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**Project Name:**  
Superior Slips

**AECOM Project No.:**  
60685299

**Purchase Order No.:**  
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**From:**  
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**Date:**  
June 25, 2024

**To:**  
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**CC:**  
Kim Elias, AECOM PM

# Memo

**Subject:** Public Communications and Outreach Summary  
Feasibility Studies and Preliminary Designs for Contaminated Sediment Remediation  
Superior Slips, Superior, Wisconsin

The Wisconsin Department of Natural Resources (WDNR) and its partner AECOM Technical Services, Inc. (AECOM) developed Remedial Action Options Reports (RAOR) to determine the best course of action to remediate environmental contamination in three shipping slips in the Port of Superior and collaboration on development of a fourth slip. The organizations are committed to an open, inclusive, proactive, and transparent program of public engagement as part of this undertaking. This Public Communications and Outreach Summary outlines the approach to communications and outreach during project development. It includes discussions, findings and results for the various public involvement initiatives used to support recommendations that reflect the priorities of regional stakeholders.

## 1. Background

A century of heavy industrial activities in the Port of Superior have led to environmental degradation of sediment in areas of the harbor. The federal government has designated the harbor and surrounding watershed as the St. Louis River Area of Concern due to pollution and habitat loss over many decades. This project is one of many – with federal, state, local, and tribal partners -- designed to restore the waterways to health and remove impairments to their use for recreation, commerce, and preservation. This project focuses on contaminated sediment in four slips: General Mills Slip, Oil Barge Dock, Tower Avenue Slip, and C Street Slip. Activities include investigating and characterizing the nature and extent of sediment contamination, developing and evaluating alternatives for remediating sediment contamination, and development of recommended alternatives to address contamination.

## 2. Engagement and Communications Initiatives and Results

Project communications and engagement were ongoing during project development:

- 2.1 Website Updates.** Website content was developed for the Superior Slips page hosted on the WDNR website. The content was updated at two points during project development and included contact information for stakeholder and public inquiries and comments. The website can be visited by [clicking here](#). The fact sheet developed for posting on the website is included in the attachments.
- 2.2 Social Media Updates.** AECOM drafted text for seven social media posts hosted by project partner St Louis River Alliance. The posts introduced the project, provided updates and summarized project outcomes, and promoted interactions with the project team. See attachments for social media update texts.
- 2.3 Conference Poster Development.** AECOM developed a poster with WDNR which was presented by the project manager at the St Louis River Summit, held at UW-Superior in March 2024, where it was seen by dozens of attendees. The poster included information about the investigations on the nature and extent of sediment contamination, alternatives development and evaluation, and a QR code directing readers to the public survey. See attachments to view the poster.
- 2.4 Notification and Public Meeting.** AECOM worked with WDNR to organize and develop materials for a virtual public meeting to present results of environmental investigations and evaluation of remediation alternatives. AECOM developed meeting invitations, distribution lists, media, and public notification per NR 714.07.

An Environmental Justice analysis (see Section 3 below) found that the project area includes a high proportion of low income households; these households tend to be renter households. To account for this, WDNR utilized USPS Every Door Direct service to distribute invitations to make sure that they reached every address, regardless of property ownership. Typically, only property owners would have been notified.

AECOM and WDNR developed a meeting plan and presentation and facilitated the meeting over Zoom on April 11, 2024. Forty-two participants logged in to the meeting, which featured a presentation by the WDNR project manager and open discussion. Participants expressed support for the recommended sediment remediation activities. See the attachments for the meeting invitation, presentation, and minutes including a log of all discussion.

- 2.5 Online Survey.** AECOM worked with WDNR to field a survey to gather the comments from the public regarding project alternatives. The opportunity was also made available for the public to email in comments to the designated project email. The Survey was posted on the project site hosted by WDNR and promoted through social media posts through project partners. Four responses were received, expressing support for the proposed remediation activities. A summary of survey results and comments is provided in the attachments.

## 3. Environmental Justice Analysis.

AECOM developed an overview of demographic and economic characteristics of populations likely to be impacted by remediation activities. For initiatives receiving Federal funds, Executive Order 12898 requires that minorities and low-income populations are not subjected to disproportionately severe adverse impacts as a result of the project. AECOM mapped data from the US Census, American Community Survey, and the EPA's EJ Screen tool to characterize the presence and locations of populations protected under E.O. 12898 relative to the project area and city trucking routes likely to be used for the movement of contaminated material (if such remediation tools are selected).

AECOM utilized this data to assess the likelihood of project impacts to protected populations and tailor an outreach plan targeted at those communities to give them an opportunity to provide meaningful input. E.O. 12898 requires that protected populations are given these opportunities and that their input is incorporated into project development plans in an effort to avoid, minimize, or mitigate disproportionately high and adverse project impacts.

This analysis determined that a large proportion of the area potentially impacted by project activities is low income. These households are much more likely to be renter households than are owner households, and therefore merit additional effort to contact and communicate with them.

**Attachments:**

1. Project Fact Sheet from Web Posts
2. Social Media Post Texts
3. St Louis River Summit Project Poster
4. Public Meeting Invitation
5. Public Meeting Presentation
6. Public Meeting Minutes
7. Online Survey Summary

## **Attachment 1 - Project Fact Sheet from Web Posts**

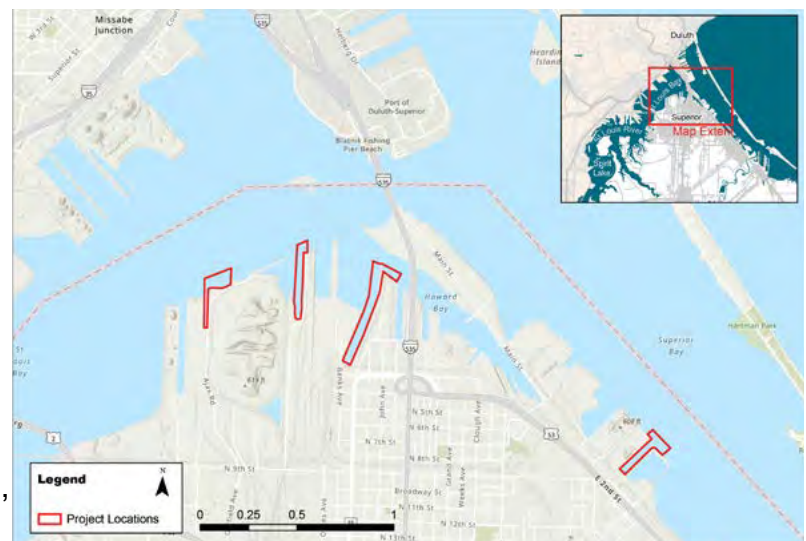
## Pollution Cleanup Underway at Port of Superior Slips



The Wisconsin Department of Natural Resources and its partners continue to advance remediation of environmental contamination in industrial slips in the Port of Superior. The St. Louis River Area of Concern has been subject to pollution and habitat loss over many decades from heavy industrial use, and the Superior Slips Sediment Remediation Feasibility Study is focused on improving environmental conditions in contaminated sediment in four industrial slips. The project is one of many – with Federal, State, Local, and Tribal participation – designed to restore the waterways' health and use for recreation and commerce.

### *Project Background and Purpose*

A century of heavy industrial activities in the Port of Superior have led to environmental degradation of sediment in areas of the harbor. The federal government has designated the harbor and surrounding watershed as the St. Louis River Area of Concern due to pollution and habitat loss over many decades. This project focuses on contaminated sediment in four slips: C Street Slip, General Mills Slip, Oil Barge Dock, and Tower Avenue Slip. Activities include investigating and characterizing the nature and extent of sediment contamination, developing and evaluating alternatives for remediating sediment contamination, and development of a recommended alternative to address contamination.



## *Project Schedule and Opportunities to Get Involved*

The Superior Slips Sediment Remediation Feasibility Study kicked off in June 2022 and is projected to wrap up in late summer 2023 with a set of recommendations for actions to clean up sediment in all four slips. Design of the chosen remedy is anticipated to occur in 2023-2024, and the work to clean up the polluted sediment is anticipated to take place in 2024-2025.

Project details, findings, and remediation alternatives will be presented at one or more public involvement meetings to be held in spring 2023

## *Technical Reports*

For detailed information about project findings, such as sediment contamination evaluations, [click here](#)



## *More Information about the SLRAOC*

There is a lot going on in the St. Louis River Area of Concern, and many partners are engaged in activities to restore the health of the waterway. Check out these links for information and to get involved:

[St Louis River Alliance](#)

[SLRAOC at US Environmental Protection Agency](#)

[SLRAOC at Wisconsin DNR](#)

- [Subscribe to Wisconsin DNR's email subscription service to get automatic updates on St. Louis River AOC events, news, public input opportunities and other important materials.](#)
- [Contaminated Sediment Remediation Sites fact sheet](#)

## **Attachment 2 - Social Media Post Texts**

## **Superior Slips Sediment Remediation Feasibility Study**

*SLRA website notice – December 2022*

### **Major Environmental Remediation Project Kicks Off in the Port of Superior**

The Wisconsin Department of Natural Resources and its partners have begun a feasibility study to remediate environmental contamination in the Port of Superior. The St. Louis River Area of Concern has been subject to pollution and habitat loss over many decades from heavy industrial use, and the Superior Slips Sediment Remediation Feasibility Study is focused on improving environmental conditions in contaminated sediment in four industrial slips. The project is one of many – with Federal, State, Local, and Tribal participation – designed to restore the waterways' health and use for recreation and commerce. This project is just getting underway, and there will be many opportunities for community input and your involvement. Look for more information in January 2023 and the launch of the project website.



## **Superior Slips Sediment Remediation Feasibility Study**

*SLRA website notice – February 2023*

The Superior Slips Sediment Remediation Study is picking up steam! WDNR and its partners have investigated sediment contamination in 4 industrial slips in the Port of Superior and developed alternatives to clean them up. Watch for opportunities to learn more: [WDNR SLRAOC Website!](#)

## **Superior Slips Sediment Remediation Feasibility Study**

*SLRA website notice – June 2023*

The Superior Slips Sediment Remediation Study is expanding to take a more thorough look at contaminants in the harbor. The team is characterizing the presence of additional contaminants of concern in the Tower and General Mills slips to development a more complete plan to improve water quality.

## **Superior Slips Sediment Remediation Feasibility Study**

*SLRA social media notice – Oct 2023*

The Superior Slips Sediment Remediation Study has reached a milestone with WDNR approval of Remedial Action Options Reports with recommendations for removing contaminated sediment in three large slips in the Port of Superior. Watch for an upcoming public meeting about the clean-up effort!

## **Superior Slips Sediment Remediation Feasibility Study**

*SLRA social media notice – Mar 2024*

Based on its consultant's evaluation, the WDNR is recommending options for removing contaminated sediment in three large slips in the Port of Superior. Learn about them and provide your input at a Public Meeting via Zoom on **April 11, 2024, at 5:00 pm**. Get details from the WDNR website; click [here](#).

## Superior Slips Sediment Remediation Feasibility Study

*SLRA social media notice – Apr 2024*

We want to hear from you!

The Wisconsin Department of Natural Resources and its partners have reached a major milestone in a project to remediate environmental contamination in the Port of Superior. The St. Louis River Area of Concern has been subject to pollution and habitat loss over many decades from heavy industrial use; the Superior Slips Sediment Remediation Feasibility Study focuses on characterizing contaminated sediment in three industrial slips and evaluating options to address it.

Based on its consultant's evaluation, the WDNR is recommending options for removing contaminated sediment in the General Mills, Tower Avenue, and Oil Barge Dock Slips in the heart of the port. Investigations found high levels of toxic metals such as mercury and lead, dioxins, and coal particles among other chemical contaminants. The contaminants that pose the greatest human health and ecological risk were identified as focus areas, and their extents and distribution in the slips were mapped in three dimensions.

Alternatives to clean up the contaminants were screened for technical and economic feasibility – such as effectiveness, cost, and implementability. Clean up methods are recommended for each slip based on the scoring: mechanical dredging for the Oil Barge Dock and General Mills Slips, and dredging and capping for the Tower Avenue Slip. The maximum amount of sediment will be removed without spreading contaminants further. The sediment will be barged to a management area, dried and stabilized before being trucked to a landfill. A total of 15,000 truckloads of material will be removed at a total cost of about \$44 million!

The project is one of many – with Federal, State, Local, and Tribal participation – designed to restore waterways health and use for recreation and commerce. Learn about the Superior Slips Sediment Remediation project on the [WDNR website](#). For more details about the sediment clean up options and to provide your input, join us for a Public Meeting via Zoom on **April 11, 2024, at 5:00 pm**. Get details, find a link to join the meeting, and fill out our comment form on the website. The deadline for receiving comments is June 7, 2024.

