



Project Proposal Feasibility Study and Preliminary Design for the Superior Slips, Superior, WI

Online Presentation to GLLA Technical Review Committee (TRC)

Joe Graham
21 May 2021

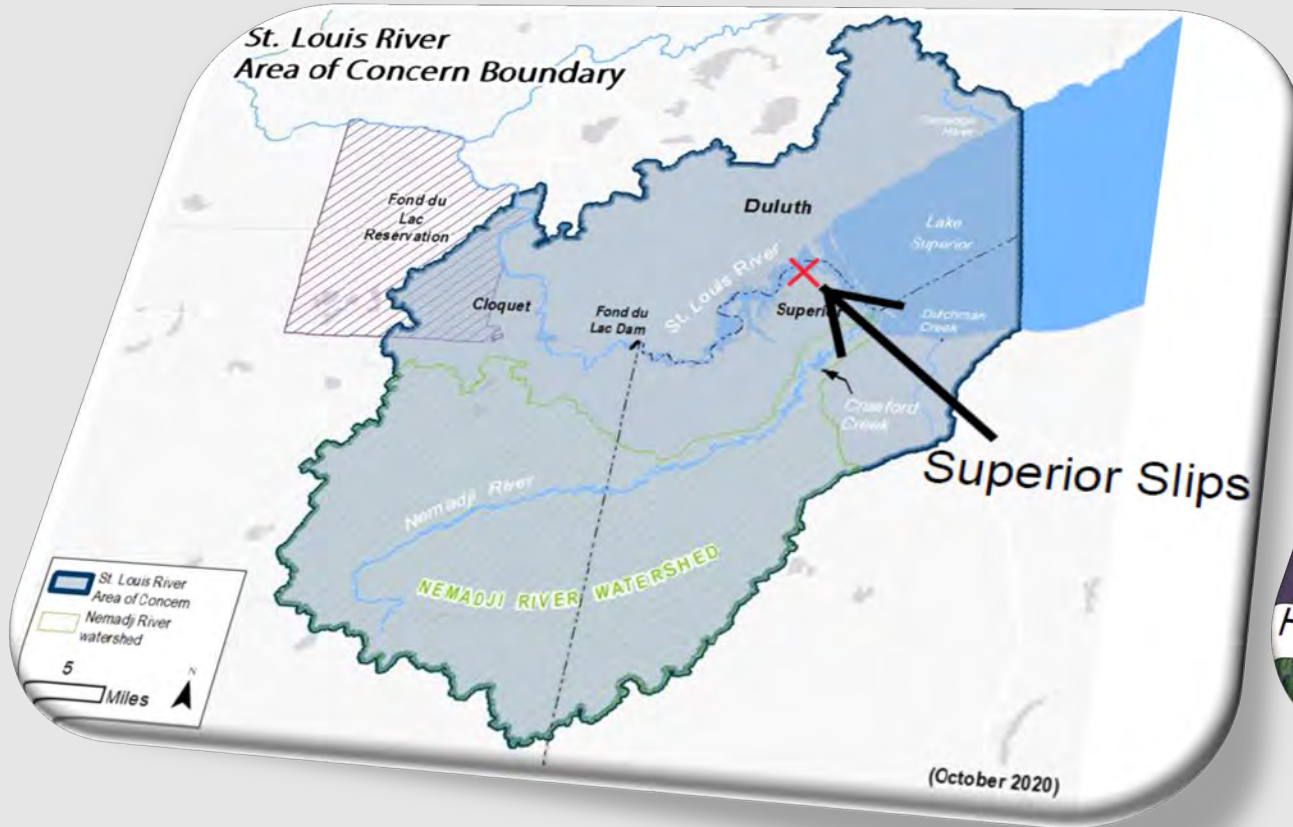
Opening & Introductions

- Wisconsin DNR
- EPA
- USACE
- NOAA
- USFWS
- Others

Overview

- Site Description
- Justification
- Proposed Project
- Impact Assessment
- Partner Recruitment
- Timeline
- Budget
- Questions & Discussion
- Bonus Slide

