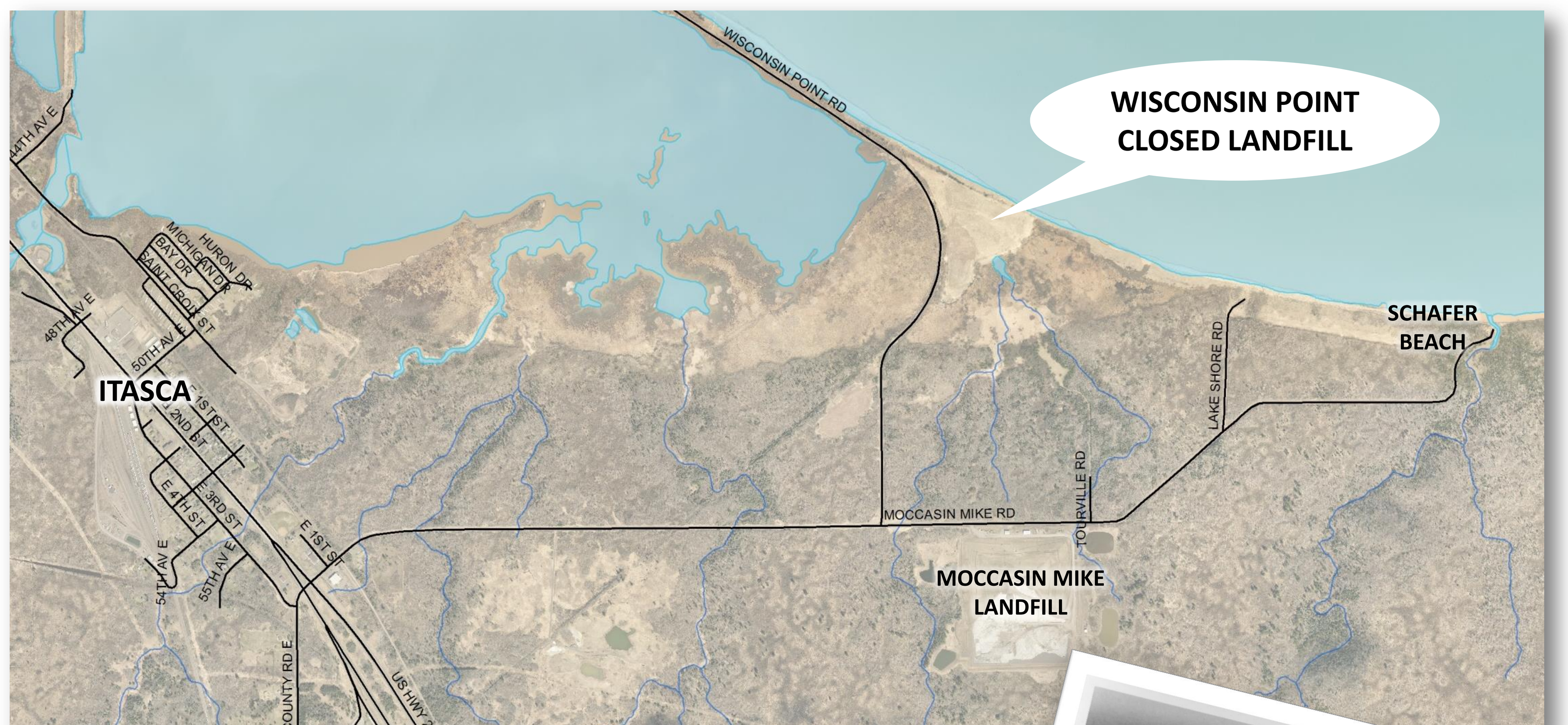
How does this benefit Wisconsin Point?

Improve Cap at Old Landfill

Material dredged from Howards Bay would be placed over the cap on the closed landfill on Wisconsin Point. This would improve the existing cap which in turn protects the surrounding environment.