## **Superior Slips Sediment Remediation Feasibility Study**

*SLRA social media notice – Jun 2024*

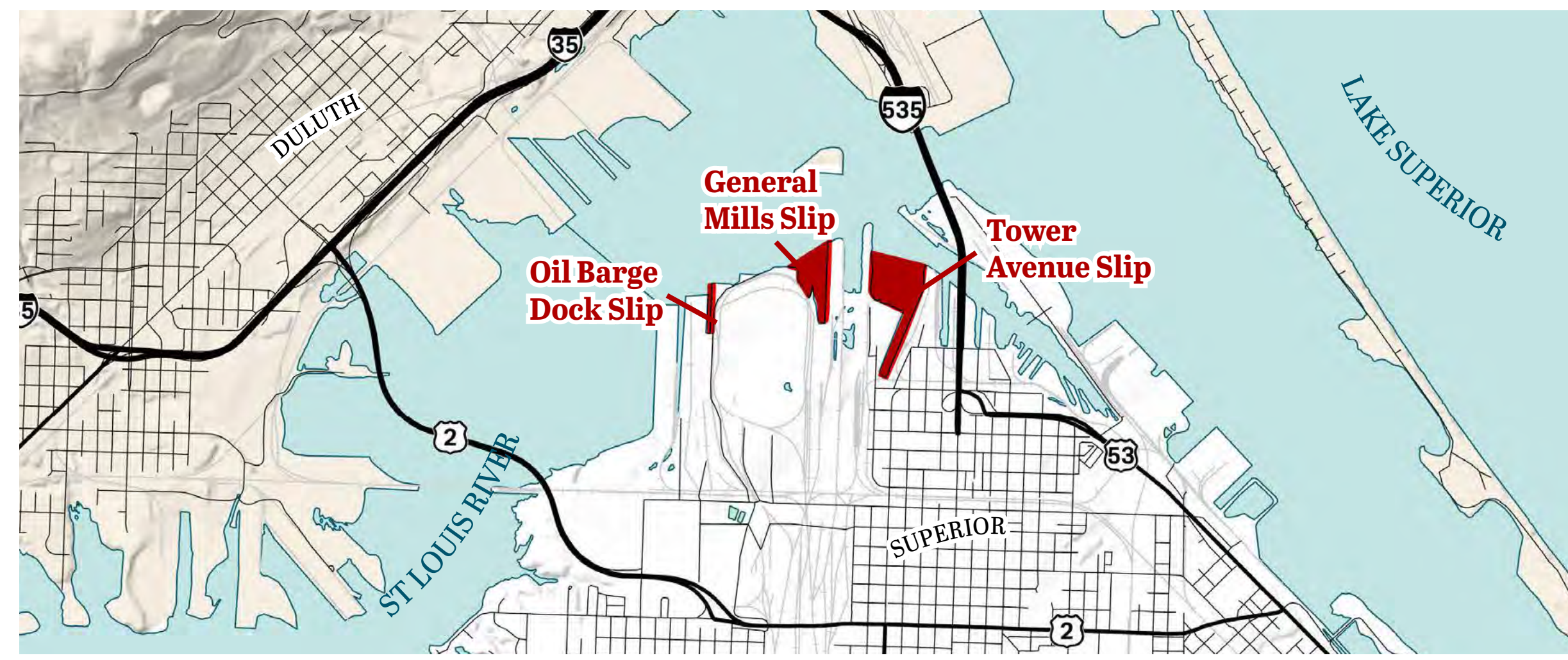
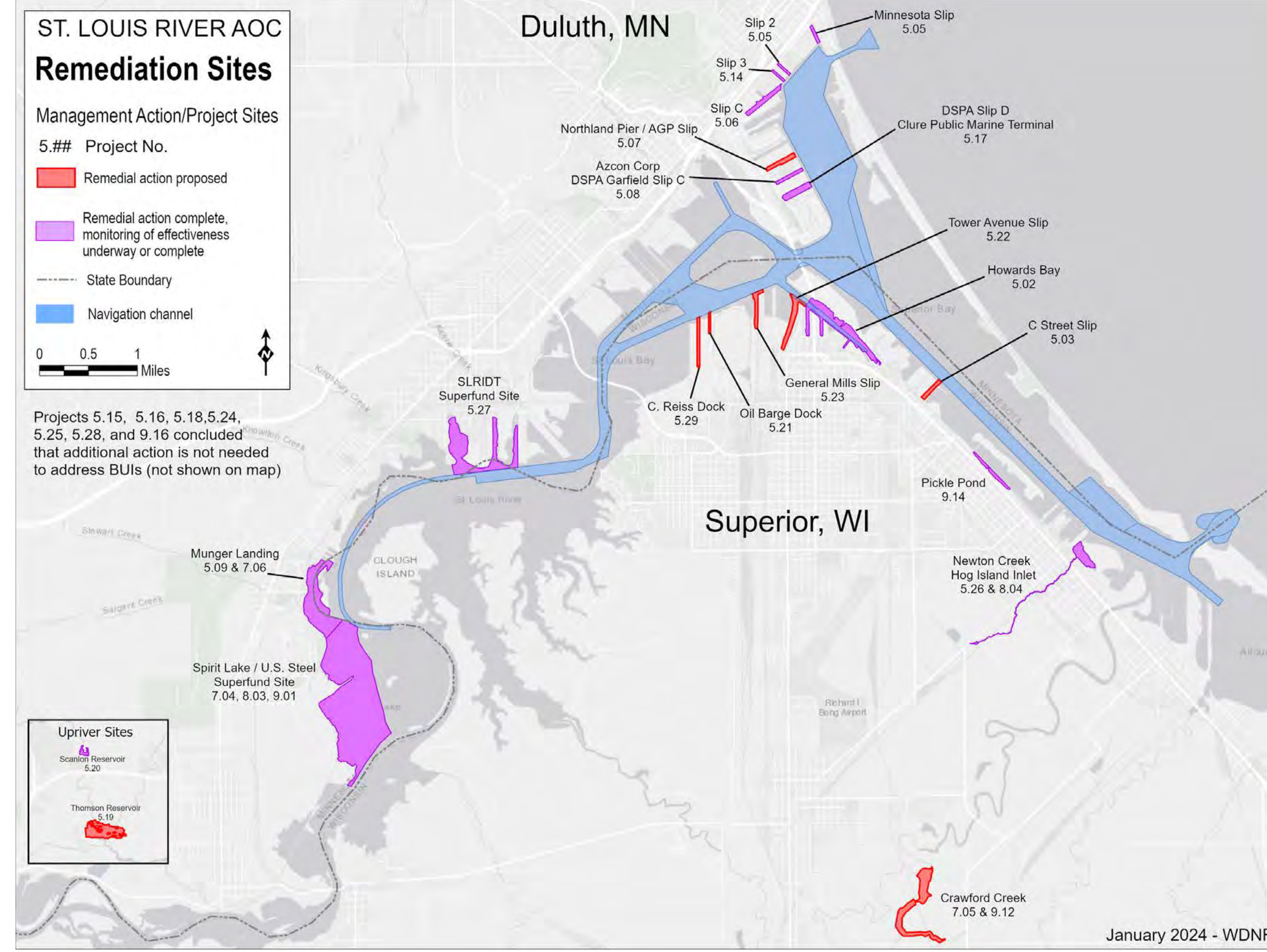
Last call for comments on the Superior Slips Remediation Plan! The WDNR has recommended options for addressing contaminants in the Port of Superior, removing 15,000 truckloads of polluted sediment! Learn about the project [here](#) and fill out our short survey by June 7. We want to hear from you!

## **Attachment 3 - St Louis River Summit Project Poster**

# Cleaning up Contaminated Sediments in the Superior Slips

## St. Louis River Area of Concern

Author: Joe Graham, Wisconsin Department of Natural Resources (DNR)  
Coauthors: Brian Mastin, Alison Bitel, Josh Loomis, Reece Frederick, Devin Kamperschroer, Kim Elias (AECOM)



### The Superior Slips

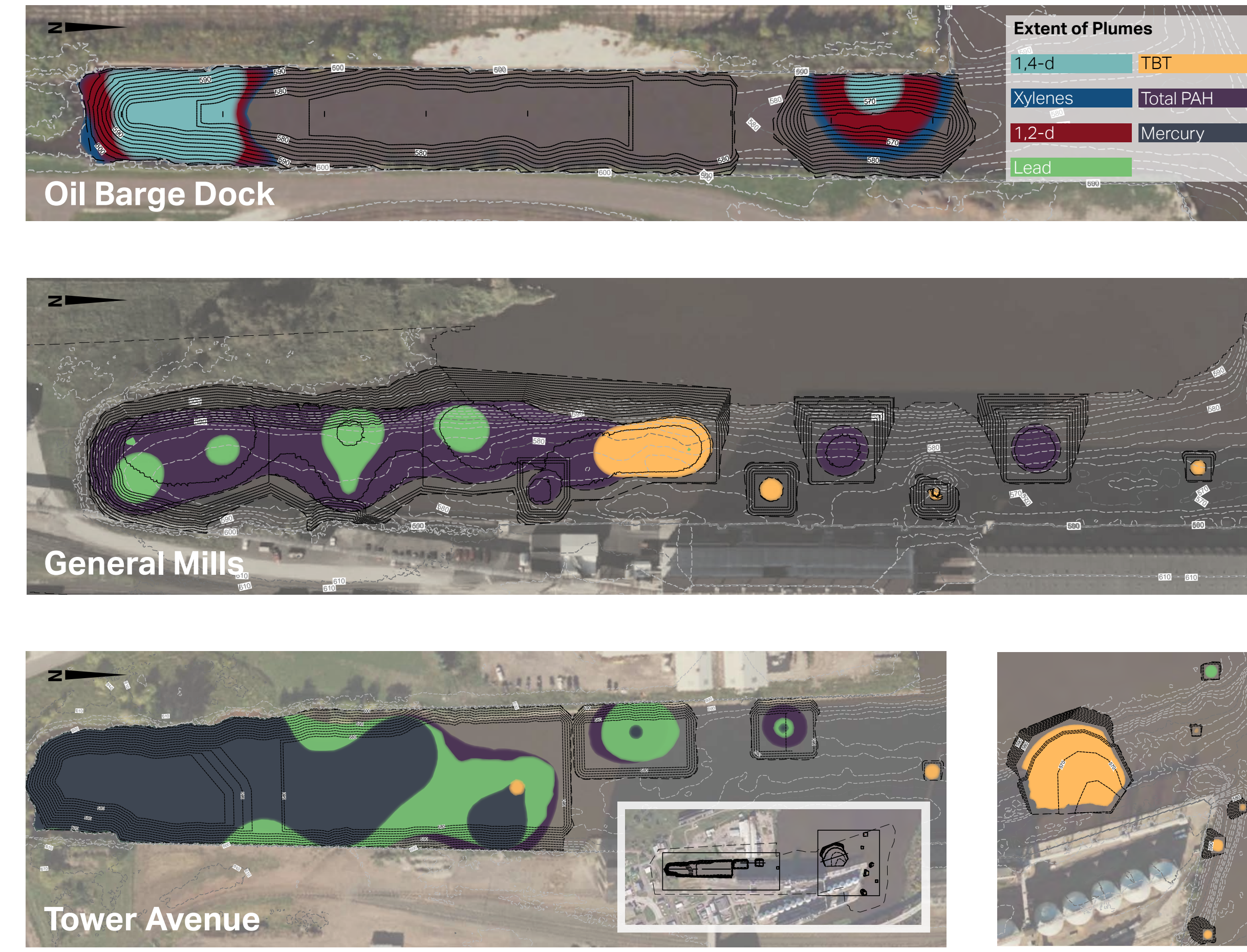
Historic habitat destruction and discharges of toxic pollution have led the EPA to designate the St. Louis River estuary as an Area of Concern (AOC). The implementation of major environmental regulations starting in the mid-twentieth century have improved conditions, but these laws don't address ongoing impacts from legacy contamination. AOCs focus on widespread cleanup and restoration efforts and strive to remove each Beneficial Use Impairment (BUI) recognized within the AOC. The Great Lakes Restoration Initiative (GLRI) was initiated in 2010 to accelerate these efforts to protect the Great Lakes and repair each AOC.

After sampling of sediments within the Superior Slips, the Wisconsin Department of Natural Resources, working in collaboration with its consultant AECOM and the EPA, has proposed activities to address sediment contamination within these three slips to improve sediment quality and ultimately restore the beneficial uses of the St. Louis River. The DNR will host an informational meeting online in April 2024 to allow members of the public to ask questions and give input on the recommended cleanup approaches. More information on how to attend, or other ways to engage with the project is located on the bottom right of this poster.