Site Description



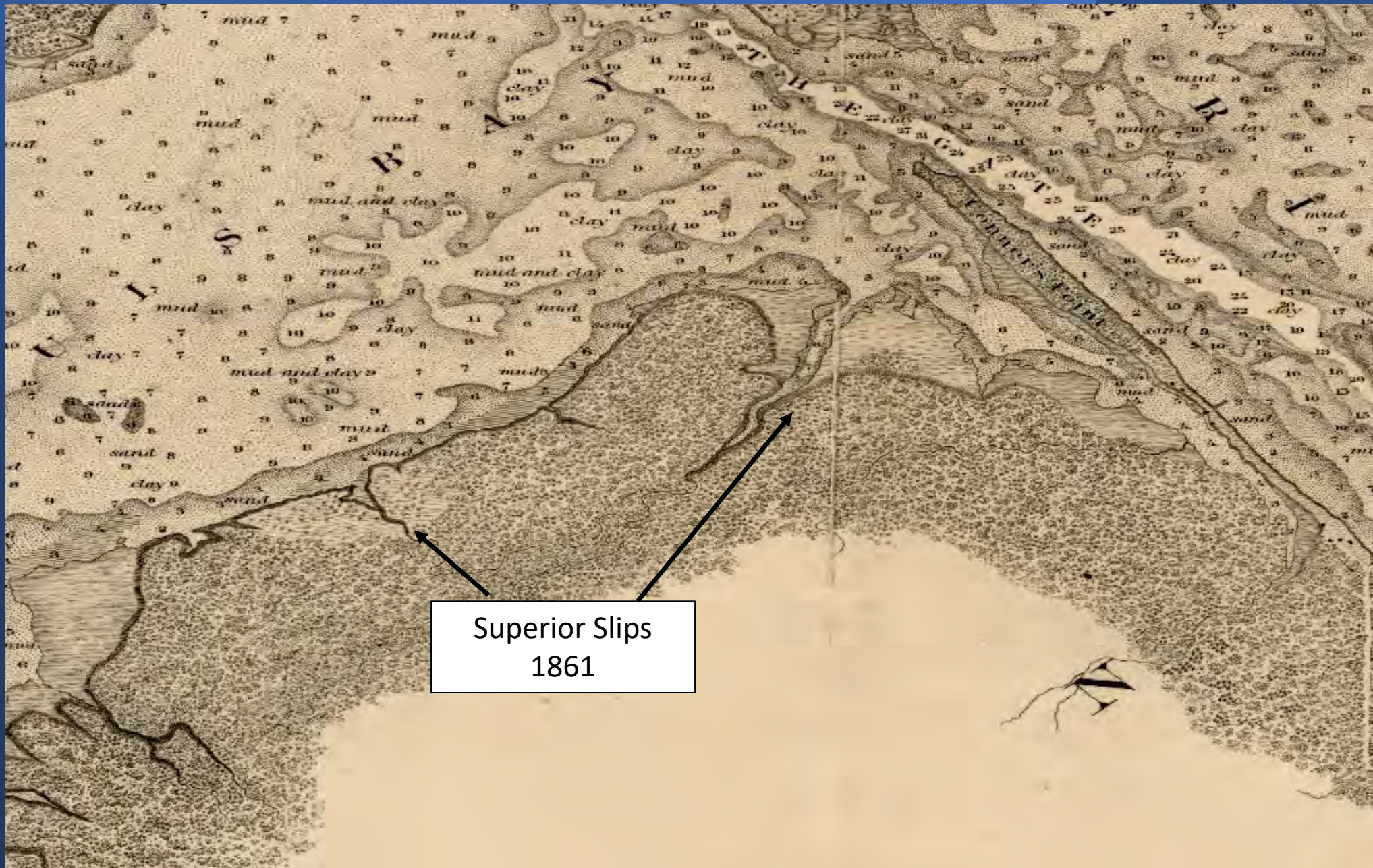
Source Identification – Complex History of Land Use



