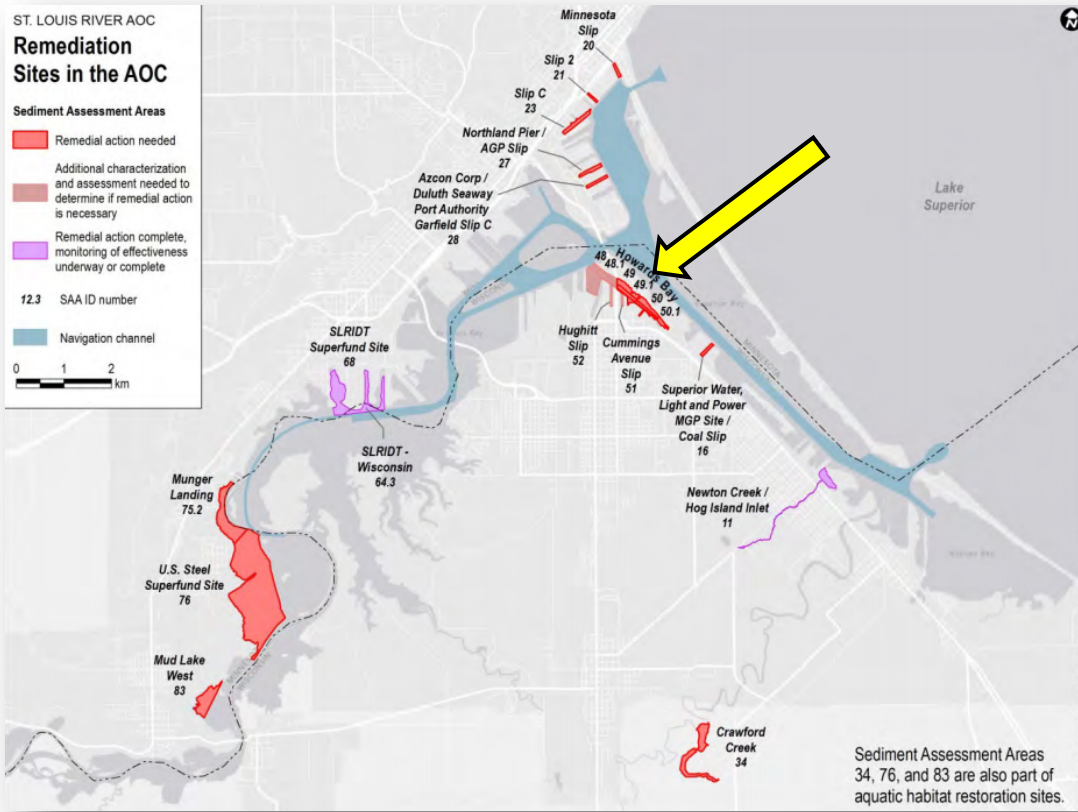


Howards Bay Remediation Project

St Louis River Area of Concern



St Louis River Area of Concern



Howards Bay Remediation Project

- Joint effort: shipping channel dredging *and* cleanup dredging
- Private-Public Partnership: maximize available resources
- \$18M estimated project cost →
 - 65% Federal (EPA)
 - 35% Non-federal (DNR, Fraser, City)
 - City in-kind = \$2.6M



