic and upland areas. A 2016 assessment of shorelines in the SLRE found that only 43% of the shorelines between Grassy Point and Rice's Point provided natural riparian connectivity. Increasing the percentage of natural shorelines in the SLRE is a strategy for addressing legacy habitat alterations. Expanding the habitat for colonial nesting birds at Interstate Island increases riparian connectivity in the SLRE by creating an additional 1,320 feet (at elevation 602.8' IGLD85) of natural shoreline.

The NHIS review performed for this Project indicated that the Rhode Island Hairy-necked tiger beetle, a state-listed endangered species, was documented in 1974 in the vicinity of Interstate Island WMA. This species is found on sandy beaches along the Lake Superior shoreline in the Duluth area; it has since been surveyed for in the area of known record and was failed to be found. Increasing sandy beach habitat at Interstate Island has a secondary benefit for the tiger beetle and may help with the recovery of this species.

The shallow open waters eliminated by restoring Interstate Island WMA are of lower relative value compared to the new habitats being created. The benefits to rare species created by the proposed restoration outweigh the aquatic resource loss and create an ecological lift, improving the public resource.

#### Alternatives Analysis

Several alternatives to the proposed Project were evaluated by MNDNR:

Alternative 1: Rip-rapping the entire shoreline of the existing island footprint and raising the island elevation inside the riprap (Figure 8a) – this alternative would provide for 5.5 acres of stable upland habitat and require no filling of shallow open water. However, shorebirds require open sand/gravel beaches with a maximum shoreline slope of 10%. This alternative was rejected because it does not meet habitat requirements for the target species of Common Tern and Piping Plover.

Alternative 2: Expanding the island footprint to the southwest (Figure 8b) – in this alternative, the island would be expanded into the deep hole located southwest of the island in Wisconsin to provide the 5.5 acres of stable upland habitat. This alternative was rejected because deep water habitat outside of the navigation channel is limited in the SLRE and is an important aquatic habitat type for fisheries. This alternative was also rejected based on objection from both MNDNR and Wisconsin DNR fisheries experts.

Alternative 3: Expanding the island footprint to the northwest (Figure 8c) – expansion of the island to the northwest in the shallow open water in Minnesota was an alternative considered. However, MNDNR wildlife managers and local avian experts have determined that a minimum of ¼-mile isolation distance from land is necessary to prevent mammalian predators from reaching the Project Site. This alternative was rejected because it would result in the island being less than ¼-mile from the shoal features located to the northwest.

Alternative 4: Restricting access to Minnesota Point – in this alternative, MNDNR would place restrictions on public access to Minnesota Point to provide conditions conducive to the Common Tern colony relocating to the suitable beach habitat there. Restriction of public access would be necessary to limit disturbance by humans and dogs. This is an approach used by states on the East Coast of the United States who are managing tern populations. This alternative was rejected because 1) Common Terns have high site fidelity and return to the same nesting site each year making securing the existing nesting area most important prior to developing alternate nesting locations, and 2) Minnesota Point is a popular and well-used destination for local and tourist populations.

Alternative 5: No action – in this alternative, no habitat restoration would occur at Interstate Island. This alternative was rejected because no action would result in further flooding and erosion of the Common Tern nesting area at Interstate Island, particularly given the current water levels and predicted water levels. Maximum monthly mean water elevations in Lake Superior are forecasted to be above 604' IGLD85 elevation in three of the next five years (USACE, 2019). Short-term and long-term viability of the

Common Tern colony and the federally designated Piping Plover habitat would be in serious jeopardy if no action were taken.

#### Dredging and Filling

Additional direct and indirect environmental effects of Fall 2020 of the Project to surface waters, together with the BMPs employed to minimize effects, are discussed below. The first section relates to the water quality impacts caused from dredging the St. Louis River navigational channel. The second section relates to the water quality effects caused from placing the dredged material in the Project site, followed by a section on the BMPs that would be used to minimize those.

**Impacts from Removing Dredged Material from the St. Louis River Navigational Channel.** In consultation with USACE, MNDNR has identified navigational dredged materials suitable for in-water placement to provide stable upland island habitat. MNDNR would indicate these materials as a potential source in the Project's construction specifications. Although the environmental effects caused from the USACE's dredging of the navigation channel may have short-term increases in turbidity in the water column due to sediment disturbance at the location where the material is dredged and downstream from where the disturbed sediment naturally flows, this is part of the USACE's normal dredging operations. The USACE is exempt from Section 404 regulations for the purpose of de Minimis ('of minimal importance') soil movement and normal dredging operations under 57 FR 26894, 1992.

**Impacts from Placing Dredged Material into the Project Site.** MNDNR anticipates using USACE navigational dredged material suitable for in-water placement to provide stable upland island habitat. The placement of dredged material in the Project Site would result in short-term turbidity in the water column. The hydraulic placement of dredged material would result in increased concentrations of suspended solids during and immediately after placement operations, and although the water column oxygen concentration is temporarily reduced, the impact is limited to a short period of time at the construction site. Dredged materials with a finer texture may create higher concentrations of suspended sediments that require longer to settle. These impacts would occur both within the construction area, where the MNDNR would place the dredged material, and outside of the construction zone, depending on water flow velocity and direction.