- 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



NEXT STEP
Potential PRPs
&
Project Partners



Superior Slips
1861

WEST SUPERIOR

WISCONSIN

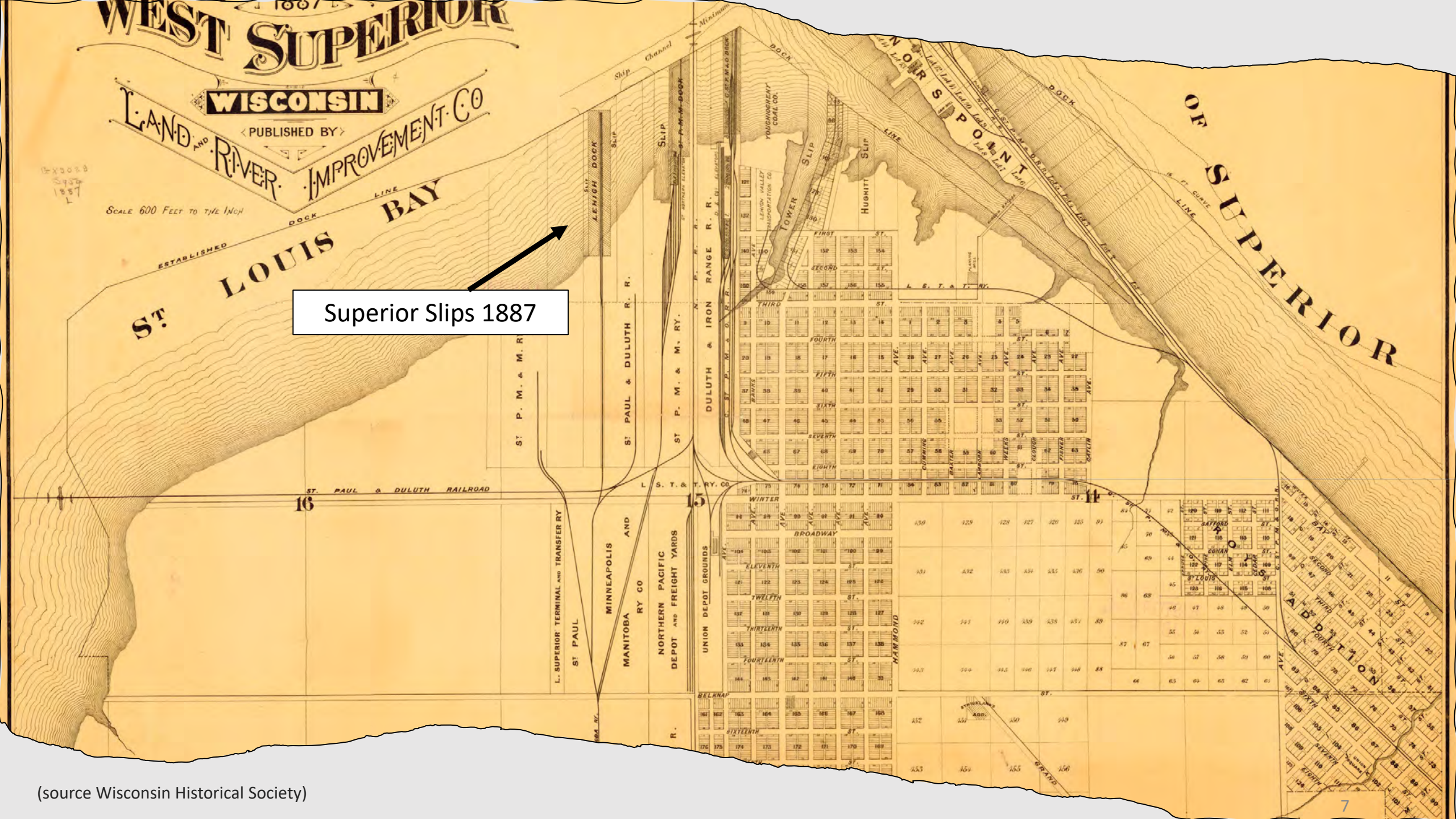
PUBLISHED BY

LAND AND RIVER IMPROVEMENT CO

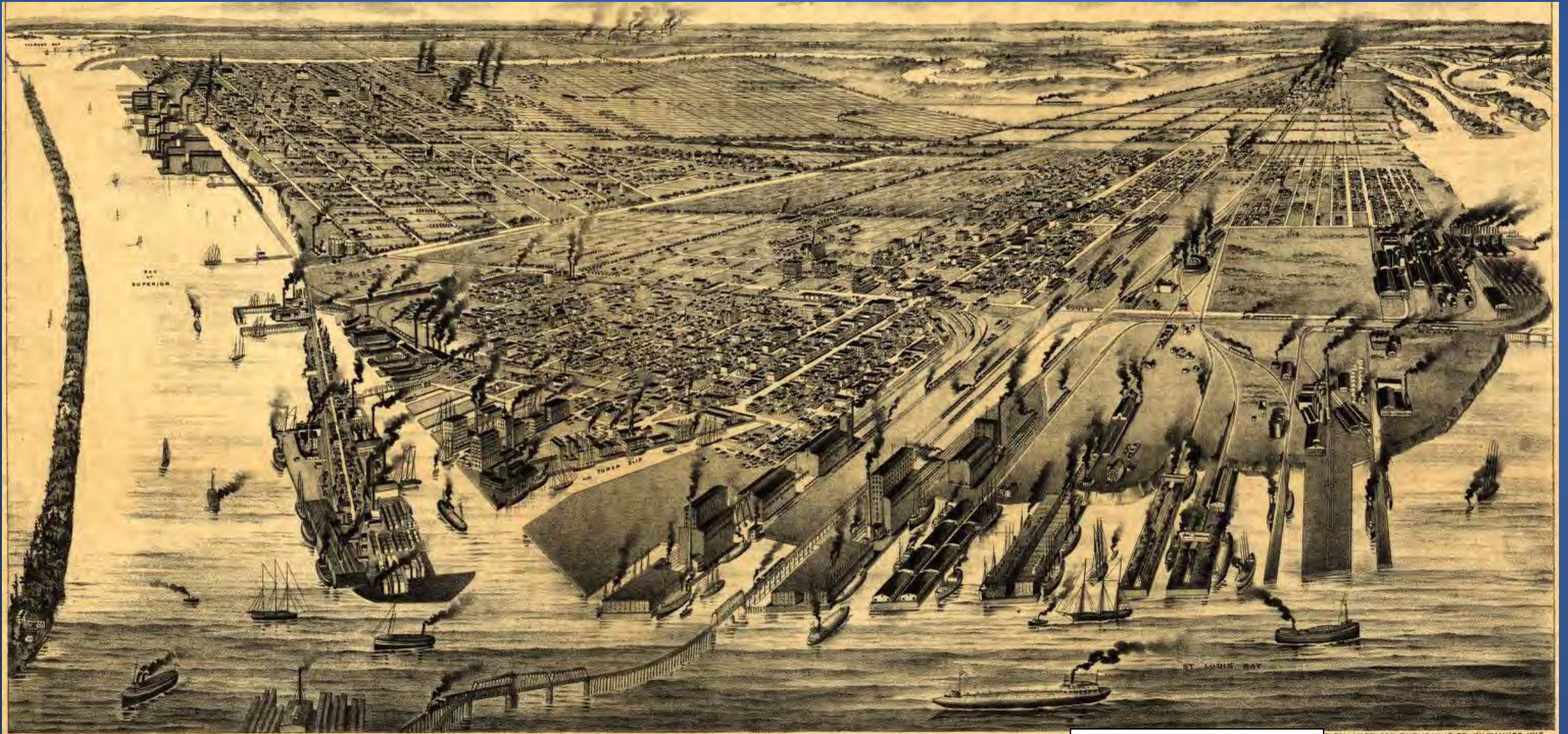
SCALE 600 FEET TO THE INCH

ST LOUIS BAY

Superior Slips 1887



(source Wisconsin Historical Society)