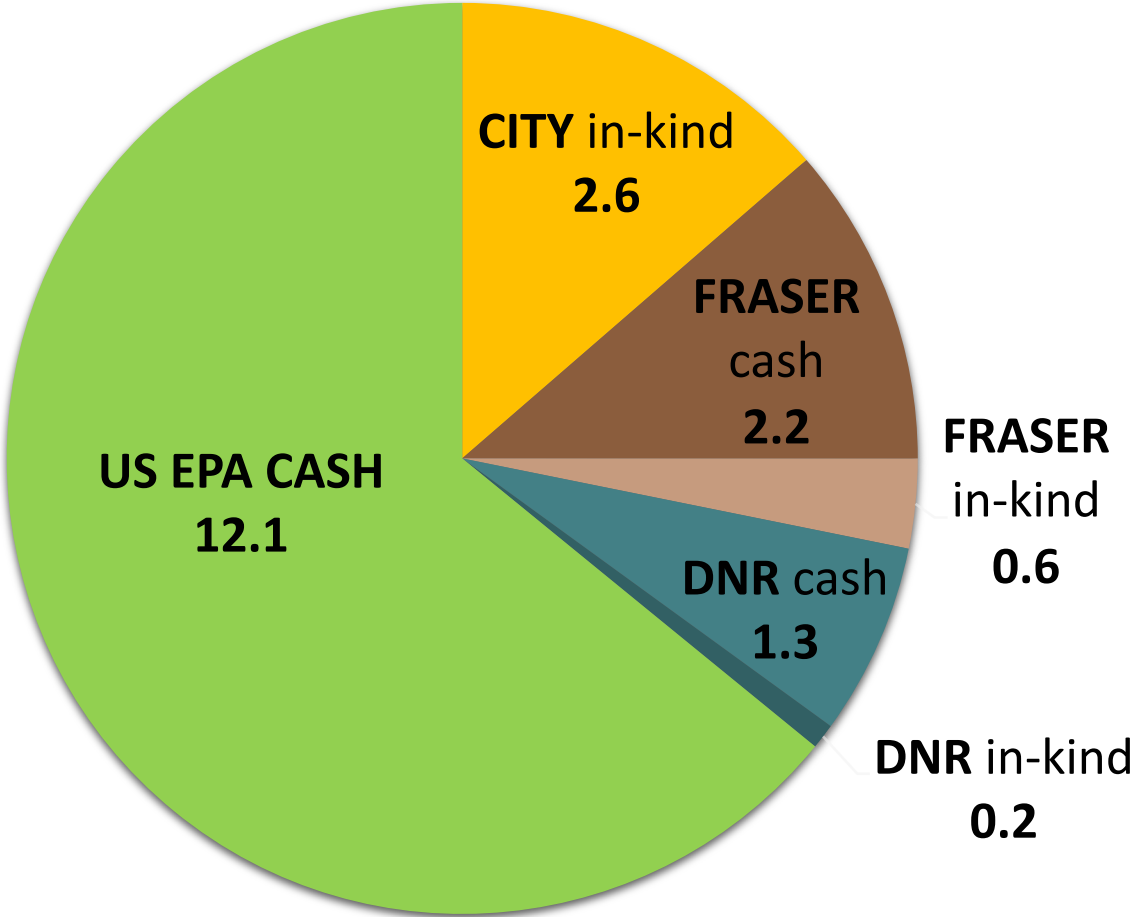
consultant ↘

cash support

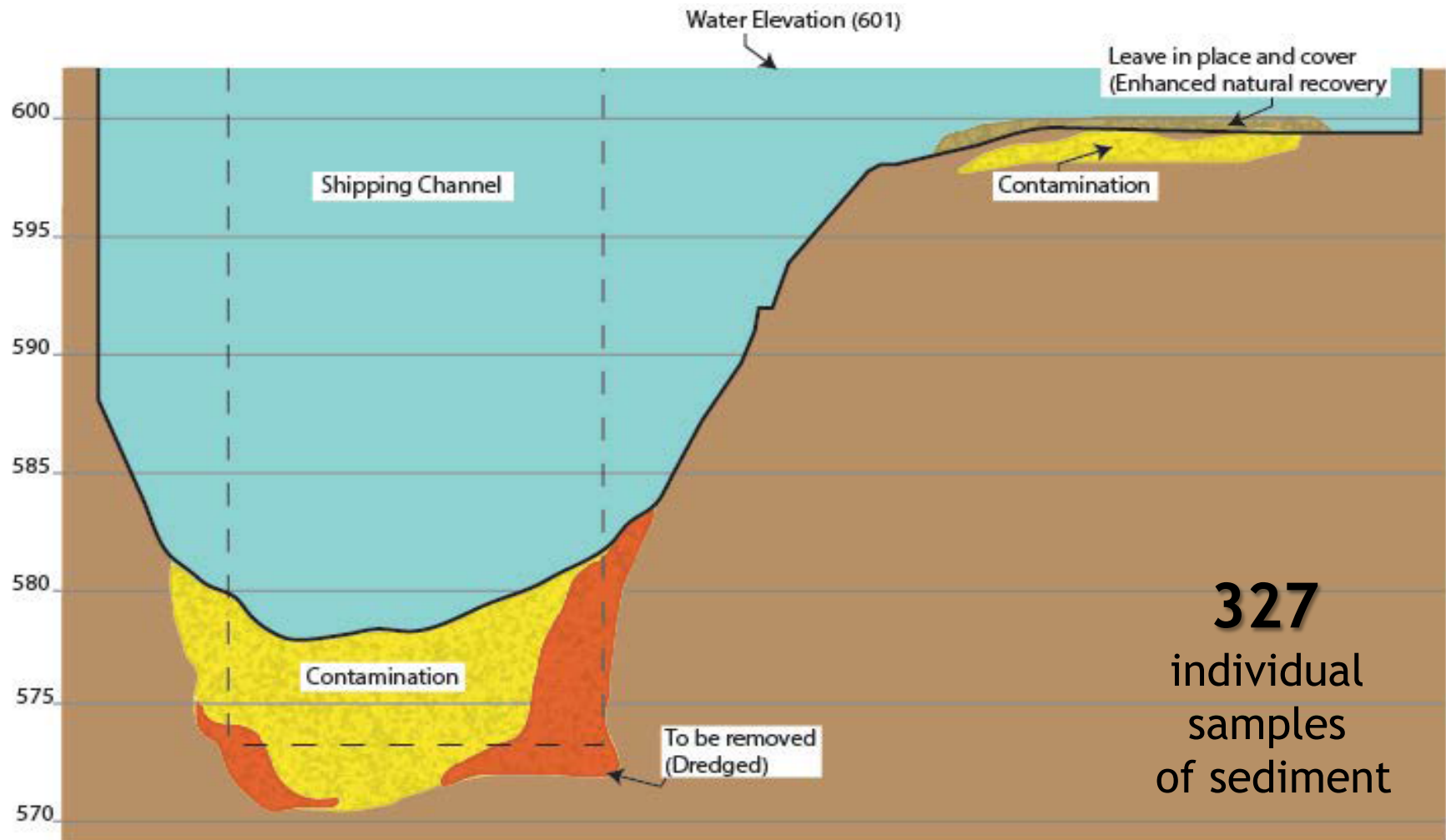
in-kind support ↗

Cost Share Contributions

(in millions)



Howards Bay Dredging



What is in Howards Bay?