Investigations of the General Mills, Tower Avenue and Oil Barge Dock Slips have

found high concentrations of toxic metals (arsenic, lead, and mercury), dioxins (biproducts of industrial processes), polycyclic aromatic hydrocarbons (PAHs occur in fossil fuels), volatile organic compounds (VOCs are highly reactive and can pose a risk to human health as well as atmospheric pollution), semi-volatile organic compounds (SVOC examples are oil-based products, pesticides and fire retardants), tributyltin

(TBT is a common antifouling agent formerly used in marine paints which is highly toxic to marine life), and high concentrations of coal particles in excess of risk-based cleanup goals. The contaminants found to pose the greatest human health and ecological risk were identified as focus areas. These focus areas are outlined for each Slip in the figures below.



### Timeline

**Mid to Late 1800's** – Superior is formed, incorporated, and begins development of railroad & harbor infrastructure

**Late 1880's to early 1970's** – Marshlands filled for maritime uses including shipments of fossil fuels and various commodities

**1890 to 1956** – Raw and combined sewage discharged to Tower Avenue slip

**1970's** – Separate storm sewers constructed to decrease the volume and frequency of untreated waste entering slip during wet weather

**1996 & 2008** – EPA bans lead in US gasoline. Global ban on use of tributyltin in antifouling systems

**1990s – 2022** - Sediment sampling investigations find contamination in the Superior Slips

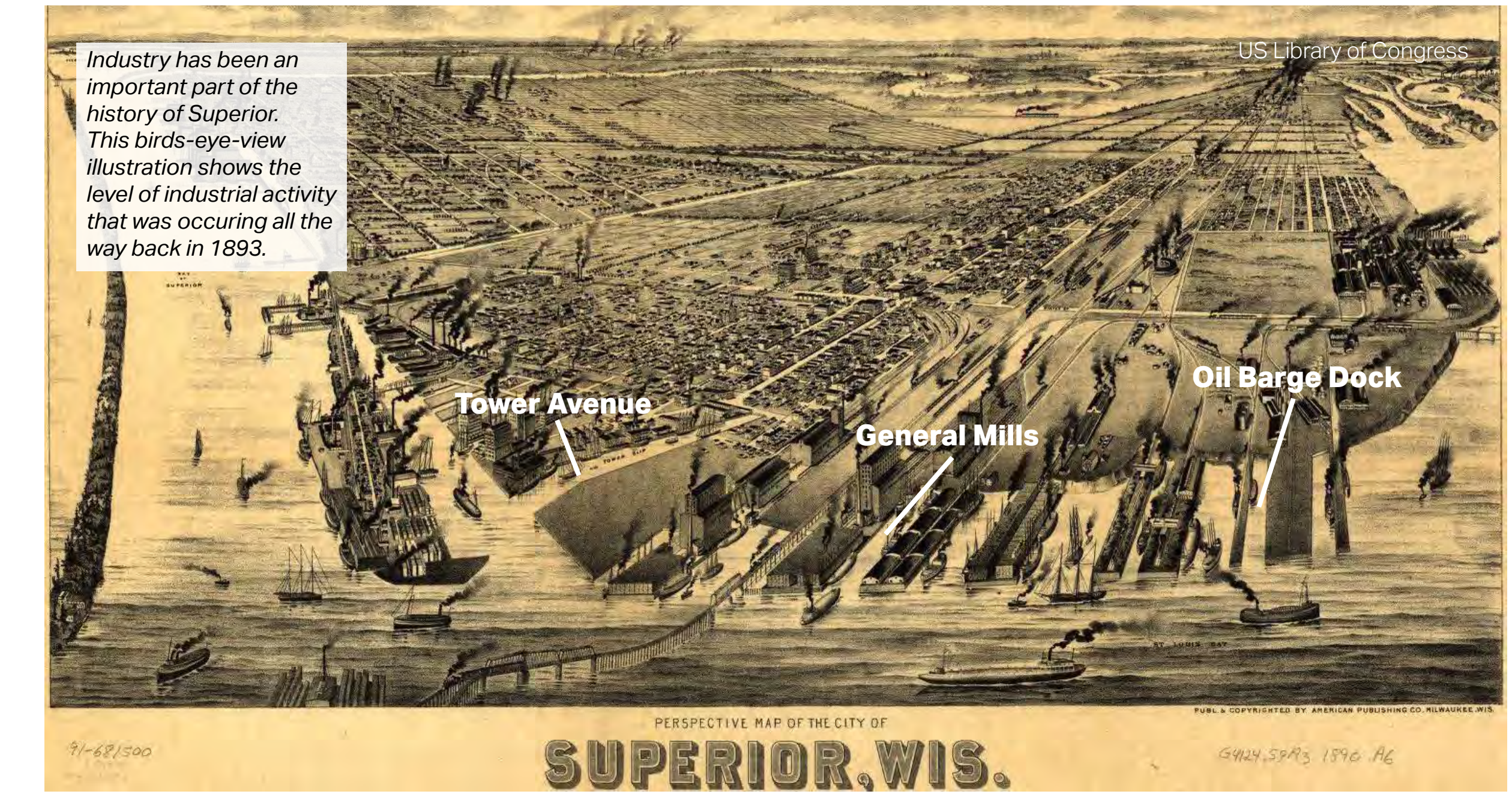
**2023** – Sampling by AECOM and Remedial Strategies are defined, analyzed, evaluated, and recommended for each slip

**2024** – Planned - Public Informational Webinar early April. Seeking input on remediation and dredged material management

**2024 to 2025** – Remedial Design (forecasted – dates may vary)

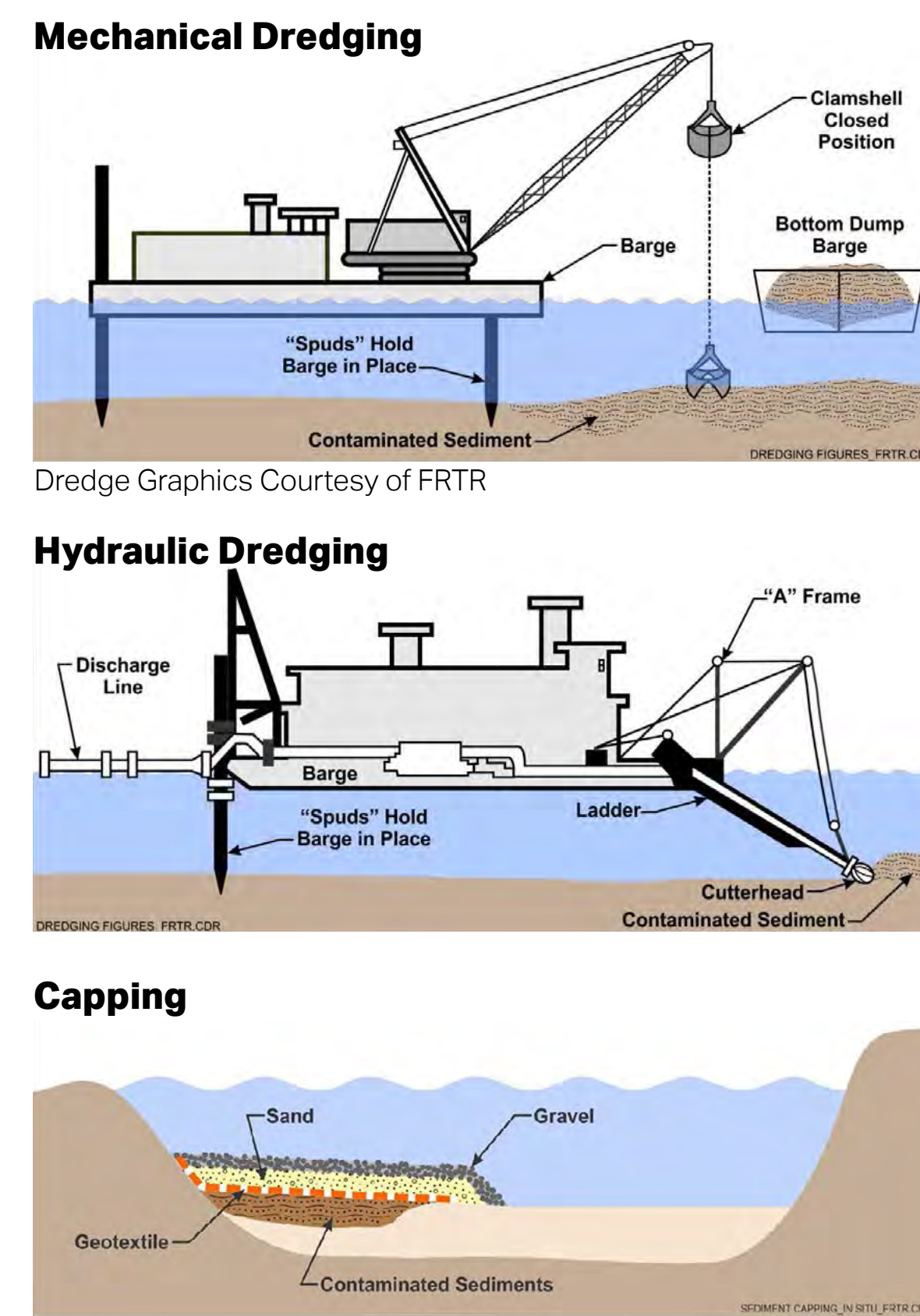
**2026 to 2027** – Remedial Construction (forecasted – dates may vary)

**2028 & beyond** – Operation and maintenance of any engineering controls (e.g., caps)



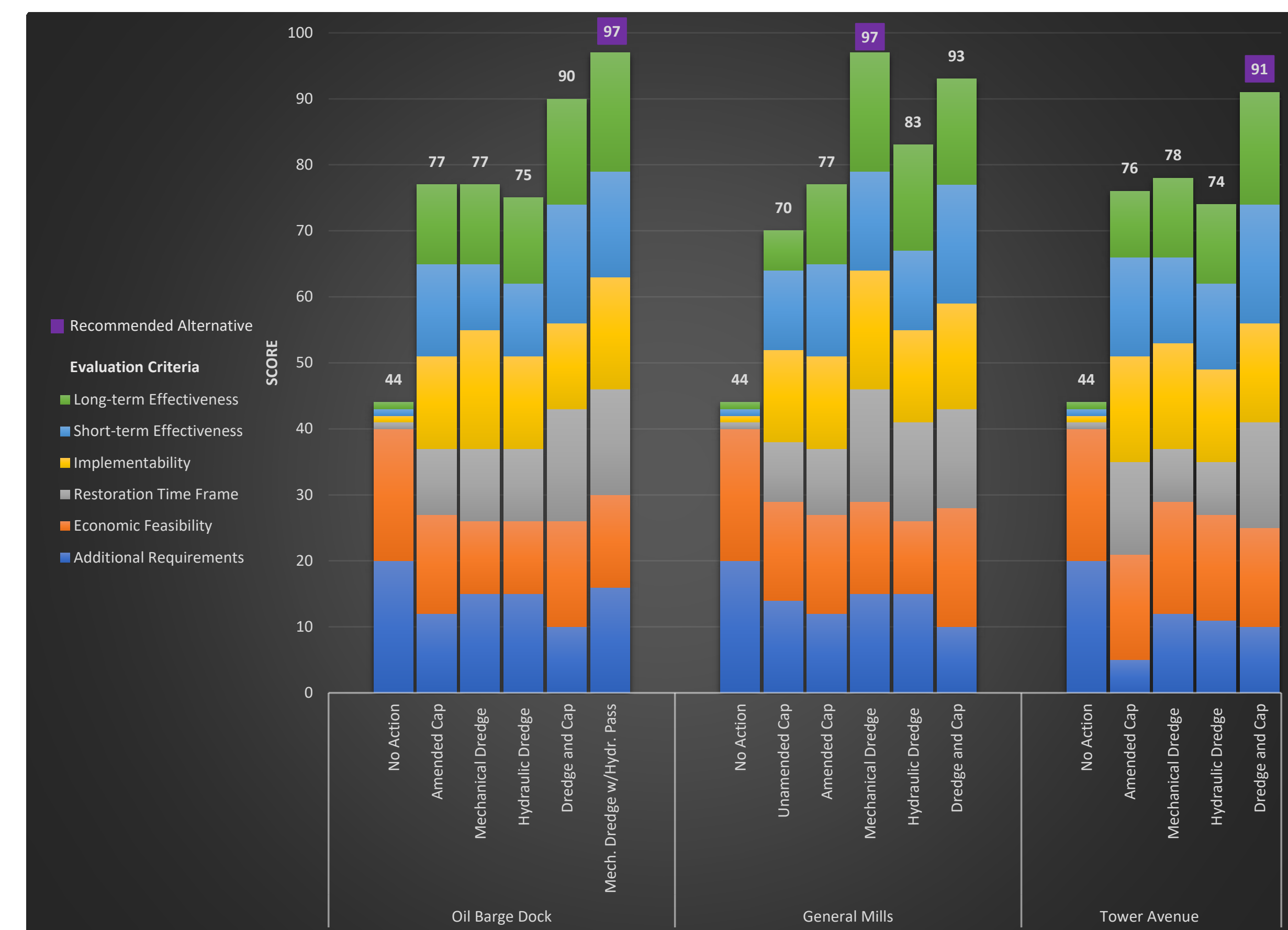
### What Are Our Options?