91-691500

PERSPECTIVE MAP OF THE CITY OF
SUPERIOR, WIS.

Superior Slips
1893

BY AMERICAN PUBLISHING CO. MILWAUKEE, WIS.

A3 1890 .A6

Superior Slips



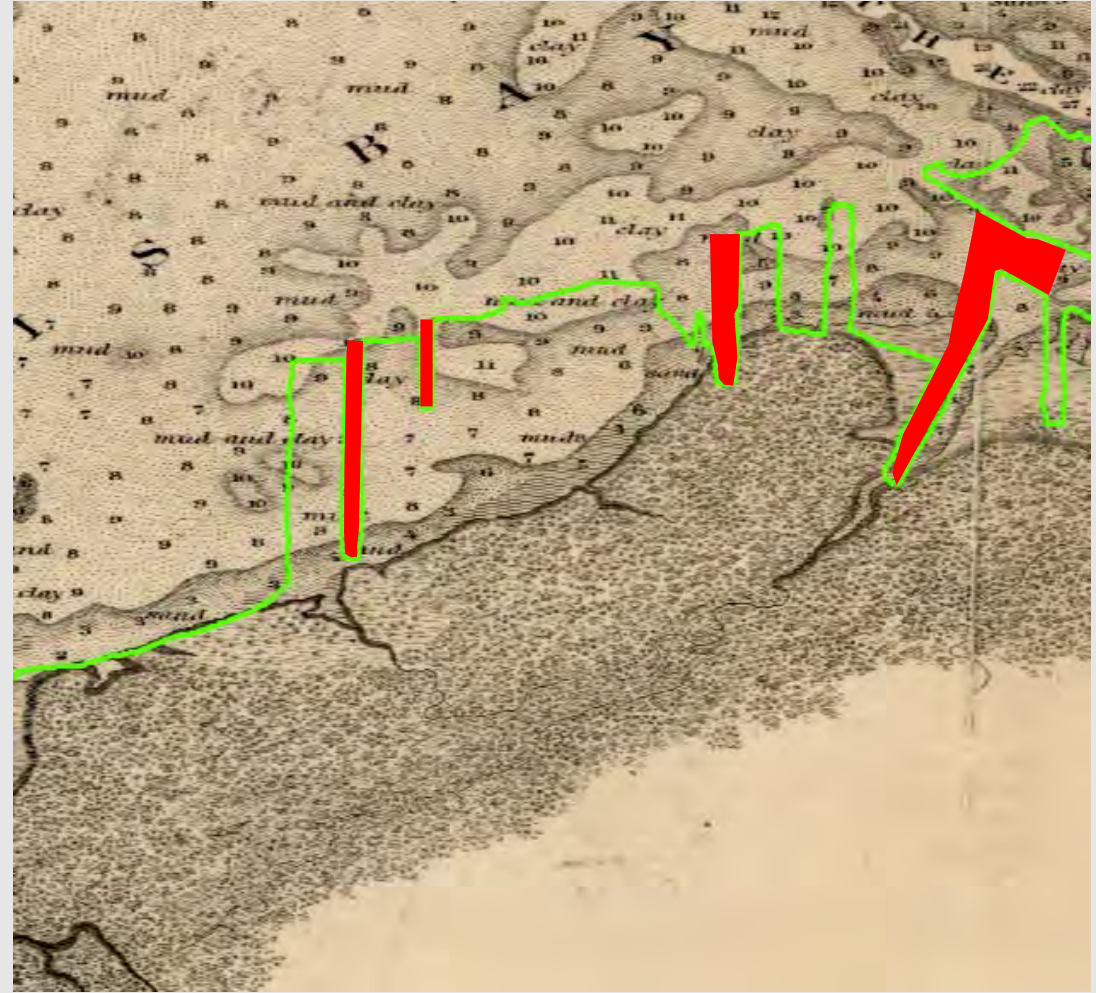
1913 Superior, WI

(source Wisconsin Historical Society)

2016 Shoreline



2016 Compared to 1861



Justification

- History of fossil fuel transportation and heavy industry
- Documented Impacts (chemical, physical, & biological)
- Contamination contributes directly or indirectly to beneficial use impairments (BUIs)
 - Restrictions on dredging
 - Fish Consumption Advisories
 - Degradation of Benthos
 - Body Contact Restrictions
 - Fish & Wildlife Habitat
- Priority AOC Management Actions



