



**There has been extensive sediment sampling and analysis in Howards Bay. Sampling was done in 2007, 2010, 2013, 2014, 2015, and 2016.** Over 500 data points were established at 160 sample locations, with thousands of individual results. Chemical levels in Howards Bay sediment are better known than most other dredging projects

## Project Benefits

- Clean up contamination in Howards Bay
- Maintain navigation depth in Howards Bay
- Dredge material beneficially reused
- Make use of federal funds for Great Lakes
- New recreation area at Wisconsin Point
- Improve cap at closed Wisconsin Point landfill
- Public-Private Partnership

### ADDED Benefits for the closed landfill on Wisconsin Point:

- Increased buffer from waste in the landfill
- Less leachate generation as the result of reduced infiltration from better drainage
- Lower transport of contamination from the landfill waste to surrounding areas
- Lower long-term costs associated with maintenance of the landfill cap
- Helps meet overall match requirements to make the project possible
- Eliminates the need for other City contributions such as cash or additional in-kind services

### For more information:

**Darrienne McNamara**  
City of Superior

715.395.7506 | [mcnamarad@ci.superior.wi.us](mailto:mcnamarad@ci.superior.wi.us)

**Joe Graham**  
Wisconsin DNR

715.635.4015 | [joseph.graham@wisconsin.gov](mailto:joseph.graham@wisconsin.gov)



# Howards Bay Remediation Project

Superior, WI



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## OVERVIEW

Howards Bay is the single largest contaminated site on the Wisconsin side of the St. Louis River *Area of Concern*, which is an area designated by the U.S. and Canada as being degraded by human activities. The contamination comes from historic practices in the harbor, storm water runoff and other sources. Due to the contaminated sediment underwater, dredging has been restricted in Howards Bay, making it difficult for large vessels to access the shipyards. The same pollutants also pose a threat for the ecosystem. They can enter the bottom of the food chain and become concentrated in species higher up the chain.

The remediation project combines the resources of federal, state, local and private partners to clean up Howards Bay.

The US Army Corps of Engineers is tasked with maintaining the shipping channel in the St. Louis River, including portions of Howards Bay.

However dredging has been restricted due to contaminated sediment. This project pulls together funding from multiple sources to carry out dredging in the shipping channel and clean up contaminated sediment at one time. The US Army Corps will serve as the main contractor for the overall project. However, major funding for the cleanup portion is being provided by the US EPA through the Great Lakes Restoration Initiative and Great Lakes Legacy Act. Fraser Shipyards and the Wisconsin DNR are also major funders for the cleanup project. The City of Superior is providing in-kind support by providing a place for excavated dredge material.

## A TEAM EFFORT

## FEASIBILITY STUDY

A Focused Feasibility Study (FFS) was completed in July 2015 by Arcadis, a contractor for the US Army Corps of Engineers, in collaboration with project partners. The FFS evaluated data from Howards Bay including potential sources of contamination. It established cleanup goals and identified which areas needed cleanup, and screened possible cleanup technologies. Evaluation criteria were developed for selecting a cleanup option that best met the project goals. The preferred option includes a combination of dredging and enhanced natural recovery. The next step for the project is the 65% Design Document Report which provides more detail about implementation, slated for 2018.

### Which contaminants are there?

**Lead:** paint from ships, leaded gasoline

Polycyclic Aromatic Hydrocarbons  
**(PAH's):** urban runoff, spills, treated wood

**Mercury:** industrial uses,  
coal combustion

**Tributyltin:** paint from ships

## WHERE WILL IT GO?

Multiple options were evaluated for managing dredged material. Options included beneficial use (i.e. reusing for another project), disposal, and combinations of the two.

Factors to consider included: physical and chemical qualities of the material, costs for each option, capacity at each site, ability to implement, and level of in-kind match provided in order to secure federal funds needed.

Using those criteria, the following locations were selected:  
Shipping channel material: Erie Pier Processing and Reuse Facility  
Cleanup project material: Wisconsin Point Closed Landfill