**BMPs to Mitigate Impacts on Dredge Placement Areas.** Turbidity would be monitored on-site and adjustments would be made if suspended sediment levels are above permit requirements. In the short term, the MNDNR would use appropriate BMPs to minimize the amount of suspended solids in the water during construction. Silt curtains would be implemented as required by permitting authorities. Previous turbidity monitoring at the 21st Avenue West site during the pilot study of dredge material placement and a sediment transport model (Hayter, et al. 2015), which includes Interstate Island in the modeled field, indicate the material will not migrate from the placement areas in the long term. The MNDNR does not expect significant risks to aquatic life outside of the placement site. Data and analysis from 2013, 2014, and 2015 by the USACE and U.S. Geological Survey (USGS) during the Pilot Project work at 21st Avenue West showed

turbidity rapidly decreased with distance from the placement area, and approaches background levels at approximately 1,000 feet (USGS, 2015). In addition, water quality returns to normal within the construction site within two days after placement of dredged material. Dredging and fill operations would be monitored to determine whether similar results occur in construction zones at Interstate Island.

To help minimize temporary impacts to the fishery, state and federal agency permits require that restoration work would not occur during spawning periods (from April 1st to July 1st). For these reasons, the Project would not create long-term contaminant releases or adverse effects on the fishery. In addition, the Project would help reduce exposure of contaminants in the sediment to the food web. The USACE and USGS monitoring at 21st Avenue West demonstrated that the use of appropriate in-water BMPs helped reduce the total amount of turbidity within the 21st Avenue West project area. Similar BMPs would be applied to Interstate Island Project Area.

The CWA Section 401 Water Quality Certification, the Section 404 Clean Water Act permit, the Section 10 Rivers and Harbors Act Permit, and the Public Waters Work Permit require the applicant to install BMPs designed to prevent adverse effects on water quality due to dredging operations by minimizing the amount of sediment resulting from dredging. Any dredged material that does not show significant toxicity to test organisms under the methodologies and analysis of Section 404(b)(1) and Minnesota Rules 7050 would be documented for beneficial use as in-water placement.

The MNDNR would use BMPs where practicable or required, to mitigate and reduce the Project's potential water quality impacts, as described below. The MPCA tested several of these for efficiency at reducing turbidity during the Pilot Project at 21st Avenue West, as required by the MPCA's 401 Water Quality Certification (401 Certification). The MNDNR, MPCA, and the USACE may deem it necessary to explore other methods to minimize short-term turbidity impacts or require the use of additional placement methods and BMPs not listed below.

1. The MNDNR will not place any dredge material in the Project Site before July 1 of each construction year unless the MNDNR grants permission under the authority of the Minnesota Public Waters Permit.
2. Visual Inspection: The MNDNR will visually monitor and observe turbidity levels, weather, and wave conditions when placing the dredged material to ensure that all BMPs are effective and used in a manner that minimizes turbidity. If the MNDNR determines that turbidity at the water surface seems elevated beyond anticipated levels, or if the MNDNR receives formal complaints, the MNDNR will monitor turbidity levels in accordance with MPCA's 401 Certification. If monitoring demonstrates that turbidity caused by the dredged materials placement activities is a concern (e.g., elevated total suspended solids beyond anticipated levels outside of the Project Site, but not upstream of it) the USACE will work with the MNDNR under the authority of the 401 Certification to solve the issue.

3. Turbidity/Silt Curtain: The MNDNR will install a turbidity/silt curtain where

appropriate before the placement of any dredge material.

4. Minimize Pump Operation: The MNDNR will only operate the pumps, which transport dredged material from the offload site to the placement area, at full capacity when the material is placed. The MNDNR will not leave the pumps running at full capacity while waiting for dredge materials to arrive.

5. Limited Vessel Traffic over Placed Material: The MNDNR will minimize vessel traffic over the recently placed dredge material at the Project Site.

6. Apron/Spill Controls: The MNDNR will use an apron/guard to prevent dredged material from spilling into the water while transferred from the barge to the pump.

7. Mechanical Placement of Dredged Materials: The MNDNR will use mechanical placement of dredged materials when possible. Mechanical placement causes far less turbidity relative to hydraulic placement.

8. Hydraulic Placement of Dredged Materials: Where it is too difficult to place materials mechanically, the MNDNR will use piping to hydraulically control the discharge rate at the end of the pipeline by implementing the most appropriate BMPs on the equipment (e.g., pipe diameter, discharge location, diffuser, and baffle plates).

The in-water BMPs must be properly installed prior to conducting the authorized activities and must be maintained throughout the duration of the project's in-water disturbances. While conducting the work, the BMPs must also be visually monitored to ensure management of turbidity and/or sedimentation. If turbidity and/or sedimentation caused by the project, is observed outside and downstream of the defined work area, then the authorized activities must cease immediately until alternative BMPs, which will adequately control turbidity and sedimentation, have been implemented. In-water BMPs must be included in the construction plan. Further information regarding the types of BMPs that may be suitable for this purpose can be found in "Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-0001" manual provided on the MNDNR web site.