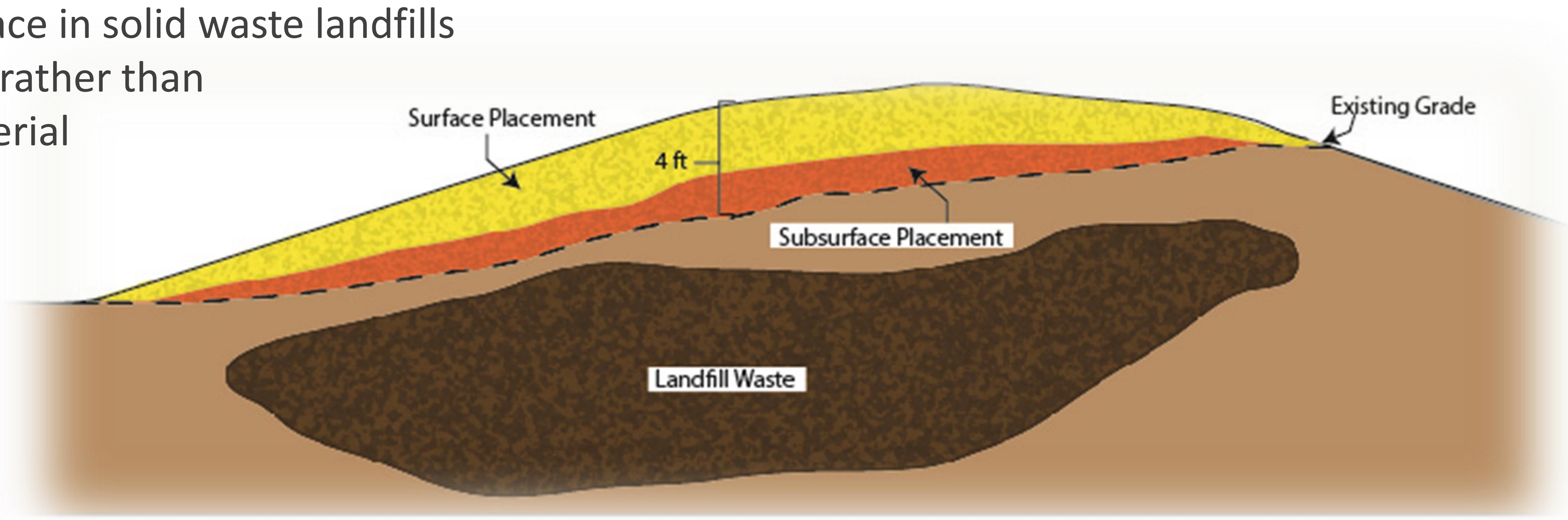


TOP PHOTO
Wisconsin Point landfill, 1976.
Great Lakes Coastal Oblique Viewer
http://floodatlas.org/wcmp/obliqueviewer/

BOTTOM PHOTO
Wisconsin Point landfill, 2009.
https://www.bing.com/maps

Benefits include:

- Increased physical buffer between surface and waste
- Increased cap thickness means less chance of exposed waste (which has occurred here before)
- Eliminate thin spots and depressions caused by decades of waste settling
- Less transport of landfill contaminants into surrounding waters. Better slopes and drainage mean less surface water infiltrating the landfill, which can leak out and transport contaminants into surrounding waters.
- Improving the cap now will avoid costly rehabilitation in the future. Note: problem areas on the cap had to be repaired with material from off site in 2012, which cost the City approx. $60,000.
- Preserve space in solid waste landfills for garbage rather than dredge material



ABOVE
Cross-section of Wisconsin Point landfill showing existing surface contours (bottom line) and proposed contours (top line) after placement of the dredge material. The material in the 2-foot surface layer (yellow) would have to meet stricter standards than that in the subsurface layer below.
Arcadis, 2016.

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New Recreational Area

Upon completion of the dredge project, the closed landfill would be converted into a new recreation area as proposed in the Wisconsin Point Area Management Plan. It would be up to the community to determine how the site is designed. The US EPA, Wisconsin DNR and Fraser Shipyard will fund these recreational improvements. Because of the buried waste and the limitations related to the dredge material, some uses would be restricted.

Recreational development suggested in the Wisconsin Point Area Management Plan:

- ✓ Increased footpath access
- ✓ Development of unpaved paths or trails
- ✓ Development of pet-friendly activities such as a fenced, off-lead play area
- ✓ Improving public parking and access to the site
- ✓ Creation of an access linkage between parking lot 1 and the closed landfill site
- ✓ Development of signage relative to access and use limitations

These are some ideas, but how this looks is up to you!

How does this benefit Superior?