Lead

- Paint (sand blasting ship hulls)
- Leaded gasoline ←

PAHs

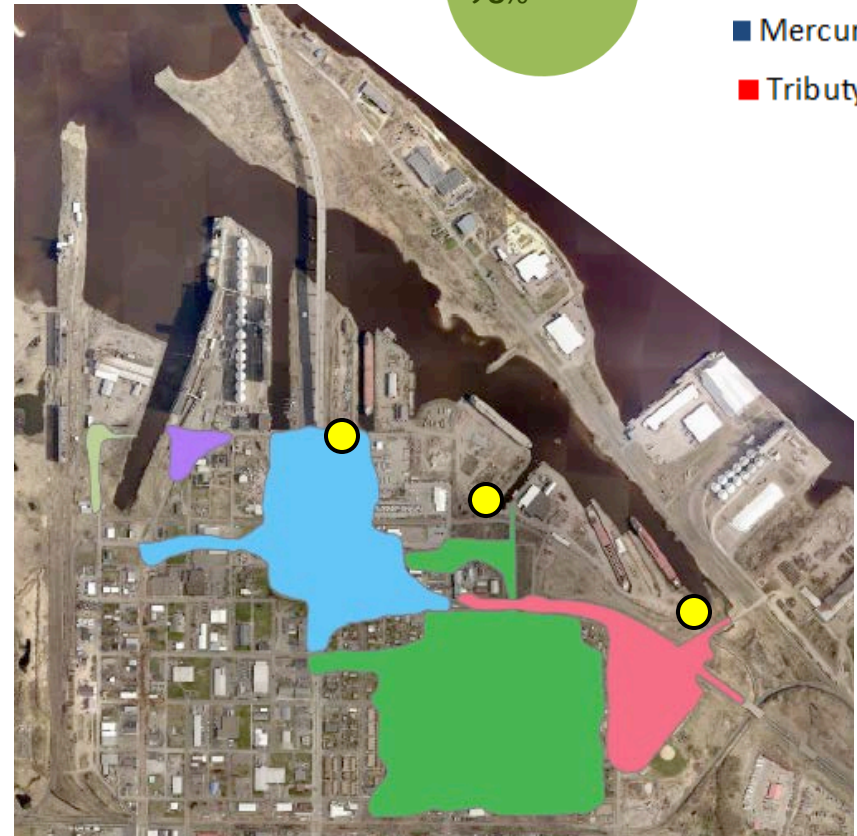
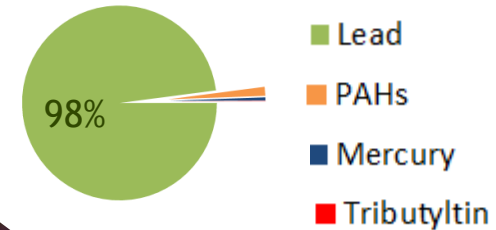
- Combustion ←
- Road runoff ←
- Spills
- Treated wood