#### **Surface Water Use**

The Project Site is located within the industrial harbor of the SLRE. Shipping channels exist to the north, south, east, and west of the island (Figure 2). The area is accessible to small watercraft; however, small boat use is generally limited in this area due to shipping traffic and limited recreational values. Access to Interstate Island WMA is restricted from March 1 to August 30.

Project related activities would occur outside of the navigation channel. Project activities would not change the number and type of watercraft usage in the vicinity of the Project Site.

## **12. Contamination/Hazardous Materials/Wastes:**

- a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on 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.

Existing contamination or potential environmental hazards are not present on Interstate Island WMA. Several areas within the St. Louis Bay have identified sediment contamination. These areas have been assessed and prioritized for cleanup through the SLRAOC program (see Tables 3 and 4).

Interstate Island WMA is adjacent to a federal navigation channel frequented by large boats carrying ore, minerals, and grain. Potential hazards associated with accidental discharges of fuel or cargo have low potential; Coast Guard spill response plans for the Twin Ports harbor are in place.

For the Fall 2020 portion of the Project, MNDNR intends to work with USACE to identify dredge materials to use for construction. USACE completes sediment sampling for physical characteristics and contaminants prior to dredging as part of its routing navigational dredging operations. The USACE identifies Federal navigational channel areas for potential dredging and separates them into Dredged Materials Management Units (DMMU) for the purpose of estimating environmental impacts of the disposal of dredged materials. Five discrete and one composite sample are collected in each DMMU using direct push to project depth or until refusal and analyzed for the following suite of chemical, physical, and biological parameters:

- Total organic carbon
- Polycyclic aromatic hydrocarbons
- Metals
- Dioxin
- Biological toxicity
- Particle size
- Percent solids and moisture

Results are compared against reference samples and Sediment Quality Targets to identify the level of contamination present and the suitability for beneficial use of the dredged materials elsewhere. MNDNR, MPCA, and USACE would evaluate all dredged material proposed for use at the Project site to determine if it is suitable for in-water placement for habitat restoration. Existing Section 404 federal guidelines for placing dredged material in-water for the purpose of improving or creating aquatic habitat ensures adequate protection of an aquatic resource (USEPA and USACE, 1998a, 1998b), along with state guidance, SLRAOC Quality Assurance Program Plan (QAPP) for Minnesota Based Projects, Appendix 1, Managing In-Water Placement of Dredge Material for Habitat Restoration Sites (MPCA and MDNR, 2015b). Fundamental to the federal guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact on the aquatic ecosystem. If a suitable source of dredge materials is not identified, imported fill materials will be used for construction.

MNDNR does not expect adverse effects on sediment quality as a result of dredged material placement in support of habitat restoration at the Project. Any dredged material that does not

show exceedance of the Sediment Quality Target contaminant standards detected under the methodologies and analysis documented in the QAPP will be documented as material that can be used for beneficial use as in-water placement.

Identified hazards are associated with harbor activities unrelated to and beyond the control of the proposed Project and do not require special measures or mitigation at Interstate Island WMA, nor do they compromise desired environmental outcomes.

- 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 solid waste including source reduction and recycling.

Minimal amounts of solid wastes are expected to be generated during construction. MNDNR would not store solid wastes during construction. On or before completion of all work, the Contractor shall remove from the premises and recycle or legally dispose of all rubbish or debris caused by him, leaving the site in a clean and presentable condition.

A small amount of solid waste is generated during Project operations and maintenance. To maintain desired habitat, resource managers actively manage plant communities. To protect critical nesting habitat, structures such as fencing and grids are installed. As resource managers remove undesirable plant matter and repair or replace structures, any generated wastes are disposed of promptly and legally.

- 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 above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

Construction equipment requires fuel (diesel and/or gasoline) and oils (lubricating and hydraulic). MNDNR would require the Contractor to comply with U.S. Coast Guard and Wisconsin and Minnesota Department of Transportation regulations as applicable to marine work, construction activities, and truck transport for handling of fuels and oils. The Contractor will take special measures to prevent chemicals, fuels, oils, greases, and other pollutants from entering the waterway, and to have a Contaminant Prevention Plan and a Spill Control Plan in the event of an unforeseen spill of a substance regulated by the Emergency Response and Community Right-to-Know Act or regulated under state or local laws or regulations. All spills must be reported immediately to the Project engineer and any reportable quantities must also be reported to the legally required federal, state, and local reporting channels (including the National Response Center 1-800-424-8802 and the Minnesota Duty Officer). Spill kits to contain and/or neutralize accidental minor discharges are required on-site. These safeguards minimize the chance of a significant impact.

- 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, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

Project operations will not generate hazardous wastes.

### **13. 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.

#### Fish and Wildlife

The SLRE is recognized by the National Audubon Society as an Important Bird Area for waterfowl, raptors, shorebirds, gulls, and passerines, and is noted for being one of the best and most popular sites for bird watching in Minnesota. The area serves as a corridor for migrating songbirds, shorebirds, and raptors and provides critical food and shelter for these migrants.