Sediment Characterization

- 2015 - GLNPO Sediment Sampling
 - Sediment Chemistry & limited toxicity
- 2018 – DNR Macroinvertebrate Assessment
- DNR Cooperative Agreement with EPA GLNPO
- 2020 Site Characterization led by DNR
 - DNR administered contracts for work
 - Joint Agencies Review & Approval of Deliverables (QAPP, FSP, etc.)
 - Bathymetric Surveys
 - Sub-bottom Profile & Dock-wall Surveys
 - Sediment Chemistry
 - Toxicity
 - Bio-accumulation (Dioxin, Mercury & Organotin)

Multiple Lines of Evidence

Slip	Sediment Chemistry	Benthic Toxicity	Bioaccumulation	Benthic Community	Dredging Disposal Restriction
Tower Avenue	PAHs – 240 ppm PCBs - 4 ppm Lead - 2,070 ppm Mercury - 11 ppm TBT - 64 ppb	YES	YES Organotin	POOR	Benzo(a)pyrene, PCBs, lead and mercury
General Mills	PAHs – 146 ppm Lead – 345 ppm PCBs – 0.7 ppm Mercury – 0.67 Dioxin – 54 ppt TBT – 81 ppb	YES	YES Organotin	POOR	Benzo(a)pyrene and Dioxin
Oil Barge Dock	VOCs – 1.3 to 42 x PEC Xylene – 2.1 ppm PAHs – 93 ppm Arsenic – 132 ppm Lead – 1,610 ppm	YES	NO	POOR	Benzo(a)pyrene and Lead
Hallet Dock 8/ C. Reiss Coal	Nickel – 50 ppm PAHs – 22 ppm Lead – 106 ppm	YES	NO	POOR	NO