During the process of identifying cleanup options, alternatives were discussed and screened. The alternatives were evaluated against criteria including technical feasibility (i.e., long-term effectiveness, short-term effectiveness, restoration time frame and implementability), economic feasibility and other considerations. A scoring system was developed to compare alternatives for each evaluation criteria. In this assessment, all criteria are equally weighted, and a total score was used for identification of a recommended alternative. See the graph to the right for the scoring outcome. The highest score wins!



Slip	Recommended Alternative	Sediment Volume (Cubic Yards)	Number of Truck Loads Each symbol represents 500 truck loads of sediment	Estimated Cost
Oil Barge Dock	Mechanical Dredging followed by Hydraulic Dredging	19,731	1,900	\$6,916,606
General Mills	Mechanical Dredging	67,571	5,200	\$15,751,387
Tower Avenue	Mechanical Dredging & Capping	102,235	7,900	\$21,650,357
<b>Total:</b>		<b>189,537</b>		<b>\$44,318,350</b>

### Comprehensive Analysis of Alternatives



The two threshold criteria: (1) Overall Protectiveness of Public Health and the Environment and (2) Compliance with Applicable, Relevant and Appropriate Requirements are pass/fail and not included in numeric scoring. Options that did not meet either threshold criteria were not included in the comparative analysis. For example, the monitored natural recovery alternative does not address beneficial use restrictions in a reasonable timeframe and was excluded. Exception, the "No Action" alternative is included for baseline comparison only.

### Removing Contaminated Sediment

Contaminated sediment will be removed from each slip by their selected remedy. Mechanical dredging was selected as the main remedy for all three slips. The goal is to remove the maximum amount of contamination as possible without spreading it further. Other precautions, such as turbidity barriers, will be put in place to minimize the mobility of suspended sediment outside of the project area.

A sediment management area may be located between the Tower Avenue and General Mills Slips to process and treat removed sediment from all

### How Much Sediment Will Be Removed?

The clean-up of the three slips will remove an estimated 189,537 cubic yards of sediment from the project area. This would be enough sediment to fill the SS Meteor on Barkers Island (pictured to right) 25 times.

three Slips. Barges containing dredged material will travel outside of the project area into the Navigation Channel to offload contaminated sediment into the management area. Several options for treatment of the contaminated sediment are being considered. Generally, the contaminated sediment will be dried and stabilized prior to being taken to a landfill. The actual locations for sediment management will be determined during the design of the selected remedies.

### We Want to Hear from You!

A Public Informational Webinar will be held this April where project staff will provide additional information, answer any questions, and receive input from members of the public. If you are interested in attending, or would like to visit the project website, please scan the QR code to the right.





## **Attachment 4 - Public Meeting Invitation**

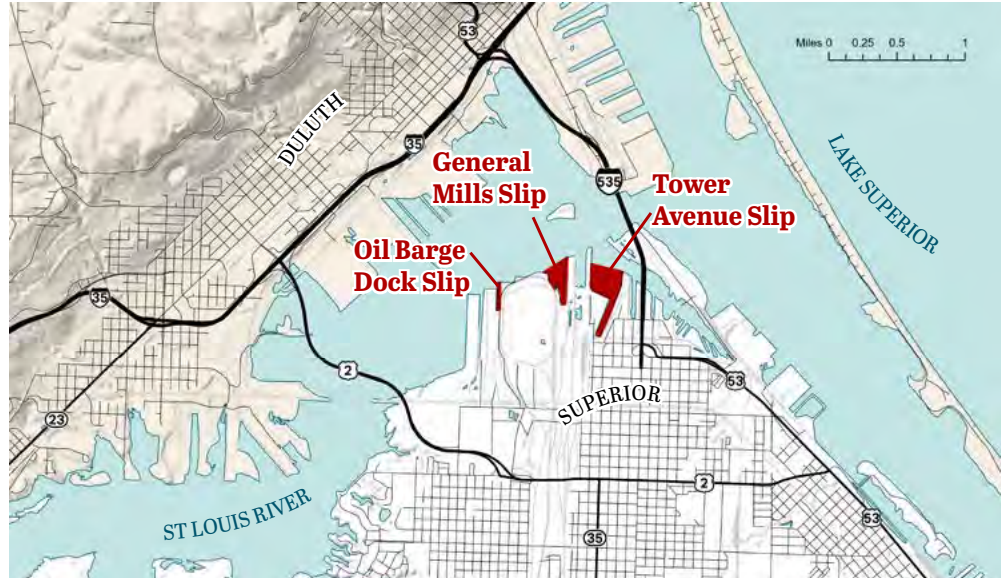
# Cleaning Up the Superior Slips

The Wisconsin Department of Natural Resources' Superior Slips Sediment Remediation Project is part of a larger effort to clean up the St. Louis River. This project focuses on contaminated sediment in three industrial shipping slips at the Port of Superior.

Over a century of industrial activities in the Superior Slips have led to sediment contaminated with metals, mercury, organotin, polycyclic aromatic hydrocarbons, and other compounds that are targeted for cleanup to remove the St. Louis River from the list of most polluted sites on the Great Lakes.

The WDNR has characterized extent of contamination, evaluated alternatives for remediating the sediment, and based on its consultant's evaluation, the WDNR is recommending options for removing contaminated sediment to clean up the slips. Remedial design is scheduled to start late in 2024 and clean up is forecasted for 2026.

**Use this QR code to visit our website and attend our virtual public meeting!**



# We want to hear from you!

Join us for a **virtual public meeting on April 11, 2024 from 5-6 PM** to learn about contamination in the Superior Slips, the alternatives for remediating contaminated sediment, how they were evaluated, and the project recommendations. We want to hear from you!

A Zoom link is found on the project website. Let us know what's important you!

<https://dnr.wisconsin.gov/topic/GreatLakes/SuperiorSediment>

Email [DNRRRSuperiorSlips@wisconsin.gov](mailto:DNRRRSuperiorSlips@wisconsin.gov) with any questions.



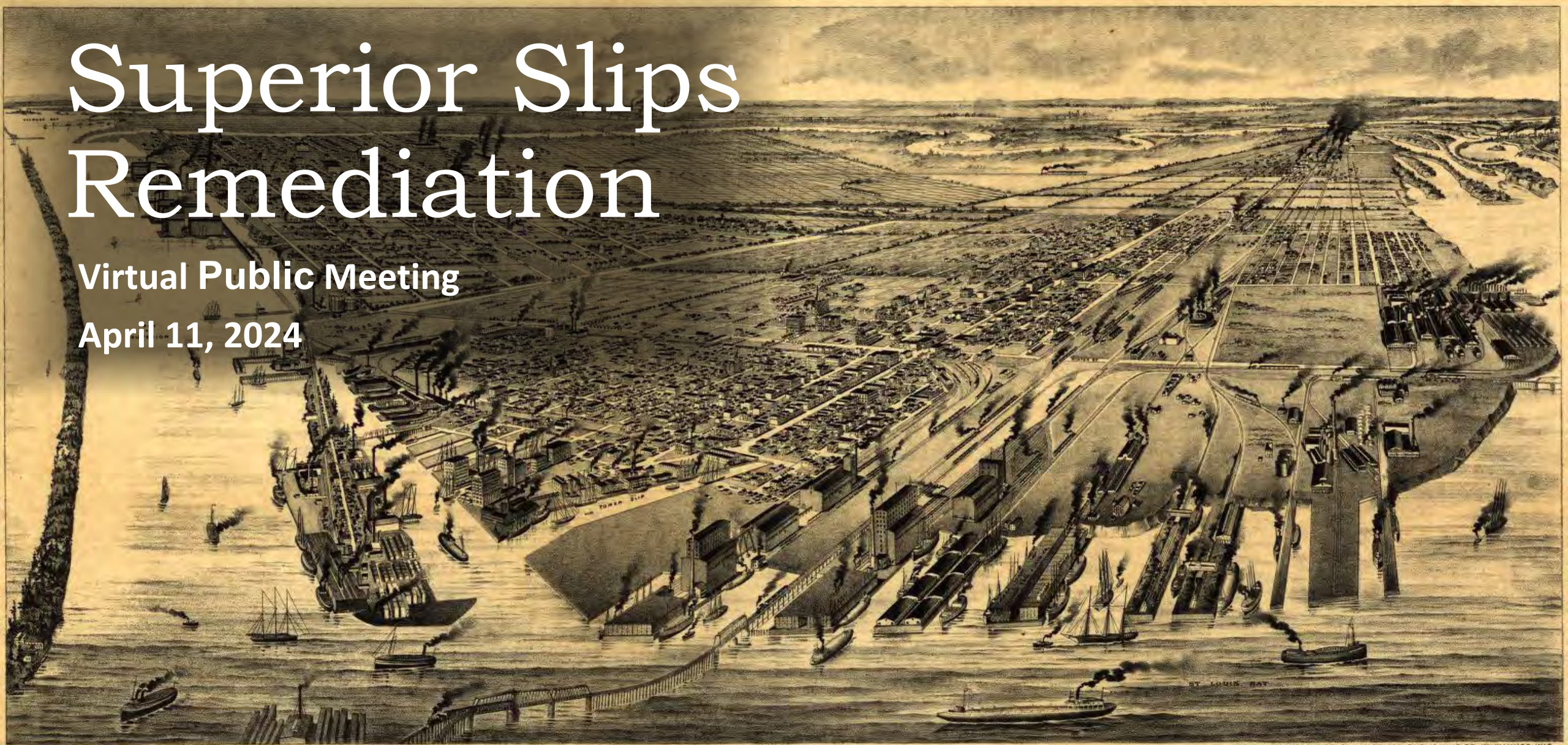
DNR Service Center  
810 W Maple St  
Spooner, WI 54801

## **Attachment 5 – Public Meeting Presentation**

# Superior Slips Remediation

Virtual Public Meeting

April 11, 2024



PERSPECTIVE MAP OF THE CITY OF

## SUPERIOR, WIS.

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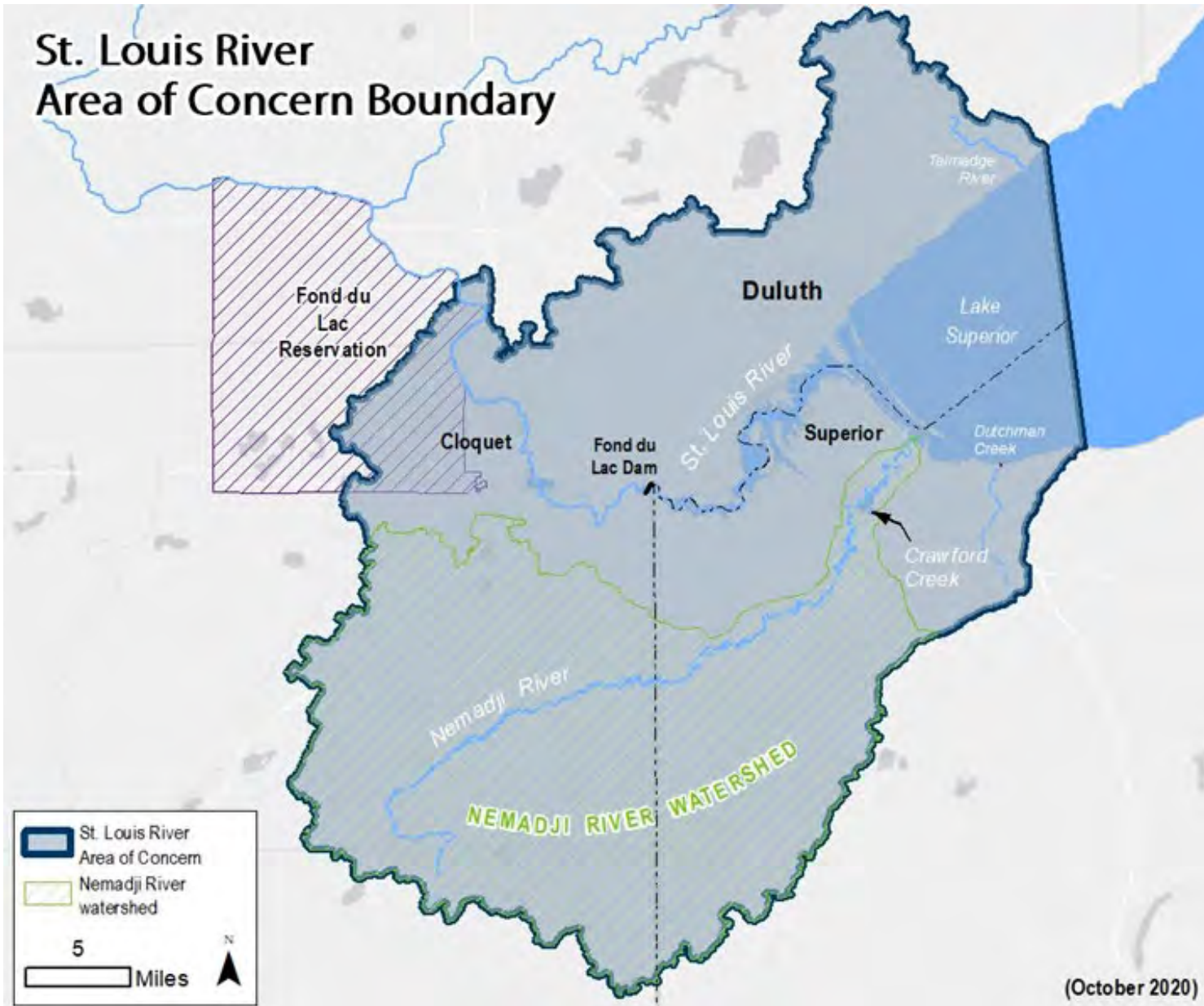
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# What is an Area of Concern?