Birds seen foraging in the marshes of the SLRE includes Bald Eagle, Osprey, Merlin, Common Tern, Northern Harrier, and Belted Kingfisher. Resident birds include Double-crested Cormorant, Virginia Rail, Sora, Marsh Wren, Common Yellow-throat, Swamp Sparrow, Song Sparrow, Yellow Warbler, and a variety of waterfowl. Over the years, more than 230 bird species have been documented in the SLRE.

When Interstate Island WMA was covered with woody vegetation, it was used primarily by passerine birds, especially during migration. Once cleared of vegetation, the island became a major nesting colony for Common Terns. Nesting population surveys conducted by WDNR between 1989 and 2014 averaged 193 nesting pairs; since Lake Superior levels began rising in 2015, the average nesting pair count between 2015 and 2018 has dropped to 131 (Figure 9).

In addition to Common Terns, ducks, Canada Geese, and Ring-billed Gulls also use Interstate Island WMA for nesting, while a variety of shore and water birds use the island for feeding and loafing during the summer. Ring-billed Gulls are nesting habitat competitors of Common Terns, as they will use the same habitat for nesting. In 2018, over 11,800 nesting pairs of Ring-billed Gulls occupied the island. MNDNR and WDNR resource managers minimize Ring-billed Gull nesting competition by using a string grid deterrent over the tern nesting area and by the federally authorized destruction of gull nests in the tern nesting area.

Mammals are not frequently observed on the island, though evidence of mink, fox, and weasel predation has been recorded during the annual Common Tern monitoring that has taken place since 1977.

Fisheries use in the direct vicinity of Interstate Island is not well characterized due to avoidance during tern nesting season. However, there is a gillnet, trapnet, and seine site within reasonable proximity to the island which can inform species which are likely utilizing these habitats. The trapnet set in 21st Ave bay is in proximity to the island (0.8 mile) with similar substrates have captured the following species (2006-2012): Black Bullhead, Bluegill, Channel Catfish, Golden Shiner, Northern Pike, River Ruffe, Shorthead Redhorse, Smallmouth Bass, and White Sucker. The MNDNR gillnet set within 1/2 mile of the island (front edge of bay in front of WLSSD) identified the following potential species utilizing these open water habitats (2006-2018): Alewife, Black Bullhead, Black Crappie, Bluegill, Brook Trout, Burbot, Channel Catfish, Common Carp, Common Shiner, Freshwater Drum, Golden Shiner, Lake Sturgeon (species of special concern), Longnose Sucker, Muskellunge, Northern Pike, Pumpkinseed, Rainbow Smelt, River Ruffe, Rock Bass, Shorthead Redhorse, Silver Redhorse,

Smallmouth Bass, Tadpole Madtom, Tulibee, Walleye, White Bass, White Perch, White Sucker, Yellow Bullhead, Yellow Perch. There is also a WI DNR historic seine site within 1 mile of Interstate Island on Connors Point. Juvenile fish catches of the following species were found at this site (in order of highest abundance to lowest): Emerald Shiner, Spottail Shiner, Yellow Perch, Eurasian Ruffe, Trout Perch, Round Goby, Alewife, Log Perch, White Sucker, Walleye, 3-spine Stickleback, Rainbow Smelt, Johnny Darter, Tubenose Goby, White Perch, Northern Pike, Black Crappie, Longnose Sucker, Rock Bass, Bluegill, Shorthead Redhorse, Silver Redhorse, Smallmouth Bass, Brook Silverside Hybrid Sunfish, Black Bullhead, Golden Shiner, 9 Spine Stickleback, Lake Chub, Mimic Shiner, Muskellunge, Common Shiner, Fathead Minnow, White Bass, Largemouth Bass, Lake Herring, Chinook Salmon.

### Vegetation

The shorelands of the North Shore Highlands landscape near Lake Superior were historically Lake Superior Sand/Gravel/Cobble Shore (LKu32) or Northern Floodplain Forest (FFn67). Interstate Island WMA is a created landform, so there are no original Native Plant Communities (NPC) associated with the island. The NPC most closely associated with sandy islands and beaches in this vicinity is LKu32. Sparsely vegetated plant communities on dry, well-drained sand, gravel, or cobble shores along Lake Superior characterize this class.

Interstate Island was created from dredge spoils when the navigational channel was dredged in the 1930s. The island was heavily vegetated with trees and shrubs by 1981. The vegetation was composed of sapling and pole sized balsam poplar, aspen, and scattered paper birch with an understory of forbs and patches of hazel and dogwood shrubs. There was a band of speckled alder and willow along the northern edge of the island. Two small patches of lowland sedge were located on the western edge of the island. The island's woody vegetation was cleared in the 1980s.