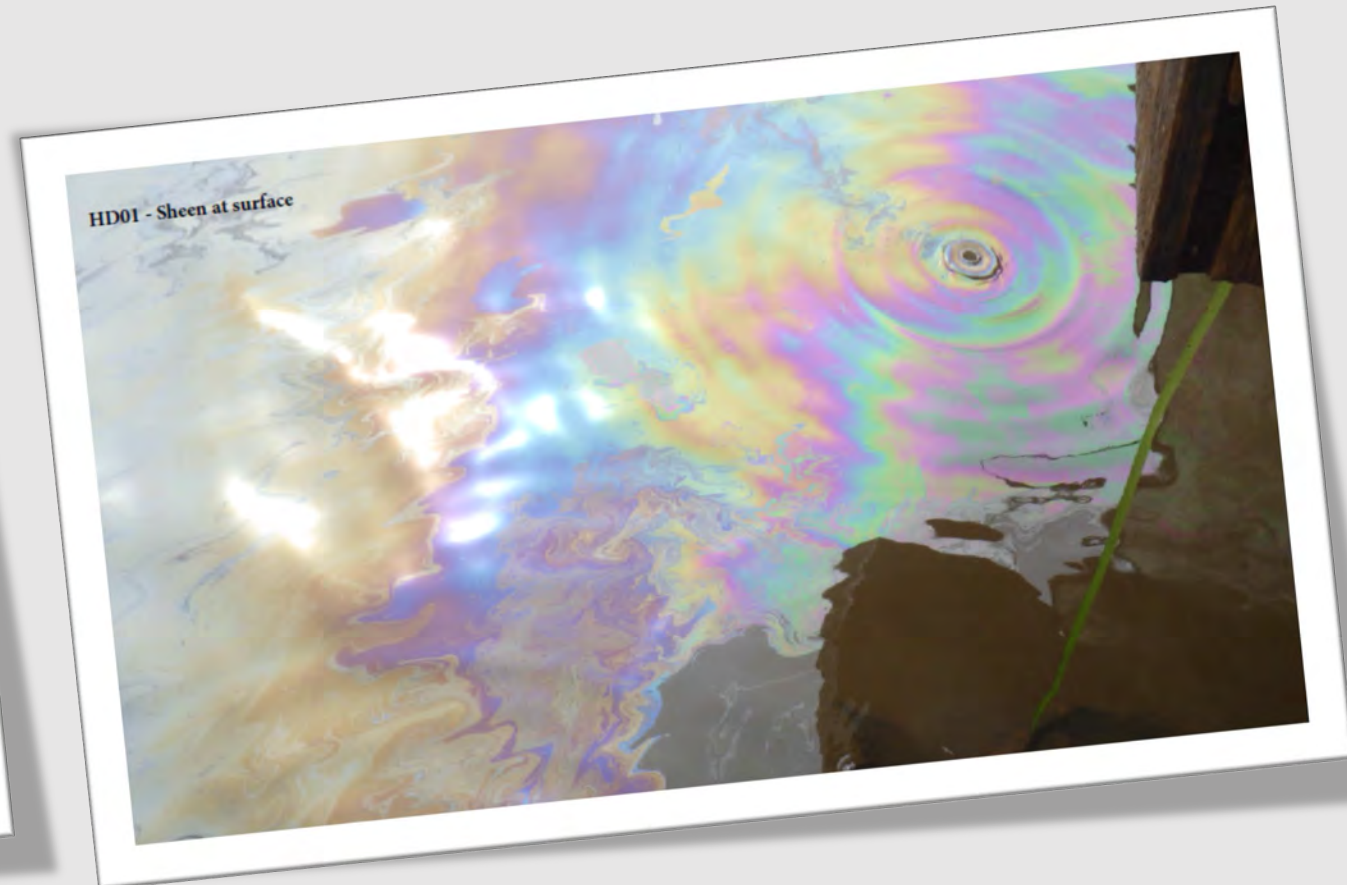
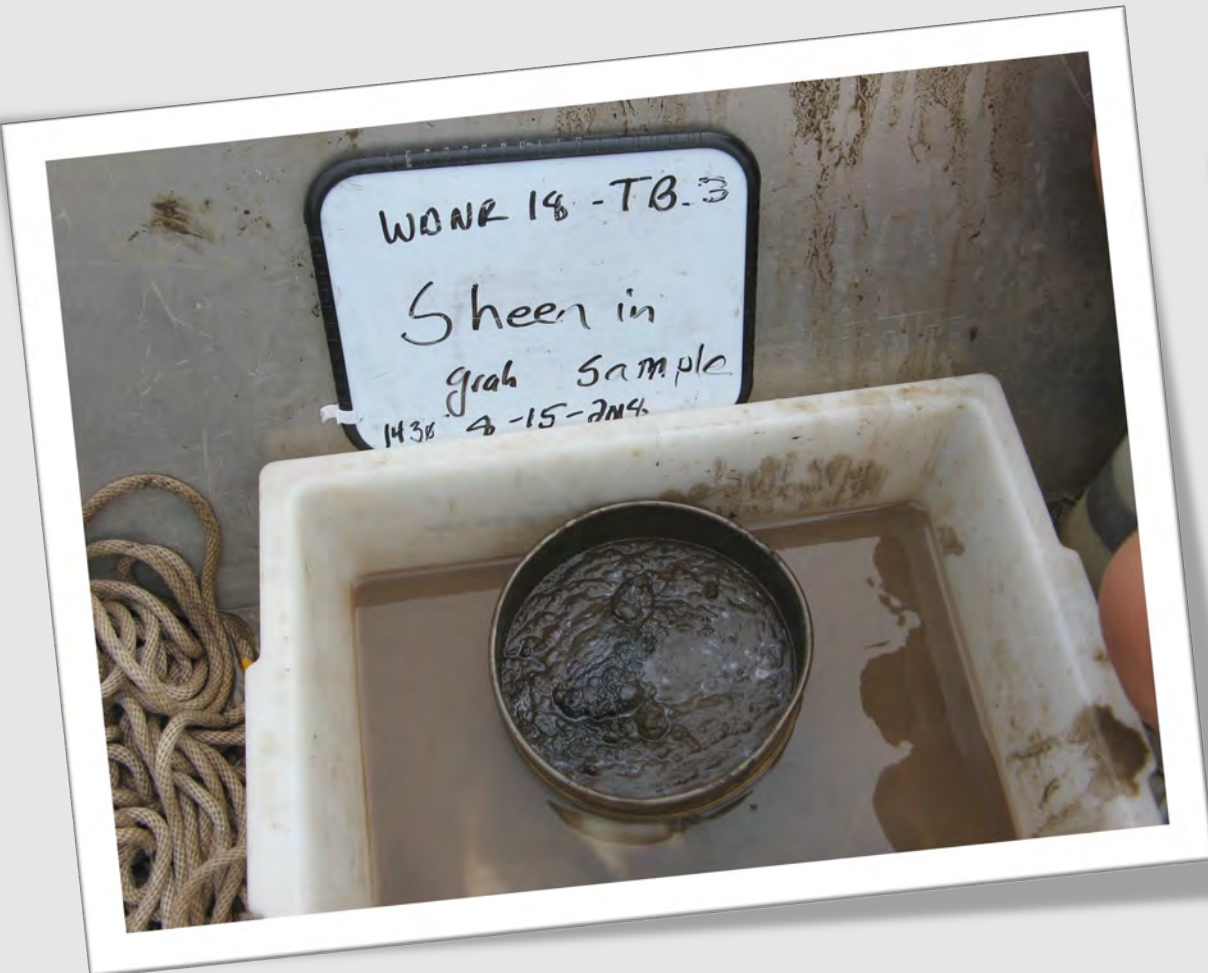
Sheen and odor also noted

Red is not good.