- An Area of Concern (AOC) refers to a location in the Great Lakes region that has experienced significant environmental degradation. These areas suffer significant environmental damage, impacting aquatic life and water quality.
- Historically, the Great Lakes and their tributaries have been central to trade and industry, leading to pollution and habitat loss over time. Improper waste disposal and unchecked land practices worsened the situation.
- AOCs represent the most severely affected sites, requiring targeted efforts for restoration and cleanup to remove each Beneficial Use Impairment (BUI).
- The Great Lakes Restoration Initiative (GLRI) was initiated in 2010 to accelerate these efforts to protect the Great Lakes.



## St. Louis River Area of Concern Boundary



# St Louis River Area of Concern

The SLRAOC encompasses the final 39 miles of the river, stretching from Cloquet to the Duluth/Superior Harbor, including the Nemadji River watershed and a section of Lake Superior.

This area is marked by a contrast between the upper estuary's natural landscapes and the lower estuary's urban and industrial development, culminating in the heavily trafficked Duluth–Superior Harbor.

Designated as an Area of Concern in 1987 due to environmental issues, the SLRAOC is a critical focus for restoration and protection efforts within the Great Lakes region.

St. Louis River, the largest U.S. tributary to Lake Superior drains 3,634 square miles, entering the southwestern corner of the lake between Duluth, Minnesota, and Superior, Wisconsin. The river flows 179 miles through three distinct areas:

- coarse soils, glacial till and outwash deposits at its headwaters;
- a deep, narrow gorge at Jay Cooke State Park; and
- red clay deposits in its lower reaches.

# Beneficial Use Impairments

- 1. Fish consumption advisories**
2. Degraded fish and wildlife populations  
(*BUI removed Jan. 2023*)
3. Fish tumors or other deformities  
(*BUI removed Feb. 2019*)
- 4. Degradation of benthos**
- 5. Restrictions on dredging activities**
6. Excessive loading of nutrients and sediments  
(*BUI removed April 2020*)
7. Beach closings and body contact
8. Degradation of aesthetics  
(*BUI removed Aug. 2014*)
9. Loss of fish and wildlife habitat



Red text means impairment is due to sediment quality



# ST. LOUIS RIVER AOC Remediation Sites

## Management Action/Project Sites

5.## Project No.

█ Remedial action proposed

█ Remedial action complete, monitoring of effectiveness underway or complete

     State Boundary

█ Navigation channel

0 0.5 1 Miles



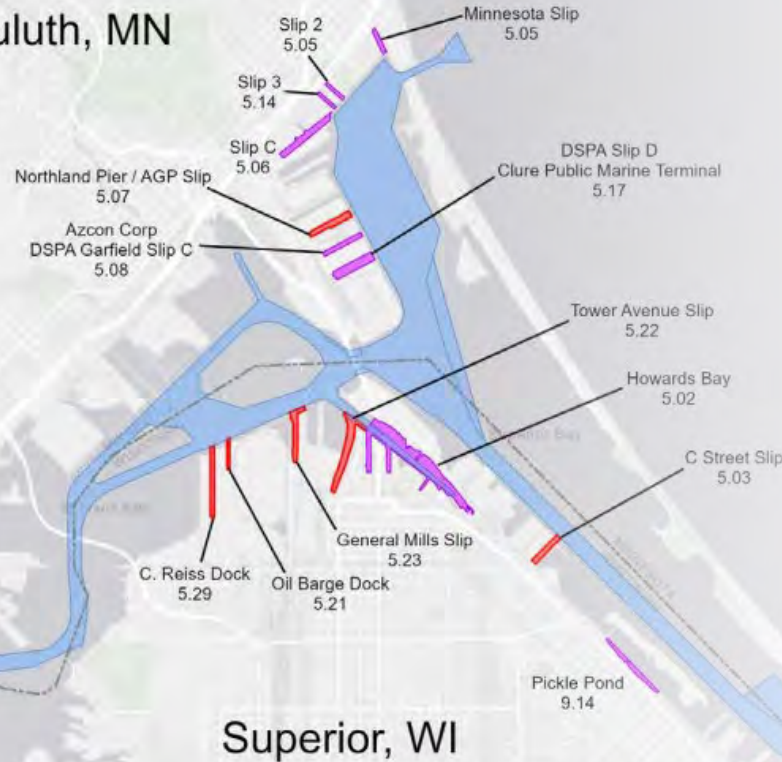
Projects 5.15, 5.16, 5.18, 5.24, 5.25, 5.28, and 9.16 concluded that additional action is not needed to address BUIs (not shown on map)

**Upriver Sites**

█ Scanlon Reservoir 5.20

█ Thomson Reservoir 5.19

Duluth, MN



Superior, WI

# Sediment Remediation Sites

Contaminated sediments impair uses of the St. Louis River

- Increased cost for dredging & management of dredged material
- Mercury & PCBs in fish people eat
- Degraded benthic community

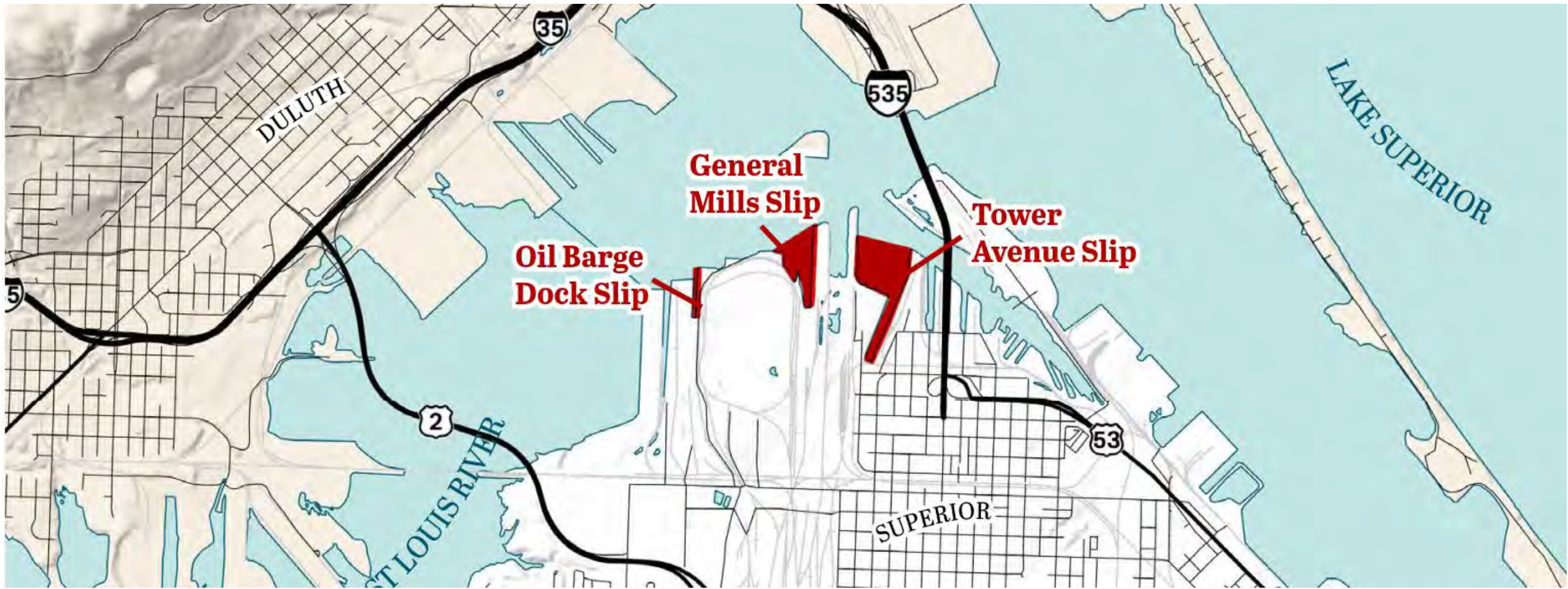
Sediment remediation at select sites are among the last remaining actions to necessary to restore the river

## Management Actions:

5.21 - Oil Barge Dock

5.23 - General Mills

5.22 - Tower Avenue



## Superior Slips Location

The Oil Barge Dock Slip, General Mills Slip, and Tower Avenue Slip are all located north of downtown Superior.

# Complex History of Land Use & Releases

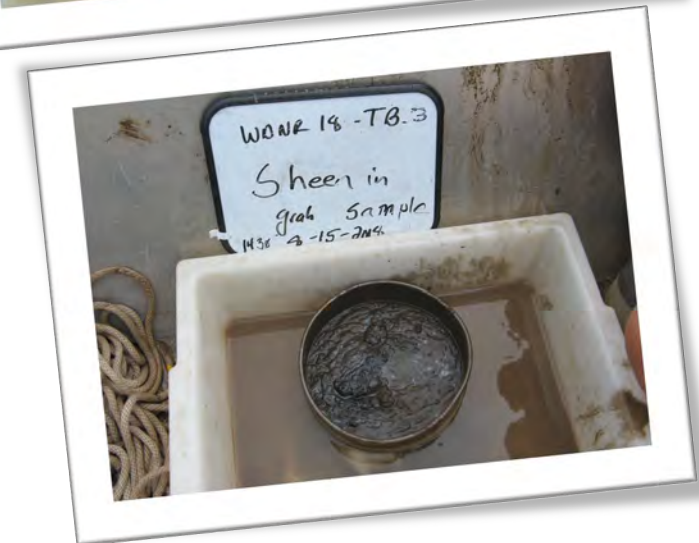
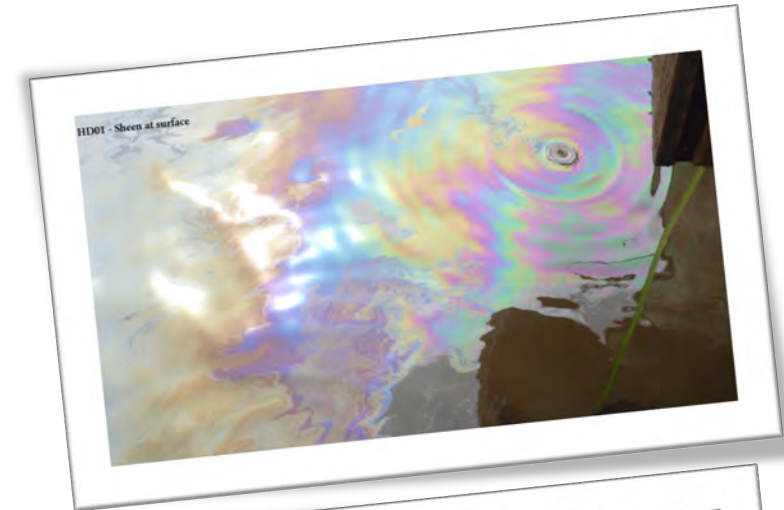


- Major petroleum storage/ distribution (> 70-million gallons)
- Major coal storage/distribution (> 15-million tons)
- Steel Mill, Coke Ovens, Foundries
- Industrial Waste Disposal
- Electric Generating Station
- Machining Facilities, Boiler Works
- Railyards and Railroad Repair
- Grain Terminals – Ships