Interstate Island WMA is currently characterized as sparsely vegetated or non-vegetated, on unconsolidated material or sand flats. The vegetation that exists is primarily non-native, weedy herbaceous species such as ragweed and patches of willow brush. A brushy fringe of speckled alder and willow remain along the northern edge of the island. An April 2019 tree survey conducted by Barr Engineering recorded 160 stems, the majority having a diameter at breast height between two and six inches. Species counted include balsam poplar, willow, box elder, American elm, and paper birch. Although the count may seem high, it should be noted that these trees are very short given their diameter due to the poor growing conditions on the island. Trees averaged 15-20 feet in height and many were either dead or in poor condition. The south shoreline has the highest density of trees while a few scattered trees exist on the shoreline of the rest of the island. Overall, the island is primarily sandy/rocky and void of vegetation with the exception of a few small scattered shrubs. Wind, wave, and ice erosion prevent emergent and submergent aquatic vegetation from establishing in the shallows around the island.

### Habitat

The WMA is currently managed as nesting habitat for waterfowl and Common Terns per the *WMA Guidance Document* (Minchak and Staffon, 2007). The island's woody vegetation was cleared in 1984 and 1985 and the resulting woody debris was burned in 1989. The site was dozed and shaped to expose the underlying sand substrate, and the north side and western tip of the island were stabilized with riprap in 1989.

A fringe of woody vegetation was initially left on the eastern edge of the island as a property maintenance buffer for Burlington Northern Railroad until 1986. Burlington Northern has since

removed the railroad track and trestle, with the buffer zone cleared of remaining woody vegetation. Woody shrubs were retained on the western, up-river side of the island to reduce erosion.

State resource managers control vegetation to provide enough thermal cover for young terns while still allowing adequate open nesting space. WDNR uses periodic hand pulling and spot spraying of Rodeo herbicide to control weedy vegetation.

State resource managers allow re-vegetation of the island by weedy forbs through natural succession until the vegetation attains an unacceptable height for nesting terns of over 1 meter high or density of over 25% of the island. At that time, 50-100% of the island is cleared or treated again. The amount of the island to be cleared depends on whether it is actually being used as a nest site. Only those areas not used the previous year would be cleared. In this way, at least a portion of the nesting area will remain unchanged from year to year, but new suitable habitat will be provided on an ongoing basis.

All clearing and other site preparation activities will take place outside the nesting season of March 1 to August 30. Since birds are more likely to nest in areas that have had at least a few months to stabilize following clearing activities, the optimum time for clearing and related work is the fall period rather than early spring.

Resource managers have placed wire fencing around the primary tern nesting area. A network of string-topped posts covers a portion of the nesting area. The string is spaced to allow access by flying terns but will discourage predation by gulls and disturbance from nesting Canada Geese. This deterrent fencing is maintained annually.

WDNR coordinates an annual survey of the tern colony to document the number of nesting pairs and nesting success and to leg band the newly hatched young. WDNR also conducts an annual survey of the number of nesting gulls and gull nests that are removed from the tern nesting area.

The WMA Guidance Document acknowledges that it may be beneficial to fill the low, wet areas on the island, as they tend to re-vegetate too quickly to provide good tern nesting habitat. The best source of fill would be dredge spoils if and when they can be safely obtained.

- b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-\_\_\_\_) and/or correspondence number (ERDB 20130338-0003) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

A Natural Heritage Review was completed by the MNDNR to determine if any rare species or other significant natural features are known to occur within a one mile radius of the proposed Project (Attachment D). The Natural Heritage Review identified the following rare features that may be adversely affected by the Project:

- The St. Louis River Estuary has been identified as a Lake of Outstanding Biological Significance. Lakes of Biological Significance are ranked as Outstanding, High, or Moderate based on unique plant and animal presence, with several state-listed species documented. To prevent adverse impacts to this feature, MNDNR will implement effective erosion prevention and sediment control practices throughout the duration of the Project.
- Interstate Island WMA is a nesting area used by the Common Tern, a state threatened

species, and other colonial waterbirds. Piping Plover, a federally and state-listed endangered species, has also been documented in the vicinity (but not within Interstate Island). Undisturbed isolation is important during the breeding season. State and federal laws protect the birds, their nests, and their eggs by prohibiting disturbance. MNDNR will prevent adverse impacts to these species by conducting all restoration activity outside of the nesting season. The Interstate Island WMA is protected as a Bird Sanctuary and closed to public access March 1st – August 30th annually. The state of Wisconsin recognizes the island as a wildlife refuge, with access similarly restricted. MNDNR will also work with our Regional Nongame Specialist and U.S. Fish and Wildlife Service’s field office on this Project.

- The Rhode Island Hairy-necked tiger beetle, a state-listed endangered species, was documented in 1974 in the vicinity of Interstate Island WMA. This species is found on sandy beaches along the Lake Superior shoreline in the Duluth area; it has since been surveyed for in the area of known record and was failed to be found. MNDNR proposes to improve habitat for this species by restoring Interstate Island’s sandy beaches.

MNDNR is not aware of any additional ecologically significant features in the Project area outside of those recorded.

- c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

The Project will result in increased and improved habitat for the following threatened or endangered species: Common Tern, Piping Plover, and the Rhode Island Hairy-necked beetle. Ducks, Canada Geese, and Ring-billed Gulls also use Interstate Island WMA for nesting, while a variety of shore and water birds use the island for feeding and loafing during the summer. Improving, increasing, and stabilizing sandy beach habitat at Interstate Island WMA will benefit these species as well.