Cleanup Riverfront

Howards Bay is Wisconsin's **largest** contaminated site within the St. Louis River Area of Concern[1]. Contamination mostly came from historic practices in the harbor, but also storm water runoff, deposition from rain, accidental spills and other sources.

Estimated cost to clean up Howards Bay:

$14,000,000.[2]

Use of the City's closed landfill saves the project approx. $1.4 million.

Support Local Business

Fraser Shipyards is a local family-owned company that has been **in operation since 1890**. The navigation channel approaching Fraser cannot be adequately dredged due to contamination in the sediment. This project will remove contaminated sediment and restore the navigation channel to its full depth.

Support Local Workers

Fraser Shipyards has **150-350 employees** depending on the season. Improving access to the shipyards by removing contaminated sediment and dredging the navigation channel will let them continue to grow and expand their workforce.

New Recreational Area

When the project is completed, the closed landfill on **Wisconsin Point** will become a low-impact recreation area. The area will be designed with community input. Improvements will be funded by the EPA, Wisconsin DNR and Fraser Shipyards.

A value of

over $50,000[3]

and helps accomplish goals outlined in the Wisc Point Mgmt Plan.

Improve Cap at Closed Landfill

Decades of settling at the old landfill have created shallow spots and depressions on the landfill cap. Material from Howards Bay would be placed over the cap, creating smooth slopes and a thicker cover. This would reduce liquid getting into the landfill, create a thicker barrier over the waste, and save the City future costs on **cap rehabilitation**.

If needed in the future, comparable repairs to the old landfill could cost Superior taxpayers

$1,200,000.[4]

[1]Areas of Concern are jointly designated by the U.S. and Canada. Much like Superfund sites, they are places where human activities have caused significant environmental damage.
[2]Based on adjusted cost estimate from 65% Design Document Report by Arcadis (November 2016 draft), adjusted based on .
[3]Based on rough estimates for fencing, shelter, and gravel paths. A dog park in Ashland, WI cost $12,000 in 2015, but this site was roughly 1 acre (compared to approximately 10 acres at Wisc Point) and did not include a shelter, benches or gravel trails as shown in the conceptual plan. Gravel trails at a Rice Lake dog park (comparable in size to Wisc Point) cost over $5,000.
[4]Based on 2013 contractor estimate of $14 per cubic yard to haul and place material from Moccasin Mike Landfill at Wisconsin Point closed landfill. We assume 80,000-90,000 cubic yards from Howards Bay. No material cost was included in estimate.

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Road Repair When the Job is Done

80,000-90,000 cubic yards of dredge material will be taken out of Howards Bay, roughly 4,900 dump truck loads. Up to 90 loads will be hauled each day of operation.

How might this affect our roads? Will the roads be repaired?

Impacts to haul roads are likely. In order to ensure the City is fully compensated for damage, road conditions will be evaluated before the project starts. The assessment will use standard DOT methods to document existing damage (cracks, ruts, potholes, etc.) including video, photographs, and measurements.
The same method would be repeated when the project is done.

The Public Works Department would participate in the assessments, and their acceptance would be required before contractors could receive final payment.

Wisconsin Point Road

STATUS: repaved in 2015, damage from the project would be easy to identify.

REPAIR: all damage would be repaired by the contractor or a third party upon completion of the project. City would have to concur with adequacy of repairs.

Moccasin Mike Road

STATUS: very poor condition; frequent heavy truck traffic from the landfill. Repairing to pre-construction conditions would still leave an inadequate road.

REPAIR: The City would request payment for damage from this project. Those funds would be combined with future funding for Moccasin Mike Road, and the entire road would be resurfaced upon completion of the project.

Moccasin Mike Road is the only road leading to the City's landfill, and Wisconsin Point. This road sees intense use by heavy trucks hauling garbage Monday-Saturday. All this traffic has taken a toll, as shown in the photos. Moccasin Mike Road is scheduled for repaving within the next 5 years (timing dependent on funding). The City plans to fully reconstruct the road around 2025.