Mercury

- Many industrial uses
- Coal combustion ←

Tributyltin

- Antifouling agent in marine paint



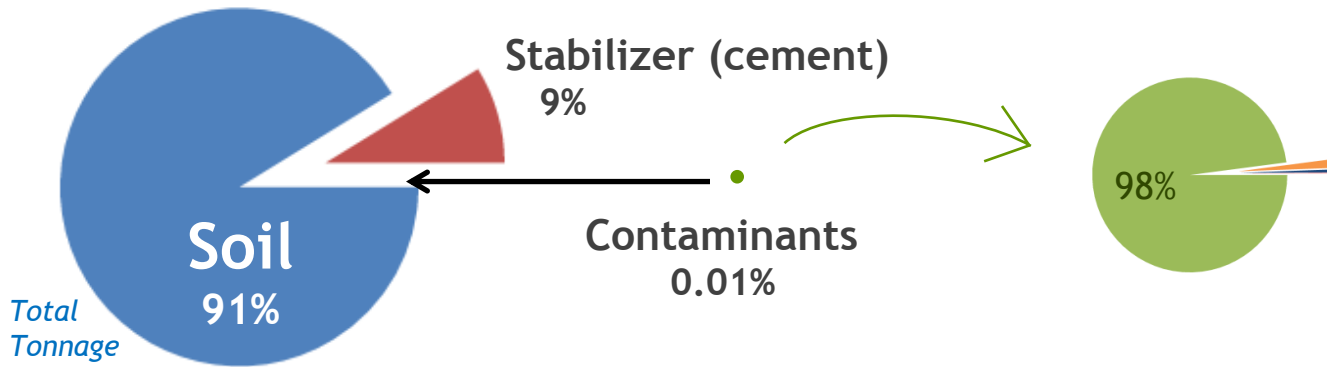
City storm sewer outfalls in Howards Bay.

Reuse and Disposal Options Considered

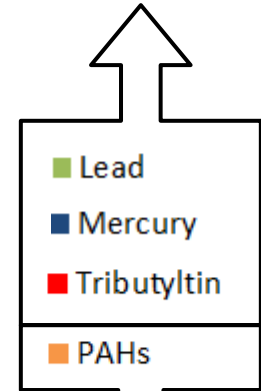
Category	Option	Cost	Capacity
Beneficial Reuse	In-water Habitat Placement	Low	Low
	Wisconsin Point Landfill	Low	High
	Duluth Brownfield Sites	Low	None
	Landfill Daily Cover	Moderate	Very Low
Disposal	Fill Baxter Slip & Embayment	Moderate	None
	Cummings Slip CDF	Moderate	None
	Erie Pier CDF	Low to moderate	None
	Upland Placement at Fraser	Moderate	Low to Medium
	Landfill Disposal	High	High

Wisconsin Point Landfill is the only low cost option with enough capacity that provides significant In-Kind contribution

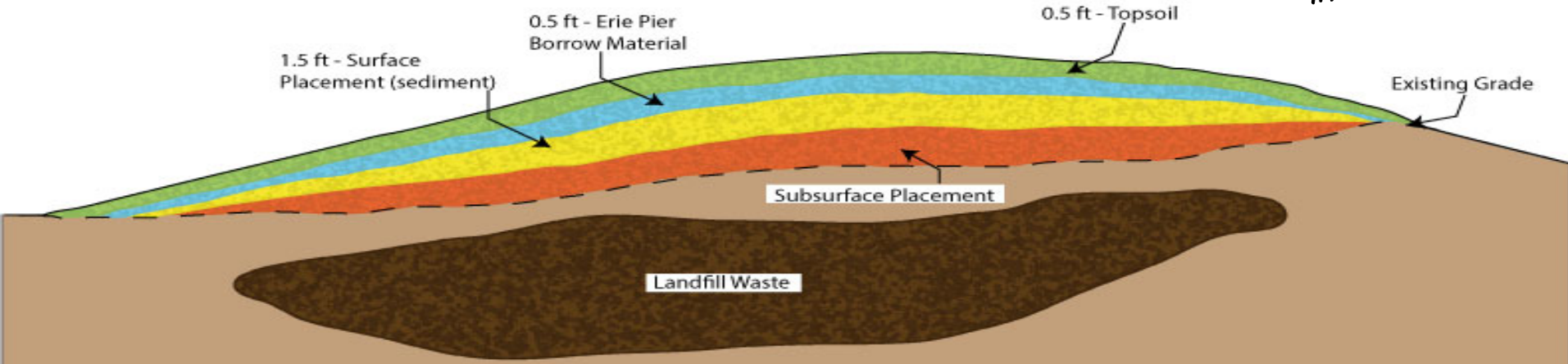
What about contamination?



meets limits for residential site



meets limits for industrial site



Wisconsin Point Landfill

Existing Cap Issues

Benefits of placing dredge material:

- greater thickness over waste
- improved drainage
- reduce leaching
- maintain vegetation
- minimize future maintenance

Used for stockpiling recently



What about leaching and runoff?