In order to increase, improve, and stabilize this critical habitat, MNDNR must fill 0.9 acres in MN and 5.8 ac in WI (at the OHWL of 602.8’ IGLD85) of shallow open water. As described in section 11b.iv.b, some of this area will remain available for fish use at long-term average water levels. Shallow waters suitable for foraging and spawning by a number of fish species are much more abundant throughout the estuary than island and/or sandy beach habitats suitable for the Project’s target bird species. As described in Section 11.b.iv.b, less than one percent decreases in estuary shallow waters are offset by an increase in critical habitat by as much as 400%. Therefore, the relative value of restoring a critical habitat supporting threatened and endangered species is larger than the value of shallow open waters, which are not threatened in the estuary.

Common Tern and Piping Plover, as well as other shorebird species require sand and gravel substrate with limited vegetative cover. Woody vegetation present at the Project Site must be removed to eliminate possible perches for avian predators. Native dune plant communities (Table 2) will be established on limited locations within the Project Site to provide some protection from wind erosion. Wind erosion will be further reduced through the placement of rock vanes constructed of cobble on interior open areas of the site and the use of fencing in the tern nesting area.

The Minnesota DNR requires preventing or limiting the introduction, establishment and spread of

invasive species during activities on public waters and MNDNR-administered lands. Impacts from accidental introduction or harboring of invasive species, related to the removal, transport, and placement of imported or dredge materials are expected to be minimal.

The Contractor shall prevent invasive species from entering into or spreading within the Project site by cleaning equipment and clothing prior to arriving at the Project site. The Project Manager shall inspect all equipment and clothing at the staging area determined at the pre-construction meeting.

If the equipment or clothing arrives at the Project site with soil, aggregate material, mulch, vegetation (including seeds) or animals, it shall be cleaned by Contractor furnished tool or equipment (brush/broom, compressed air or pressure washer) at the staging area. The Contractor shall dispose of material cleaned from equipment and clothing at a location determined by the Owner. If the material cannot be disposed of onsite, secure material prior to transport (sealed container, covered truck, or wrap with tarp) and legally dispose of offsite.

The Contractor shall clean equipment and clothing as noted above, prior to entering and leaving the water body. Prior to leaving the water body, the Contractor will drain water from all equipment, tanks or water retaining components of boats (motors, live well and bilge). Immediately after leaving the water body, the Contractor will drain water from transom wells onto dry land.

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

Primary construction disturbances required to increase the island's elevation will occur over a two-year period. Periodic, short-term construction disturbances will be required in future years as the long-term monitoring and maintenance plan is implemented. These periodic disturbances are necessary to ensure continued stability and protection of restored habitat. MNDNR does not anticipate long-term adverse effects from these necessary construction disturbances. During all construction activity, MNDNR will employ the following measures to minimize temporary adverse effects to fish, wildlife, plant communities, and sensitive ecological resources:

- Per the WMA Guidance Document, all restoration activities will take place outside the nesting season of March 1 to August 30. Since birds are more likely to nest in areas that have had at least a few months to stabilize following clearing activities, the optimum time for clearing and related work is the fall.
- Construction will not occur during the fish spawning months of early spring;
- Turbidity-generating activities will be timed (in consultation with the state fishery managers) to avoid potential impacts during important fish migrations and spawning periods.
- Erosion and sediment control best management practices (BMPs) will be employed to minimize turbidity in the water.
- Invasive species mitigation techniques described above will be implemented

#### **14. Historic properties:**

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close 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.

MNDNR has completed a Historic Property Assessment for Interstate Island WMA, evaluating its potential for inclusion in the National Register of Historic Properties (NRHP) (Attachment E). The assessment concludes that, “[a]s an artificial landform, Interstate Island possesses no potential for intact archaeological deposits (although dredged-up artifacts of unknown provenience could be present). Historic photographs suggest that no building or other constructions have existed on the island. The trestle pilings that will be removed or buried could potentially date to the late 19th century (assuming they are remnants of the original trestle construction). These trestle remains retain little historic integrity, however, as this short stretch of pilings cannot adequately convey the expanse of the original span, nor the engineering involved in accommodating ship traffic. It therefore appears that properties eligible for inclusion on the NRHP are unlikely to be located within the area to be potentially affected by the undertaking.”

The USFWS Regional Historic Property Officer also evaluated the project, concluding that no field survey is needed, with a final finding of “no potential effect” (Attachment E). SHPO concurrence was received on July 9, 2019 (Attachment E).

#### **15. 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.

The Project site is situated in the St. Louis Bay near an interstate highway and navigational channel. Scenery at the Project areas includes views of the St. Louis Bay, including wetland ecosystems and related wildlife. Scenic views of the St. Louis Bay occur in many areas of the harbor including the Project site, from the highways, and from Skyline Drive along the bluff that overlooks the harbor. Temporary impacts will occur during active construction, projected to occur over two fall seasons and last two to six weeks. Views will include manned barge spreads, excavators, and tug boats traveling between Interstate Island and the source of fill material (dock or navigational channel dredge area). Views of construction activity would not present undue aesthetic disruption in comparison with existing harbor industrial and shipping activities.