# Petroleum Handling and Storage Operations

## Indications of Petroleum Impacts



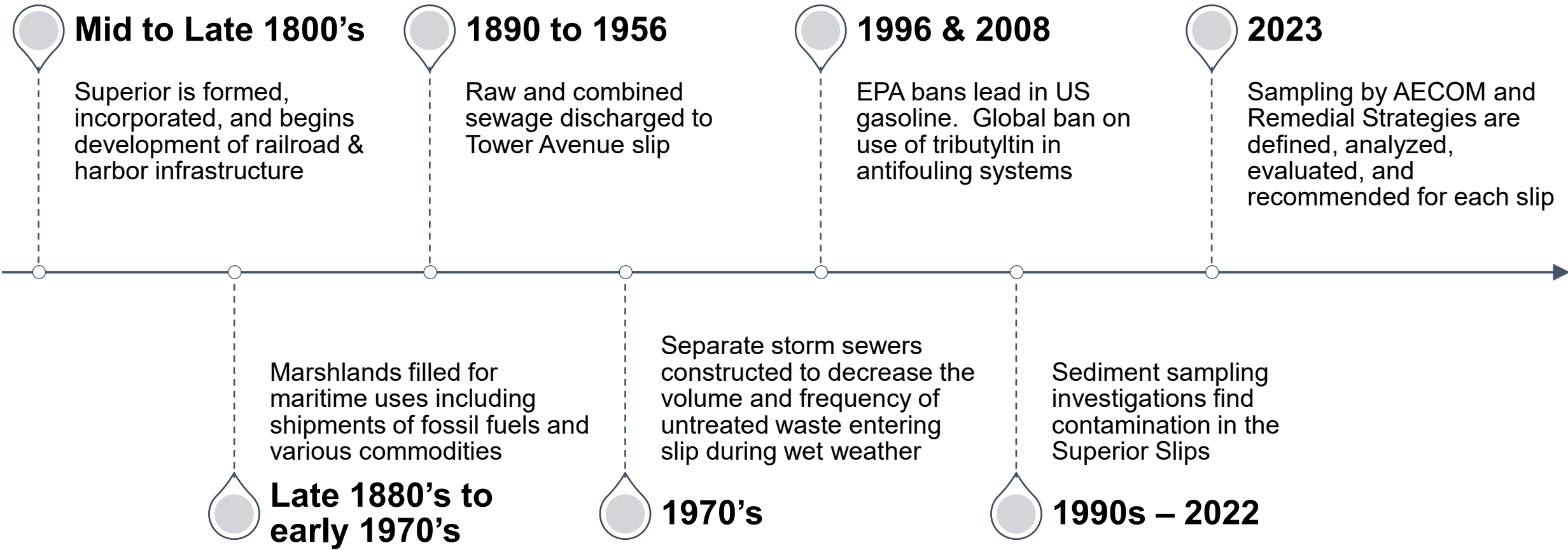
# Maritime activities



Screenshots of MN PBS Working Waterfront

Hull scraping, sanding and painting of an ocean-going vessel in a Superior slip

# History of Superior Slips (Contamination & Investigation Timeline)



# Contaminants Summary

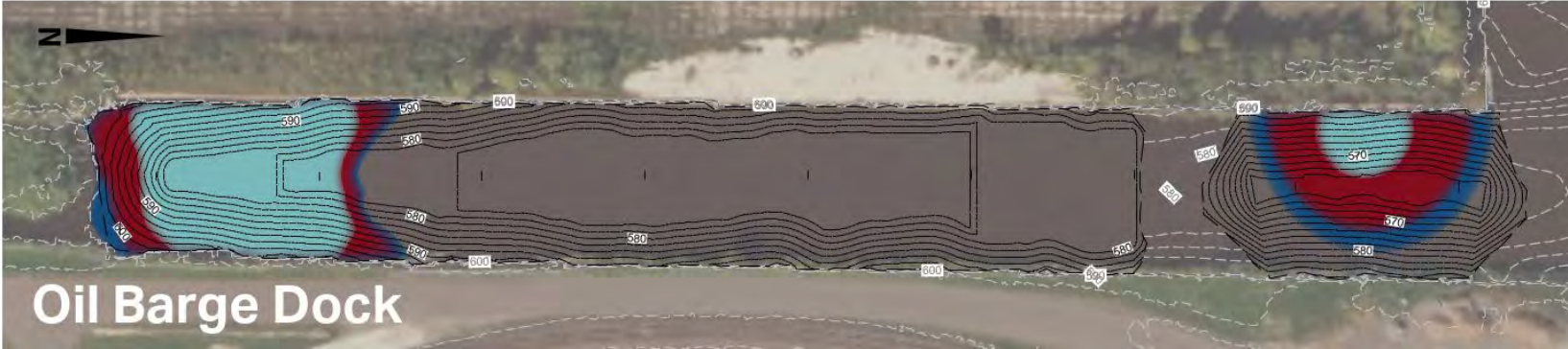
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Investigations of Slips have found high concentrations of the following contaminants:

- **Metals** - Arsenic, lead, and mercury
- **Dioxins** - biproducts of industrial processes
- **Polycyclic aromatic hydrocarbons** - PAHs occur in fossil fuels
- **Volatile organic compounds** - VOCs highly reactive and can pose a risk to human health as well as atmospheric pollution
- **Semi-volatile organic compounds** - SVOC examples are oil-based products, pesticides and fire retardants
- **Tributyltin** - TBT is a common antifouling agent formerly used in marine paints which is highly toxic to marine life
- High concentrations of **coal particles** in excess of risk-based cleanup goals
- Observations of petroleum and measured toxicity to benthic organisms

# Contaminants

Contaminants with the greatest human health and ecological risk have been identified as focus areas.



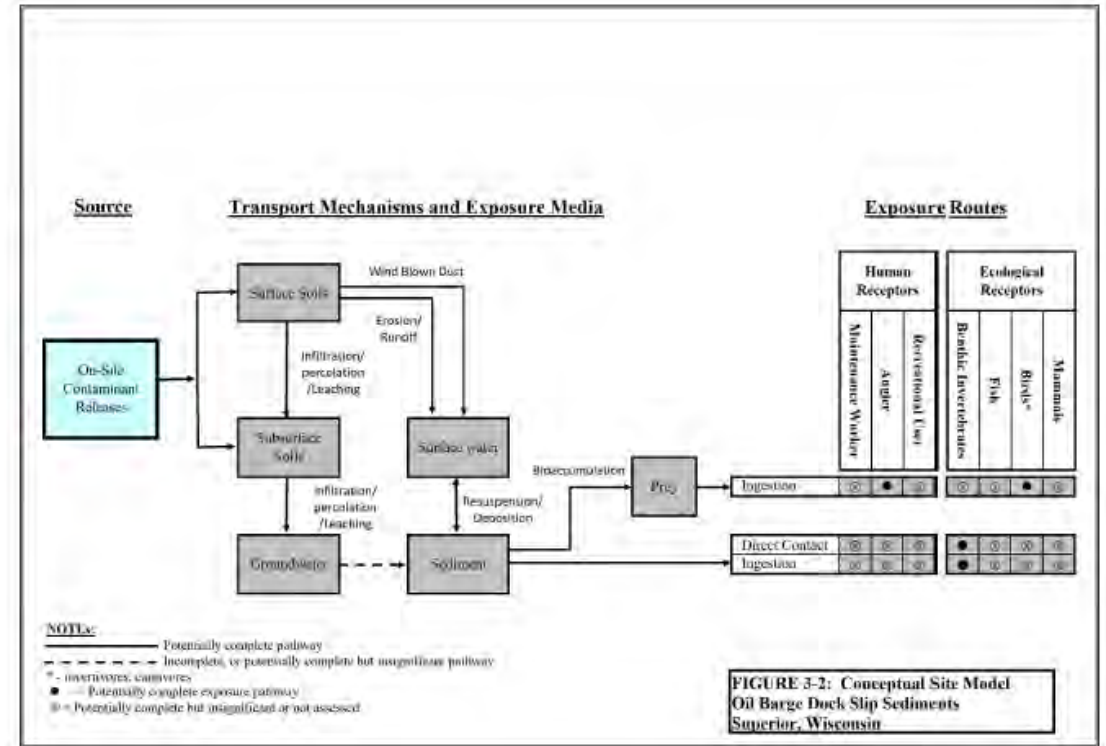
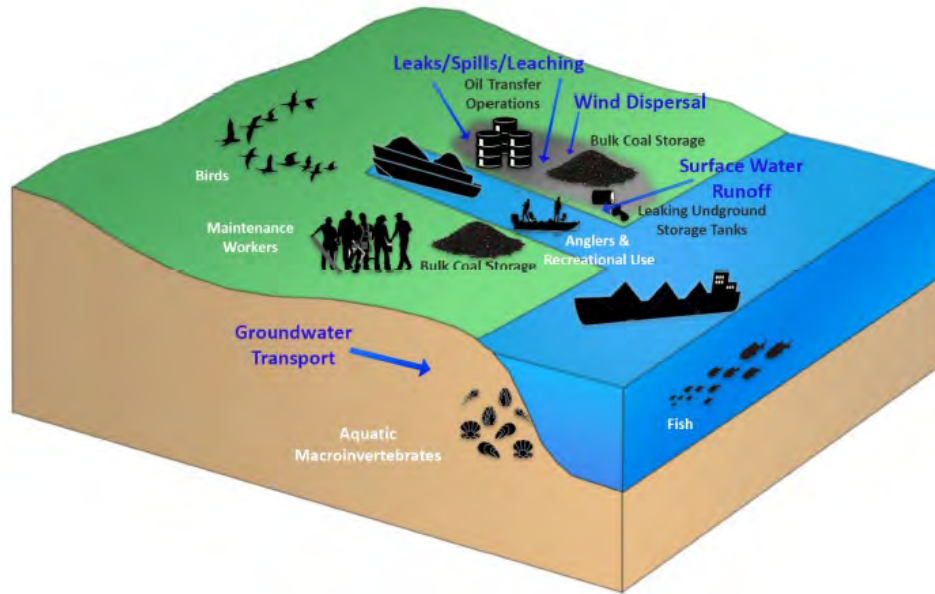
## Extent of Plumes

1,4-d	TBT
Xylenes	Total PAH
1,2-d	Mercury
Lead	



# Conceptual Site Models

## Transport mechanisms, Exposure Media, and Receptors



# Developed Cleanup Objectives and Criteria

## Remedial Action Objectives

- Reduce sediment concentrations of constituents of concern (COCs) to minimize or eliminate risks.
- Reduce or eliminate the degree and extent of COCs in the Slip that necessitate special handling procedures during dredging or dredged material disposal.
- Minimize or eliminate the potential for contaminated sediment within the Oil Barge Dock Slip to act as a source of contamination in the St. Louis River Estuary beyond the slip.

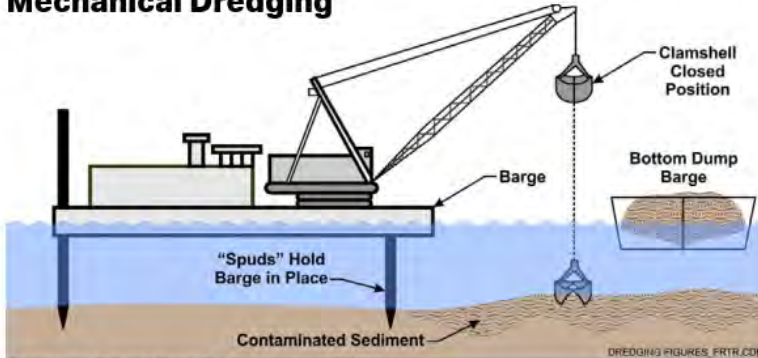
*List above is example from the Oil Barge Dock*

## Preliminary Remediation Goals

- Generally, sediment quality midpoint effect concentrations
- Consistency with other GLLA project in SLRAOC
- Industrial direct contact soil standards as surrogate for dredging restrictions for disposal

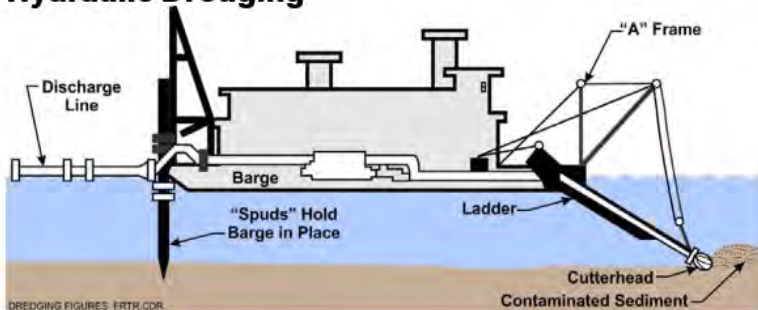
# Remediation Options

## Mechanical Dredging

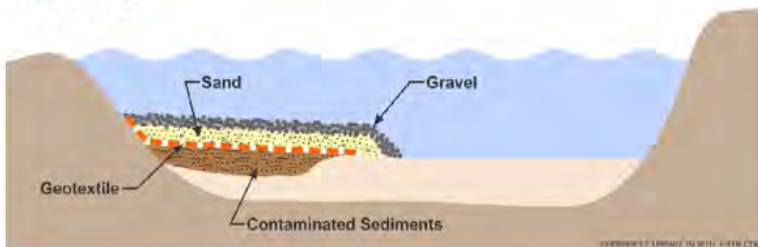


Dredge Graphics Courtesy of FRTR

## Hydraulic Dredging



## Capping



## Remediation Option

## Description

## Pros

## Cons

### Mechanical Dredging

Uses machines to suck up and remove contaminated mud and sediment from riverbeds

- Efficient sediment removal
- Facilitates deeper waterways accommodating larger ships
- Restore and nourish eroded beaches and provide natural defense against coastal erosion
- Mitigates floods, protecting property and lives
- In some cases, revives aquatic habitats