Material will be stabilized with vegetation to prevent off-site migration of diluted contaminants

Best Management Practices will be designed to **exceed regulatory minimums**

- **100 foot undisturbed vegetated buffer** (standard is 50 to 75 feet)
 - Lake Superior
 - Wetlands
- Will greatly exceed (be below) the construction sediment load standard (berms, basins, slope interruption, mats, etc.)

- Material test results show it does not leach contaminants, even under tests that simulate conditions that are more harsh than possible in this environment.

Recreational Improvements

Improvements **funded by EPA, DNR and Fraser**

Achieve objectives for closed landfill from Wisconsin Point Management Plan:

- *“unpaved trails or foot paths”*
- *“signage”*
- *“improved access”* and linkage between Lot 1
- *“pet-friendly activities such as fenced off-lead play area”*

Limitations based on landfill constraints and placement criteria for dredge material

Pollinator-friendly plants and benches



What about haul roads?

Formal agreements with federal sponsors will stipulate contract terms for road repairs

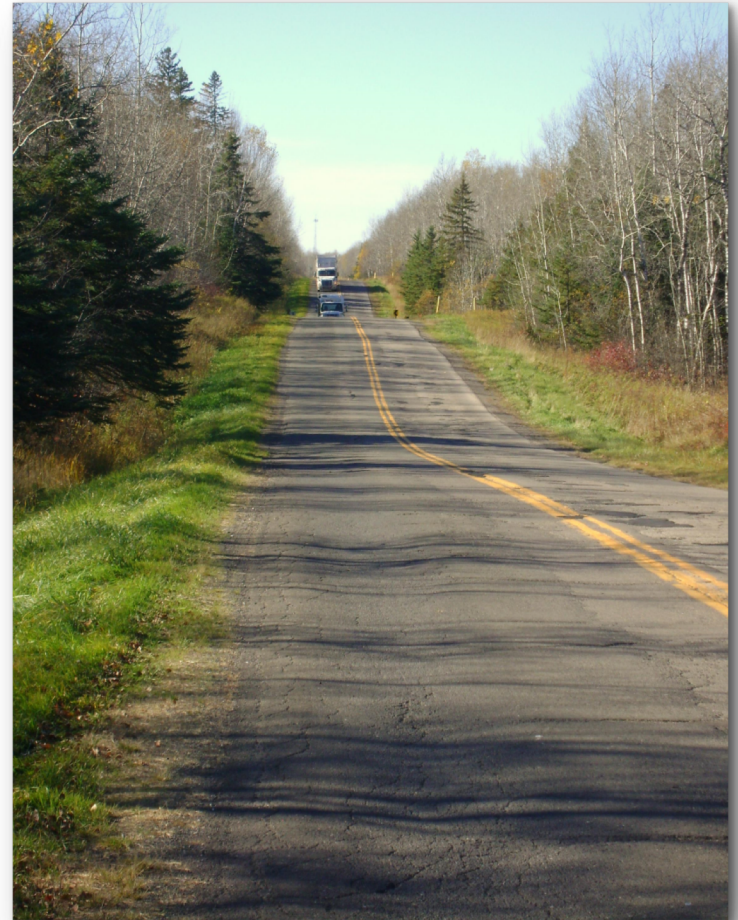
Public Works will have to concur on final repairs prior to final payment

Wisconsin Point Road

Restored by contractor to pre-project condition

Moccasin Mike Road

Streets Dept. will re-surface the road, project partners will provide the materials (approx. \$75,000 value)



Project Benefits



Cleanup largest site on WI side of AOC

Restore navigation in Howards Bay

Beneficial reuse of dredge material

Help protect environment around closed landfill by improving cap

New recreation area at Wisconsin Point

Take advantage of available funding

Support local business and workers

Avoid major cash contributions

Next Steps

2017

- Project Planning
- Public Outreach
- Council Resolution in Support

2018

- Project Design

2019

- Project Agreements
- Tribal Consultation

2020

- Final approvals
- Award contract
- Implementation (2020 or 2021)

