PORT OF PORTLAND

Portland Harbor Superfund Site Cleanup Options

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The Port of Portland is committed to a cleanup of the Portland Harbor Superfund site that protects the health of Portlanders and the environment, and to finding the most cost-effective way to achieve it.

Background

The U.S. Environmental Protection Agency (EPA) listed the Lower Willamette River as a Superfund site in 2000. The affected area encompasses approximately 10 miles of the Willamette River in Portland, from the Broadway Bridge north to near the confluence of the Willamette and Columbia rivers. The Port, along with the City of Portland and more than 10 businesses, has been actively engaged in working with EPA to study the river and the best ways to address the contamination in the river. Now, EPA will soon issue its Proposed Plan for the cleanup at Portland Harbor.

Technology Options

EPA's Proposed Plan will include a combination of cleanup methods. No single cleanup method is the answer; each has pros and cons and each comes with a different price tag. EPA is required to consider costs, as well as other more technical factors, such as long-term and short-term effectiveness, implementability, and reduction of contaminant toxicity or mobility, in their selection of a cleanup remedy. Sound science and best practices must ground EPA's decisions about cleanup methods so that we can ensure public dollars are spent wisely on cleanup.

The four methods likely to be included in the Proposed Plan are capping, dredging, monitored natural recovery, and treatment. Three of the techniques—dredging, capping and treatment—can only be undertaken during four months of the summer when the work will not harm endangered species, such as salmon.

Capping	
This method places a "cap" of clean materials over contaminated sediments to stop them from impacting the environment.	
Pros	**Cons**
Can quickly reduce exposure to contaminants	Contaminants remain in sediment, buried under cap
More cost effective than dredging or treatment	May limit future use of site
Fewer impacts to water quality and less disruptive to local communities	Contaminants could be exposed if the cap is significantly disturbed
May be designed to function as natural habitat	

Dredging	
This method is an excavation operation that uses dredge vessels to remove contaminated sediment from the river bottom. The sediment is then transported to an approved location, such as a landfill.	
Pros	**Cons**
Removes contamination from the river system and relocates it permanently	Resource intensive, including landfill space, fuel consumption and associated greenhouse gas emissions from dredging and transportation

Dredging, continued

(Continued)

Pros	**Cons**
Quicker long-term risk reduction than natural recovery in areas of high contamination	Creates new water quality issues as contamination is stirred up by the dredging
Often provides flexibility for future uses (e.g., navigation)	Least cost effective option
	Impacts community with noise and extra truck traffic

Monitored Natural Recovery/ Enhanced Monitored Natural Recovery	
This method involves actively monitoring ongoing, naturally occurring chemical or biological processes that reduce toxic contaminants in sediment over time. The ongoing, naturally occurring processes can be enhanced (made to occur quicker) by adding clean material over the contaminated sediments, often referred to as enhanced monitored natural recovery.	
Pros	**Cons**
Avoids exacerbating risk in the short term; no impacts to water quality and avoids construction impacts to community	Allows lower level contamination to remain in place
Effectiveness of remedy regularly monitored with sampling of sediment, water and fish; new cleanup options can be proposed based on results of monitoring	Slower to reduce risk compared to other remedies
Most cost-effective	

Treatment	
This method uses technology—such as application of activated carbon—to treat contaminants in sediments.	
Pros	**Cons**
Binds the contaminants in a way that prevents them from being available in the food chain, including to fish	Limited effectiveness in breaking down certain contaminants in sediments
Reduces the amount of sediment that must travel to distant landfills	Requires large staging areas and is energy-intensive
Remediation from treatment is generally quicker than other options	Less cost effective than some other options

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