- Temporarily impedes river access and recreational activities
- Challenging debris handling
- Requires significant dilution water for sediment transport
- Possible residual contamination

### Hydraulic Dredging

Uses water pressure to push and scoop up sediment from the riverbed

- Lower cost due to reduced labor and capital investment
- Less energy and emissions
- Direct transport to processing plant

- Disposal Challenges
- Risk of coastal erosion

### Capping

Involves covering contaminated sediment with a layer of clean material (sand or gravel) to contain contaminated sediment

- Isolates contaminants
- Minimal disruption to aquatic habitats

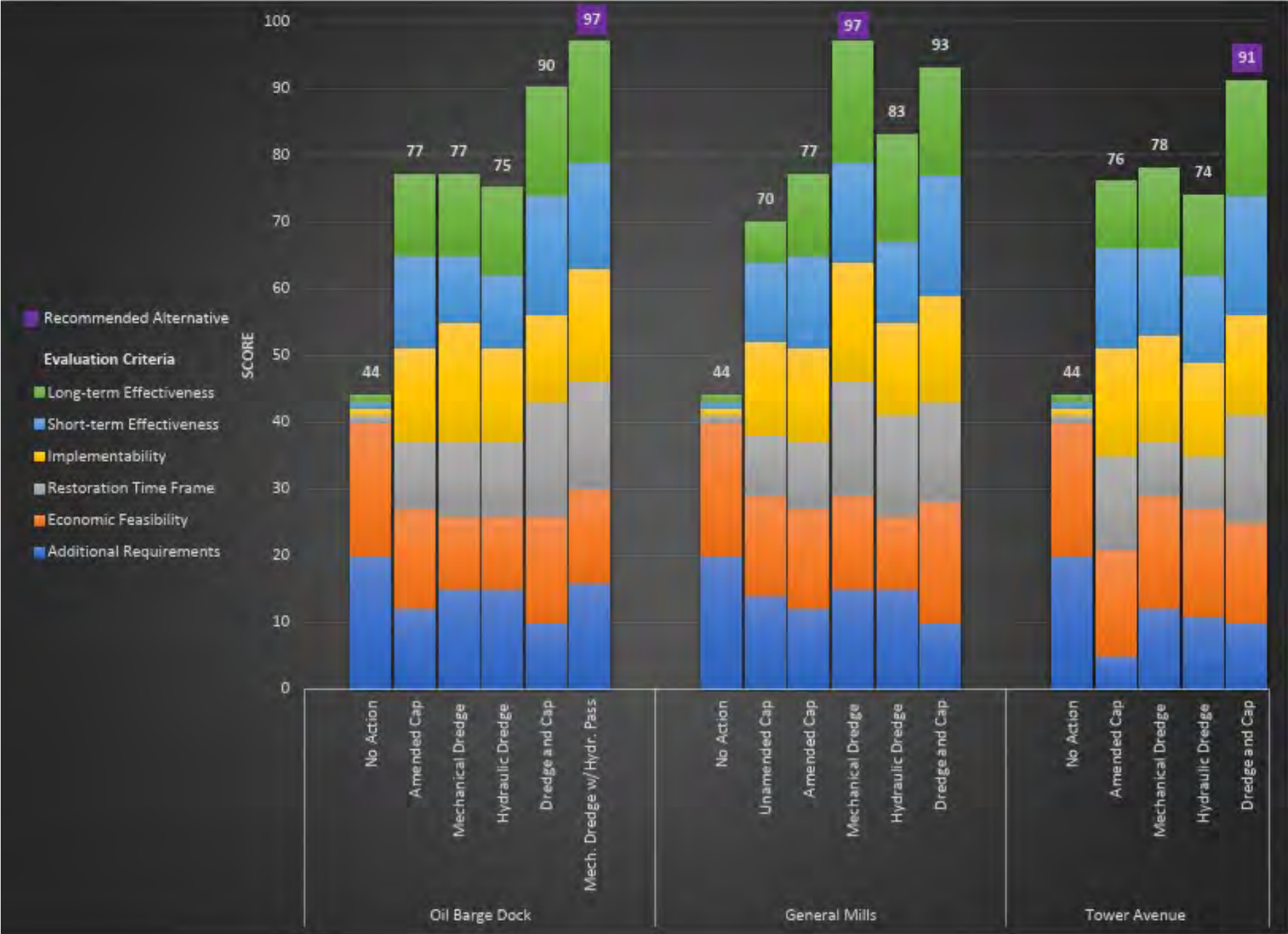
- If not well designed, contaminants may migrate over time.
- Waterway use is restricted
- Future liability for contamination






# Evaluating Remediation Options

Dredging of the Superior Slips is a targeted environmental remediation effort aimed at addressing various BUIs that affect water quality and ecosystem health.

Alternatives were evaluated against criteria including technical feasibility and financial feasibility.

The chart to the right shows how each alternative was chosen based on 6 evaluation criteria.



Slip	Recommended Alternative	Sediment Volume (Cubic Yards)	Number of Truck Loads <i>Each symbol represents 500 truck loads of sediment</i>	Estimated Cost
Oil Barge Dock	Mechanical Dredging followed by Hydraulic Dredging	19,731	1,900 	\$6,916,606
General Mills	Mechanical Dredging	67,571	5,200  	\$15,751,387
Tower Avenue	Mechanical Dredging & Capping	102,235	7,900  	\$21,650,357
<b>Total:</b>		<b>189,537</b>		<b>\$44,318,350</b>

## Proposed Remedies

Upon analyzing and evaluating various remediation options, **mechanical dredging** was selected as the main remedy for all three slips.

This achieves the goal of removing the maximum amount of contamination possible while limiting its spread.

Further precautions will also be put in place to minimize the mobility of suspended sediment outside of the project area.

# How much sediment is being dredged?

The clean-up of the three slips will remove an estimated 189,537 cubic yards of sediment from the project area. That's 145,000 Olympic-sized swimming pools!

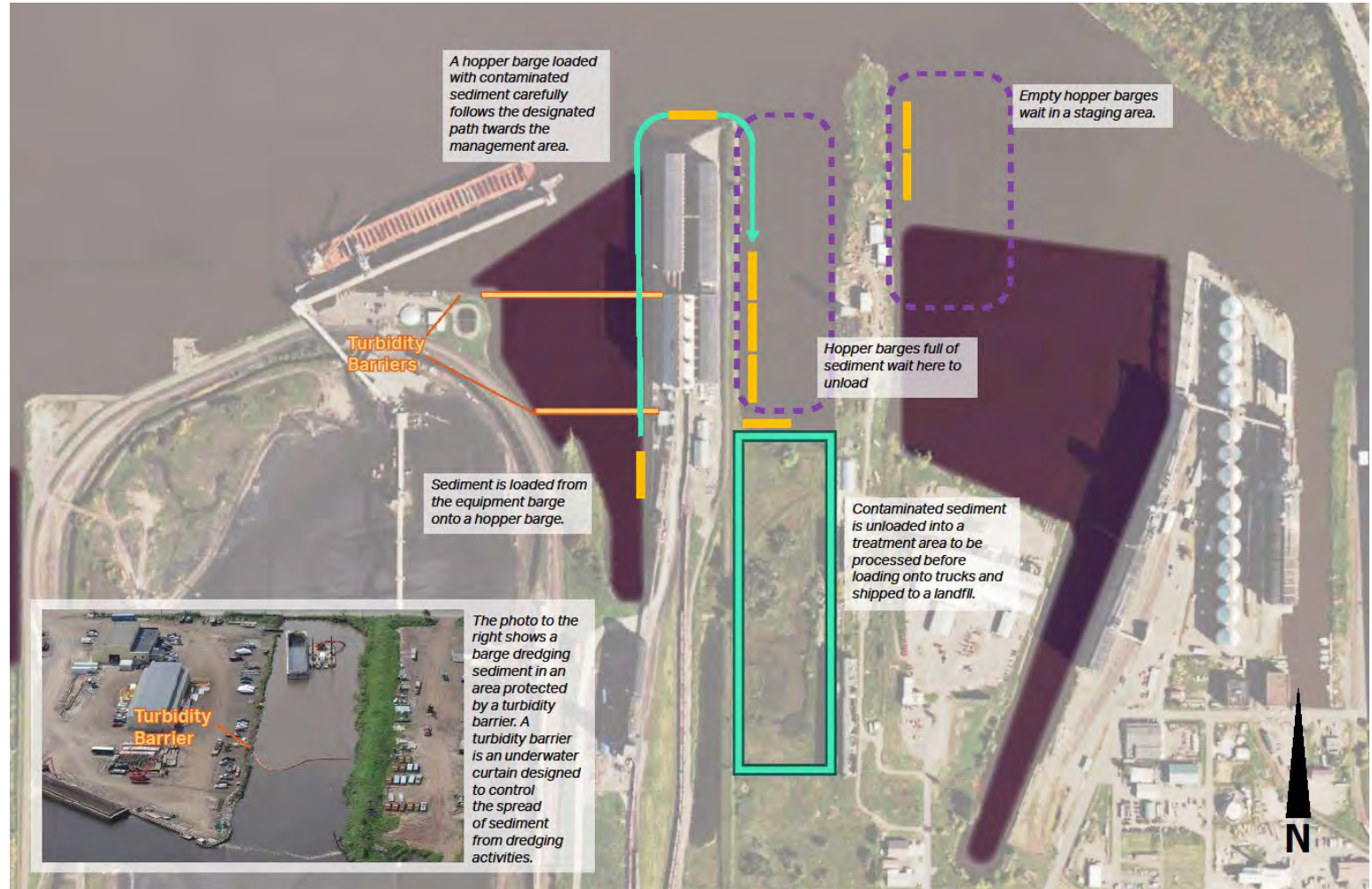
# How could the work be done?

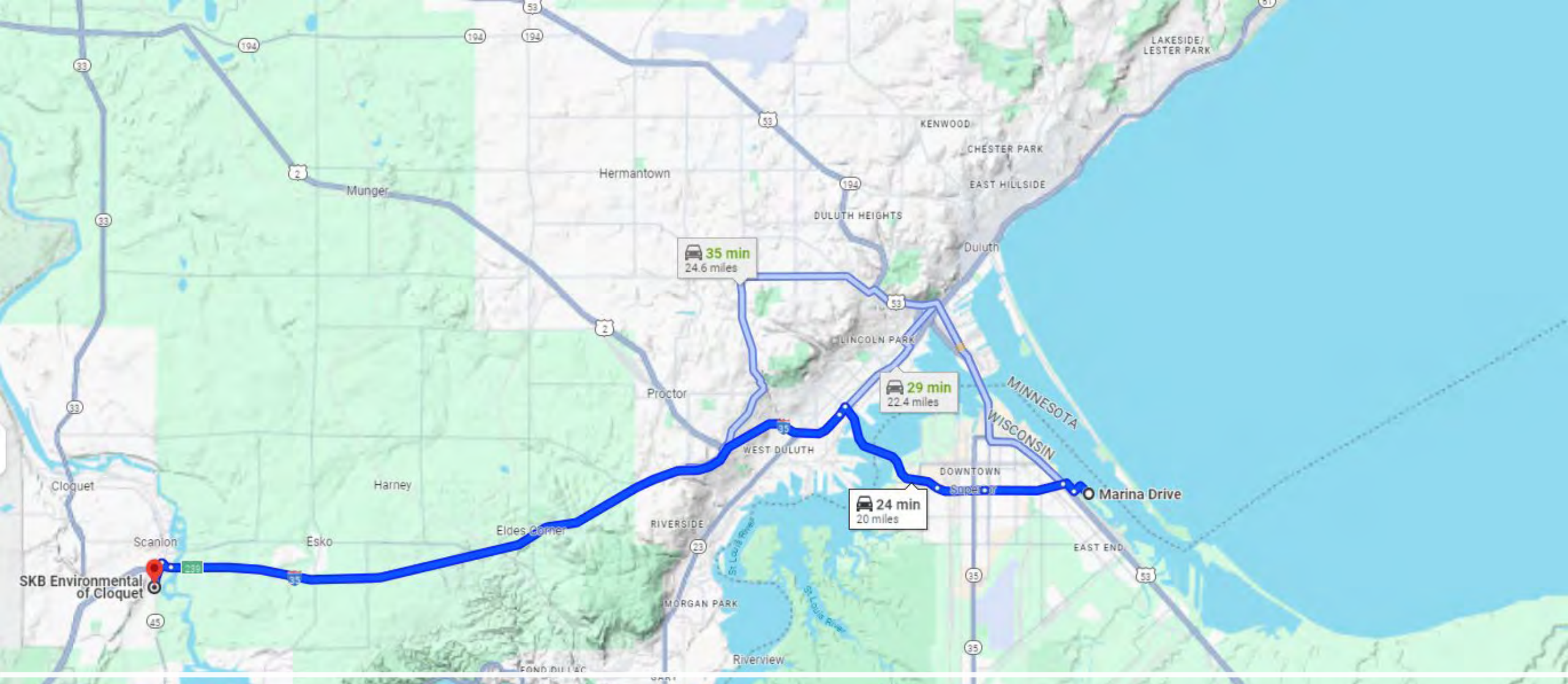
Contaminated sediment will be dried and stabilized.