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Cleanup Dredged Material Management Options

- Evaluated multiple options for management of dredged material
- Options include beneficial use (i.e. use for another purpose), disposal and combinations of the two
- Beneficial use preferred where feasible
- Considered the physical and chemical qualities of the material
- Compared costs, capacity, and ability to implement
- Factored in the level of in-kind match provided for securing federal funds
- Using yardsticks above identified the best options for dredge material management
  - ◊ Erie Pier Processing and Reuse Facility (shipping channel material)
  - ◊ Wisconsin Point Landfill (cleanup project material)

Category	Option	Cost per Cubic yard	Capacity (Cubic Yards)	Why Option Not Selected
Beneficial Use	In-water Habitat Placement (Cummings Slip)	$19.41	20,000	Permitting requirements are significant, time consuming, and may not be approved. Cummings slip is bounded by industrial land uses with steel sheet pile walls. Limited habitat benefits, high maintenance to sustain, and future use of slip would be limited.
	Wisconsin Point Landfill	$46.48	> 90,000	N/A – This option was selected by the project team based on costs, capacity, and ability to implement. In addition, this option contributes significant in-kind cost share needed to match federal funds.
	Duluth Brownfield Sites via Erie Pier*	$41.36	0	Would require transport of material to Erie Pier after first removing and relocating an equal amount of material from Erie Pier to brownfield sites. Permitting requirements are significant.
	Landfill Daily Cover	NE	5,000	Very low capacity, limited ability for cost share (Moccasin Mike Landfill).
Disposal	Fill Baxter Slip & Embayment	NE	28,000	Project could not be timed to coincide with dock wall project & limited volume. Permitting requirements are significant, time consuming, and may not be approved.
	Cummings Slip CDF	NE	30,000	Permitting requirements are significant, time consuming, and may not be approved.
	Erie Pier CDF*	NE	0	Placing material dredged from outside the federal navigation channel in Erie Pier requires mitigation for the loss of capacity in Erie Pier, making this option cost prohibitive.
	Upland Placement at Fraser	$52.43	37,500	Wetlands would be filled. Land use. Permitting requirements are significant.
	Landfill Disposal Vonco	$63.32	Unlimited	High cost. No ability for cost share.

N/A – Not Applicable

NE - Not Evaluated - Project team determined option was not feasible before preparing cost estimates.

CDF – Confined Disposal Facility

* **Erie Pier** exists to support the **federal navigation channel** in the harbor. In coordination with the clean-up project, the U**.S. Army Corps** will dredge the shipping channel and that material will go to the **Erie Pier processing and reuse facility**.

HOWARDS BAY
SUPERIOR, WI

Contaminated Sediment Site

Elevated levels of PAHs, Lead, Mercury and Tributyltin

Action is needed to address the contamination

Summary Information

Extensive Sediment Sampling and Analysis

- Multiple years: 2007, 2010, 2013, 2014, 2015, 2016
- 160 sample locations; Over 500 data points; Thousands of individual results from Howards Bay sediment

Common Sediment Contaminants in Howards Bay

Polycyclic Aromatic Hydrocarbons (PAHs)

- Found everywhere in urban and suburban settings
- Formed from the incomplete burning of plant- or animal-based materials
- Deposited in Howards Bay from many sources, including industrial and commercial use of petroleum products (fuel and oil), historical use of creosote-treated wood pilings, runoff from asphalt roadways and parking lots, fuel spills and automobile exhaust

(Source: Wisconsin DHS fact sheet: https://www.dhs.wisconsin.gov/publications/p4/p44606.pdf)

Lead

- Naturally occurring element historically used as a stabilizer in paint and gasoline
- Entered environment through lead paint residuals, automobile exhaust from leaded gasoline prior to late 1970s, and direct runoff from roadways and urban areas via storm sewers

(Source: Wisconsin DHS fact sheet: https://www.dhs.wisconsin.gov/print/lead/clppp-info.html)

Mercury

- Naturally occurring element
- There are natural and human-made sources of mercury in the environment, including atmospheric deposits from coal combustion, industrial and commercial uses of mercury-containing products, and direct runoff from urban areas
- Found in fish in Howards Bay and the St. Louis River

(Source: Wisconsin DHS fact sheet: https://www.dhs.wisconsin.gov/print/chemical/mercury.htm)

Tributyltin

- Human-made compound historically used as an additive in paint for boat hulls and buoys to prevent attachment and growth of aquatic plants and animals. No longer in use
- Highly toxic to aquatic organisms; less toxic to humans

(Source: Cornell University, http://pmep.cce.cornell.edu/profiles/extoxnet/pyrethrins-ziram/tributyltin-ext.html)

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