Orange levels above MEC < PEC

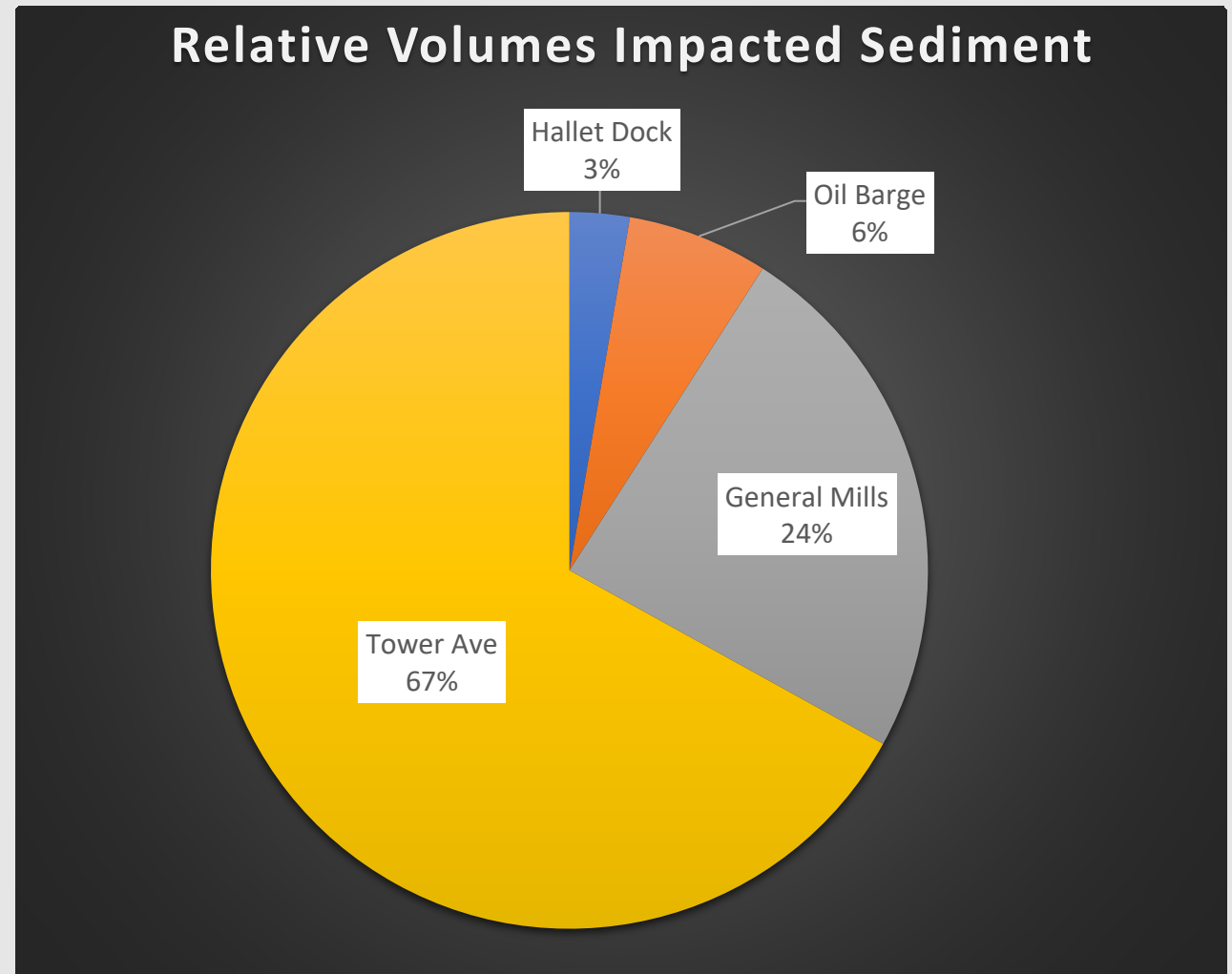
Petroleum Handling and Storage Operations