#### **16. 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, and any greenhouse gases. 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 effects from stationary source emissions.

MNDNR will not install any permanent stationary sources of air emissions as part of this Project.

- 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 minimize or mitigate vehicle-related emissions.

Construction-related emissions will be exempt as *de minimus* and they will meet the conformity requirements under Section 176 (c) of the Clean Air Act, and 40 CFR 93.153. Emissions will be minor and temporary in nature, arising from the use of powered equipment during construction. Equipment used will include excavators, loaders, trucks, boats, tugs, and pumps. Fuel exhaust emissions contain pollutants including carbon monoxide, nitrogen oxides, reactive organic gases, sulfur dioxide, and suspended particulate matter, all of which carry some associated health risks. Dredged material transport impacts will last approximately two months during each open-water dredge season. Emission levels also are less as machines are modernized, and as Environmental Protection Agency becomes more stringent on new engines.

- c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). 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 or mitigate the effects of dust and odors.

The proposed Project may create some temporary dust during open-water season construction activities. Fugitive dust could arise from light vehicle traffic at the Project Site in association with maintenance operations of equipment and stockpile locations. Activities with the potential to create dust include material removal, stockpiling, placement, grading, and compacting. Because the material being used consists of sand, gravel, and rip rap, dust generation is expected to be minimal. No sensitive nearby receptors have been identified. No short or long-term odor impacts are anticipated.

The contractor will be required to follow best management practices to reduce dust during construction such as:

- Covering loads during transport during the open-water season.
- Watering exposed soils if fugitive dust becomes an issue.
- Using BMPs on exposed areas and stockpiles.
- Requiring any materials transported onto the Project Site to be clean and free of dirt and debris.

## 17. 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 including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

The Proposer expects periodic and temporary noise from operation of construction equipment near areas where fill and dredged material is placed. Equipment noise would not have adverse effects on recreation in the harbor as the placement area is within an industrial area and is subject to noise from two interstate highways that run near the Project site.

Minn. R. pt. 7030.0040 establishes two noise levels,  $L_{10}$  and  $L_{50}$ , based on the percent of time noise levels exceed the standard over a one-hour time period:  $L_{10}$  is defined as “noise levels exceeding the standard for 10% of the time for one hour (6 minutes/hour)” and  $L_{50}$  is

defined as “noise levels exceeding the standard for 50% of the time for one hour (30 minutes/hour).” The rules also establish daytime and nighttime noise level standards based on Noise Activity Classification (NAC) levels. Minn. R. pt. 7030.0050 defines NAC levels based on land uses as 1, 2, 3, or 4. NAC Level 2 is for commercial and recreational land use types, typical to that of the Project site.

No sensitive receptors are identified near the island. People working in or around the nearest business are over 2,000 feet away from the Project site. The rail yards, WLSSD plant and other uses are over 1,000 feet from the equipment used to place the fill and dredge material. Noise standards in decibels established for NAC Level 2 areas for daytime or nighttime are 70 dB (L<sub>10</sub>) and 65 dB (L<sub>50</sub>). According to the Federal Highway Administration, the average noise level at 50 feet from typical diesel-powered mobile construction equipment is 87 dB (Table 9). Sound decreases from a point source at a rate of 6 dB for every doubling of distance from the source (MPCA Guide to Noise Control in Minnesota). Table 9 provides an estimated noise level as a function of distance (information from the FHWA handbook and the MPCA guide).

**Table 9.** Estimated noise level as a function of distance from source

Distance from Source (Feet)	Noise Level (dB)
50	87
100	81
600	51
900	33

The Project construction would temporarily generate noise above current NAC 2 within 100 feet, but all receivers are much farther away, and well below the 65 dB level. Therefore, no BMPs or project specifications have been developed to limit noise. The Proposer would use construction equipment classified as “mobile equipment” including: dozers, cranes, graders, excavators etc., which operate in cycles of full power followed by reduced power. Typical sounds would include engine noise, sounds of metal on rock, and safety back-up alarms. Once complete the Project will not generate noise.

## 18. 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 alternative transportation modes.

The WMA is accessible only by boat. Public use of the island is restricted to protect breeding waterbirds. All motorized vehicle use and horseback riding are prohibited on the WMA.

Contractors would access the site via boats and barges. While a specific contractor has not been identified for this Project, most area contractors either own or lease nearby docks for the storage and mobilization of equipment and employee parking. A crew size of ten or less would be required to implement the Project, resulting in minimal impact to daily traffic in the project’s vicinity.

Sand used in the Common Tern nesting area and any fill beyond what is obtained through dredging must be sourced from an off-site location, to be determined by the contractor. Sand materials may be purchased from dock-based operation, in which case transportation would be via barge. Alternately, sand sourced from a mine would be hauled to the contractor's dock using dump trucks via state highway. Local road use may require haul route approval by local government units.

- b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. 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.

Due to the scale and duration of this project, traffic congestion increases and impacts to the regional transportation system are expected to be negligible.

- c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

No effects on the transportation system are expected as a result of the proposed Project and mitigation is not proposed.