A sediment management area may be located between the Tower Avenue and General Mills Slips to process and treat removed sediment - Exact locations to be confirmed.

Several options for treatment are being considered, contaminated sediment will be dried and stabilized prior to being taken to a landfill.

Barges of dredged material will travel to the Navigation Channel to offload contaminated sediment into the management area.





# Potential Truck Route



# PROJECT OUTCOMES





# Improved Water Quality

The remediation process will reduce pollutants affecting fish and wildlife consumption but also revitalizes the benthic layer, improving habitats and promoting biodiversity. By removing restrictions on dredging contaminated sediments, restrictions will be lifted and the risk of harmful substance exposure will diminish resulting in cleaner water and enhanced public health. Together, through state and local collaboration and public involvement, balance to aquatic ecosystems will be restored.

## Addresses impaired uses

## Progress on three management actions for AOC delisting

## Investment in waterfront



General Mills slip early 1900's



General Mills slip 2022

# What's next for the Superior Slips?



Ongoing  
Project partner recruitment



2024  
Preliminary design Investigations



2024 to 2025  
Remedy selection and design



2026 to 2027  
Remedial construction (estimated)



2028 & Beyond  
Operation and maintenance of any engineering controls  
(e.g. caps)

# We want to hear from you!

How to comment (Until - June 7, 2024):

Complete the questionnaire

<https://dnr.wisconsin.gov/topic/GreatLakes/SuperiorSediment>

Email us

[DNRRRSuperiorSlips@wisconsin.gov](mailto:DNRRRSuperiorSlips@wisconsin.gov)

Or both 😊



# CONNECT WITH US

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## Superior Slips

[DNRRRSuperiorSlips@wisconsin.gov](mailto:DNRRRSuperiorSlips@wisconsin.gov)



@WIDNR



@WI\_DNR



/WIDNRTV



"WILD WISCONSIN:  
OFF THE RECORD"

## **Attachment 6 – Public Meeting Minutes**

# Minutes

<b>Meeting name</b> Superior Slips	<b>Subject</b> Virtual Public Meeting Summary	<b>Study Team Attendees</b> Joe Graham - WDNR Kim Elias – AECOM Nathan Guequierre – AECOM Devin Kamperschroer - AECOM
<b>Meeting date</b> Tuesday, April 11, 2024	<b>Time</b> 5pm - 6pm	
<b>Location</b> Zoom	<b>Project name</b> GLRI Superior Slips	

**Meeting purpose:** To introduce the study, purpose, and need, and remediation options, and listen and gather stakeholder input.

**Attendees included:** Residents, businesses, local and elected officials and others

The Wisconsin Department of Natural Resources hosted a virtual public involvement meeting to provide residents, businesses, local and elected officials and other stakeholders with information on the Superior Slips remediation feasibility study as they continue to advance remediation of environmental contamination in industrial slips in the Port of Superior. This was held on the Thursday 11<sup>th</sup> of April 2024, 42 participants logged in. These consisted of government officials, residents, property owners and businesses.

AECOM welcomed the participants, asked them to add their emails to the chat; Joe Graham provided a presentation outlining the project parameters, purpose and need, context, investigations, remediation options, recommend actions.

Ref	Item
01	<p>Question 1: What is the EPA funding mechanism?</p> <p>Answer: Great Lakes Legacy Act, a voluntary program that offers a cost share of non-federal sponsor match to match federal dollars for sediment remediation in an Area of Concern. Additional meetings with some of the potential project partners will be held specifically on this topic soon.</p>
02	<p>Question 2: Is the ROAR available?</p> <p>Answer: Yes, the Remedial Action Options Report for each of the slips is available on the Bureau of Remediation and Redevelopment Program Tracking Systems website.</p>
03	<p>Question 3: Are there legal means to force landowners to participate?</p> <p>Answer: Prefer to take voluntary partners. DNR has regulatory authority, but we'd like to talk to reluctant landowners early rather than later.</p>
04	<p>Question 4: Will Blatnik Bridge reconstruction lead to conflicts with remedial action timeline?</p> <p>Answer: Tower Ave site is close; it's a federal waterway and navigable channel so has to remain open.</p>
05	<p>Question 5: What local community impacts do we anticipate?</p> <p>Answer: Impacts include increased truck and marine traffic. Fortunately, these slips are in an industrial setting with no residential sites close by. It is essentially a maritime use area with direct access to highways designed for truck traffic and there is no work within residential neighborhoods. Impacts should be minimal.</p>
06	<p>Question 6: What does being a "partner" mean?</p> <p>Answer: Different opportunities for partnerships available. Some agencies are needed to do the heavy lifting, the funding while other entities could help with community outreach, providing trucking, providing access to allow the work to happen.</p>
07	<p>Question 7: Any specific areas for input for comment on the RAP?</p> <p>Answer: Welcome comments on everything. Take the survey.</p>
08	<p>Question 8: Any opportunities to limit the amount of material going to landfills?</p> <p>Answer: There can be opportunities, but it is not easy depending on the characteristics of the material and cannot always be reused. Much of the material is very soft and silty, it is possible to treat the sediment to make it more useable, but it adds to the cost. Alternative options to landfill disposal are being investigated in the pre-design phase of the project.</p>

<b>Ref</b>	<b>Item</b>
09	<p>Question 9: Is restoration or habitat improvements a part of the remedial designs?</p> <p>Answer: These are industrial slips and not a primary focus for habitat restoration. Will include a sand cover layer to rehabilitate benthic habitat.</p>
10	<p>Question 10: When will landowners be contacted for initial discussion?</p> <p>Answer: Sometime in May, then regularly thereafter, details being worked out.</p>
11	<p>Question 11: If sufficient grant funds are not obtained to complete the project, how would a landowner's assessed share of cleanup costs be determined?</p> <p>Answer: Difficult to predict as without sufficient funding, we can't enter into an agreement with EPA. DNR is Looking to fund this as a single project with pooled resources. The Great Lakes Restoration Initiative and the Great Lakes Legacy Act provide a unique opportunity to get partners together with funding currently available. Feel confident regarding securing sufficient funding.</p>
12	<p>Question 12: Go through funding options.</p> <p>Answer: Great Lakes Legacy Act is a minimum 50% funding. We have to get enough to cover remainder of cost share after federal funding which could range from 50% to 35% cost share. \$44M is the mid range of the current cost estimate for all the options. The top end is \$62M. This is still a feasibility cost estimate with some uncertainty. If it is a \$44M project DNR would need about \$15M in non-federal funding if we are awarded a 35% cost share. Won't know until the design is completed and started the negotiations with the EPA. There is also state funding for this project, and WDNR can bond for sediment removal as well. DNR trying to matching their funding with other funds.</p>

## **Attachment 7 - Online Survey Summary**



## **Superior Slips Survey Response Overview**

### **General findings**

1. Four responses, all supporting the recommended clean up activities
2. Awareness of regional efforts to improve water quality in the AOC was high or somewhat high prior to attending the virtual public meeting or visiting the website. After attending or visiting, the awareness was felt to be very high.
3. Popular uses of the St Louis River estuary include fishing, swimming, and walking or running..
4. Pollution abatement is considered the most important focus of clean up efforts, with fishery restoration also important.
5. Preferred means of communication: 1 – SLRA newsletter; 2 – newspaper articles; 3 – WDNR emails

### **Open ended responses**

#### **What do you like about the recommended clean up activities?**

- They're great!
- I like that it is happening! I want clean water to be active on/in. To swim, fish, and just enjoy the water. I like that information is being shared on what is happening. I don't like being in the dark about things going on in my community that can affect my health and the environment.
- Removal and landfilling seems like the most responsible long-term solution to deal with this problem.
- Clean up decades of abuse to the harbor including the untreated storm water system runoff from the city.

#### **Is there anything you'd like to tell us about the recommended activities for cleaning up the contaminated sediment in the Superior Slips?**

- Need more fish.
- It would be nice if some of the companies that contaminated these spaces were held more accountable or helped pay for more of the clean up. From my understanding the bulk of the cost is being shouldered by the EPA.
- I'd like to see current industry on the waterfront make a contribution to the cost of cleanup. Even if the monetary impact is only symbolic I think it would still send a good message.

# SUPERIOR SLIPS SEDIMENT REMEDIATION PROJECT

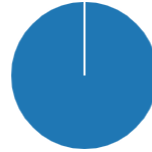
4 Responses

06:21 Average time to complete

Closed Status

1. Do you support the recommended activities for cleaning up contaminated sediment in the Superior Slips?

● Yes 4  
● No 0



2. What do you like about the recommended clean up activities?

4 Responses

Latest Responses

*"Clean up decades of abuse to the harbor including the untreated storm water..."*  
*"Removal and landfilling seems like the most responsible long-term solution ..."*  
*"I like that it is happening! I want clean water to be active on/in. To swim, fis..."*

3. What activities would you prefer to address contaminated sediment in the Superior Slips?

0 Responses

Latest Responses

4. Is there anything you'd like to tell us about the recommended activities for cleaning up the contaminated sediment in the Superior Slips?

3 Responses

Latest Responses

*"I'd like to see current industry on the waterfront make a contribution to the ..."*  
*"It would be nice if some of the companies that contaminated these spaces w..."*

5. Before you visited our website or attended our virtual public meeting, how aware were you of regional efforts to improve water quality in the St Louis River Area of Concern?

● Very aware 2  
● Somewhat aware 2  
● Not very aware 0  
● Not aware at all 0  
● What is the St Louis River Area ... 0



6. Since visiting the website or attending the virtual public meeting, do you have a better understanding of the issues affecting water quality in our region?

● Yes 4  
● Not really 0

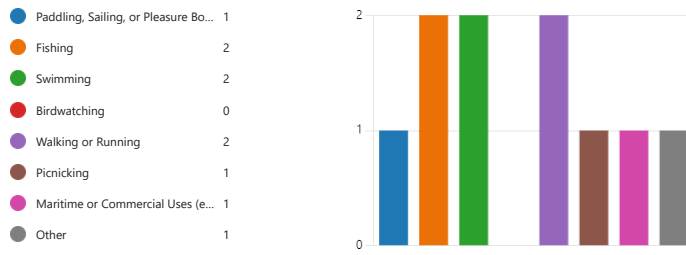


7. What could we have done better to help your understanding?

0 Responses

Latest Responses

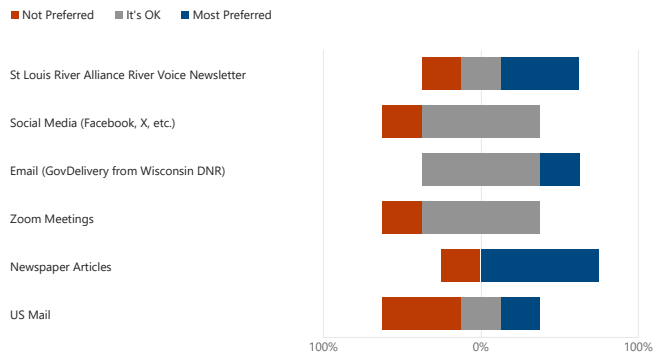
8. How do you use the St Louis River, the estuary, and Lake Superior?



9. What is the most important thing we should be doing to improve the St Louis River?



10. How do you prefer to get future updates about the Superior Slips sediment clean up? Please rank each option.



11. Do you live or work in Wisconsin?



12. About how far do you live or work from the Superior Slips?