Indications of Petroleum Impacts

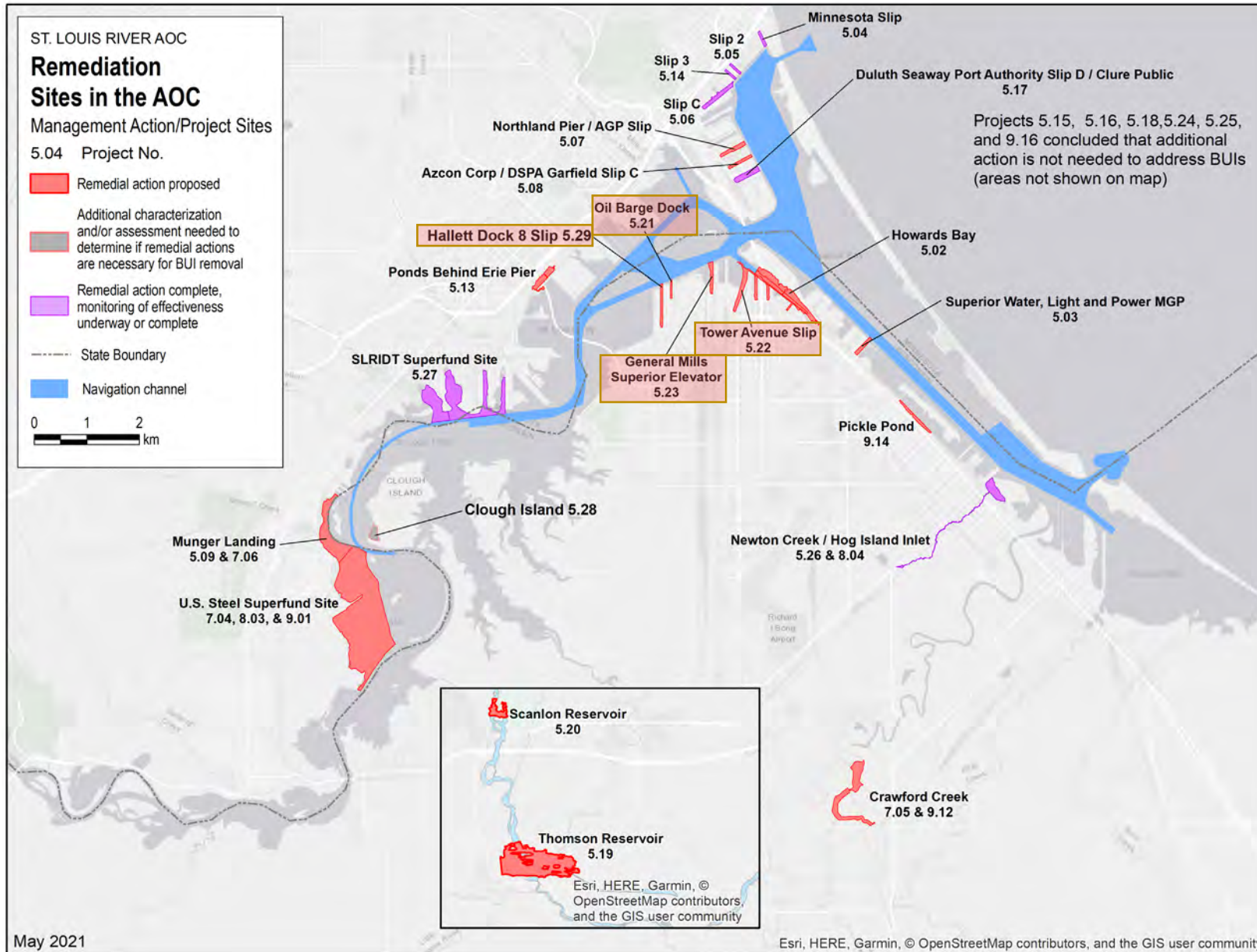


Comparison of Superior Slips

Slip	Acres	Maritime Use
Tower Avenue	17+	Yes
General Mills	7.4	Yes
Oil Barge Dock	2	No
Hallet Dock	8.4	Yes



Remediation Sites in the St. Louis River AOC Remedial Action Plan



Management Actions

- 5.22 - Tower Avenue
- 5.23 - General Mills
- 5.21 - Oil Barge Dock
- 5.29 - Hallett Dock 8 / C. Reiss Coal

SLRAOC Priorities

Proposed Project

- 1) Complete Feasibility Studies
 - a) Tower Avenue
 - b) General Mills
 - c) Oil Barge Dock
 - d) Hallet Dock 8 / C. Reiss Coal
- 2) Recruit Project Partners
- 3) Select Remedial Action(s)
- 4) Prepare Decision Document
- 5) Identify Data Gaps for Design
- 6) Complete Preliminary Design
 - a) Basis of Design Technical Memoranda



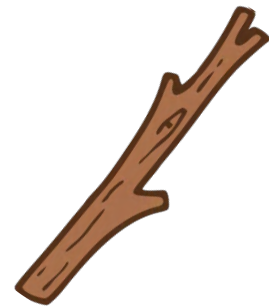
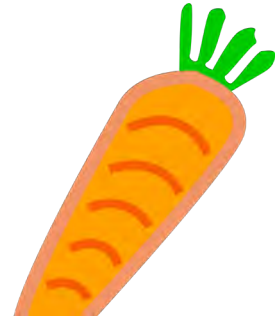
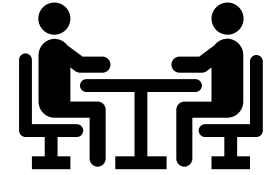
Impact Assessment



- Eventual Implementation of Remedial Action(s) will:
- Reduce or Eliminate Contaminant Concentration Mass, Mobility, Toxicity & Volume Impacting Human Health & the Environment
- Complete four priority management actions for AOC
- Address dredging restrictions in the Superior Slips and make progress toward the removal of other BUIs
- St. Louis River AOC – Delisting

Partner Recruitment

- City of Superior
- Port of Superior
- Riparian Landowners
- Potential Responsible Parties
- Responsible Parties



Timeline



Target Date	Milestone
Sept. 2021	Award contract and begin FS
Dec. 2021	Complete draft FS report(s)
Feb. 2022	Complete public participation and remedy selection
Mar. 2022	Issue final FS/remedial action option report(s)
May 2022	Draft preliminary design (PD)/basis of design memo(s)
Jun. 2022	Complete PD/basis of design memos
Jul. 2022	GLLA application for Phase II (design or design/remedial action)

Budget



Feasibility Study & Preliminary Design

\$1,500,000

35% Nonfederal cost share

\$525,000 State Funding

65% Federal Share

\$975,000 GLLA Support

Questions & Discussion





Bonus Slide

First bucket from cleanup dredging in Howards Bay

May 20, 2021