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

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

Cumulative impacts may occur when there is a relationship between the proposed Project and other actions expected to occur in a similar location or during a similar time period. The Interstate Island Avian Habitat Restoration Project Area is located within the St. Louis River Area of Concern (SLRAOC) on the Minnesota - Wisconsin border. Construction will occur during the spring and fall seasons of 2020.

The potential environmental effects related to this project could combine with environmental effects from other past, present, or reasonably foreseeable future projects for which a basis of expectation has been laid. The environmental effects of actions occurring at Interstate Island are considered with other actions identified below.

This cumulative impact analysis considers activities occurring within the Project area as well as a broader geographic scope where potential plans may be sited or projects undertaken that would have impacts considered aggregately with Project impacts. The spatial boundaries were determined based upon the likely scope of impacts to specific resources. The geographic scale and timeframe of environmental effects are in Table 10.

**Table 10.** Extent of Potential Impact of the Interstate Island WMA Restoration Project

Environmental Effect	Geographic Scale	Timeframe
Water resources	Watershed	Project implementation

Environmental Effect	Geographic Scale	Timeframe
	boundary	(up to 4 weeks)
Fisheries	St. Louis Bay	Project implementation (up to 4 weeks)
Terrestrial wildlife	Project boundary	Permanent
Avian wildlife	Project boundary	Permanent
Soils and sediments	Project boundary	Project implementation (up to 4 weeks)
Vegetation	Project boundary	Permanent
Cultural resources	Area of Potential Effect	Permanent
Aesthetics/visual resources	Project boundary	Project implementation (up to 4 weeks)
Land use	Project boundary	Permanent
Air quality and noise	Project boundary	Project implementation (up to 4 weeks)

- 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 geographic scales and timeframes identified above.

Future stages of the Interstate Island Avian Habitat Restoration Project include Phase III, as described in section 6b. MNDNR plans to complete Phase II construction in Fall/Winter 2020, with Phase III beginning as soon as final construction plans are developed. An EAW will be submitted in 2020 for Phase III.

Besides proposed construction at Interstate Island WMA, several restoration and remediation projects are being designed and implemented in the vicinity of the proposed Project. The anticipated timelines and environmental effects associated with these projects are detailed in Table 11, below.

**Table 11.** Anticipated environmental effects and timelines associated with reasonable foreseeable projects.

Project	Anticipated Environmental Effects	Anticipated Timeline
21 <sup>st</sup> Avenue West (MN)	Increased turbidity during biomedium placement; displacement of fish and wildlife	Project implementation (up to 2 months in 2019 or 2020)
Piping Plover habitat/beach nourishment	Increased turbidity during fill placement, displacement of fish and wildlife, vegetation	Project implementation (summer/fall 2020)

Project	Anticipated Environmental Effects	Anticipated Timeline
(WI)	disturbance	
Ponds behind Erie Pier (MN)	Increased turbidity during dredging, displacement of fish and wildlife, vegetation disturbance	Project implementation (2020-21)
Howard's Bay (WI)	Increased turbidity during dredging, displacement of fish and wildlife, vegetation disturbance	Project implementation (2020-21)

No other reasonable foreseeable projects were identified that would take place within the same geographic scales and timelines.

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

Project actions along with other SLRAOC actions are cumulative in nature. The specific outcomes identified above might result in some temporary negative environmental effects and in some instances may require special consideration in the permitting phase of the project. Over the long term, the Project's improvements to critical wildlife habitat should result in positive outcomes and beneficial effects to the environment of the St. Louis River Estuary.

Cumulatively, the projects completed or proposed in the SLRAOC are expected to improve the ecological function of the estuary and positively impact critical fish and wildlife resources. Positive impacts include: long-term reduction in sedimentation; removing contaminated sediments; removing legacy wood waste; improving condition of the benthos; increasing density and distribution of aquatic macrophytes; softening hardened shorelines; increasing acreage of shallow sheltered bay habitat; reducing abundance of non-native invasive species; and generally increasing quality of habitat for native fish and wildlife populations. These projects have similar habitat improvement goals with short-term impacts similar to those listed for the Project in this EAW. The general intent is that the cumulative effects associated with completion of these projects will have a positive effect on the St. Louis River estuary, which will move the SLRAOC toward the goal of delisting by 2025.

Project actions when combined with reasonably foreseeable projects should result in limited and temporary water quality effects, including total suspended solids, and limited and temporary effects on localized impacts to wildlife and vegetation. Local impacts to fisheries are expected to be minor and limited to the immediate project area, and therefore impacts are not expected to accumulate. The cumulative potential effects on the water resources of the St. Louis Bay Estuary due to conversion of open water and changes in the floodplain are generally minor and have a minor contribution to cumulative potential effects. Cumulative potential effect on water quality in the generation of total suspended solids and other effects will be controlled by permits and approvals required before commencing construction and effective

monitoring during construction. The conditions for these permits require the use of BMPs to achieve a reduced environmental effect.

**20. 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 environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

All potential environmental effects that the DNR is aware of have been addressed above.

**RGU CERTIFICATION.** *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment 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 my knowledge.
- 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 /s/ Kate Fairman Date November 18, 2019

Title EAW Project Manager

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