

Proposed Plan for the East Waterway Cleanup



Fact Sheet

April 2023

This fact sheet summarizes the U.S. Environmental Protection Agency's Proposed Plan for the cleanup action of the East Waterway Operable Unit of the Harbor Island Superfund Site. The Proposed Plan describes the different cleanup alternatives evaluated, including EPA's preferred alternative.

What is the East Waterway?

The 157-acre East Waterway, located southwest of downtown Seattle, is one of seven operable units of the [Harbor Island Superfund Site](#) being addressed by EPA.

Over the past 100 years, the East Waterway has been modified to support urban and industrial development. Some of the changes to the East Waterway include controlling the water flow, constructing Harbor Island, deepening the channel, shoreline modifications, intertidal habitat loss, and installation of riprap, pier aprons, and sheet pile walls. Historical activities along the East Waterway have included marine terminals, shipyards, bulk fuel terminals, recycling and scrap metal yards, cement manufacturing, log handling, small boat marinas, boat manufacturing and repair, and many others.

Today, the East Waterway remains an active industrial waterway, which is used primarily for container loading and transport.

Why does the East Waterway need to be cleaned up?

Industrial discharges, marine activities, storm drains, and combined sewer overflows have polluted surface water and river bottom (sediments) in the

East Waterway over the past 100 years. Polychlorinated biphenyls (PCBs), arsenic, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and dioxins/furans are the four contaminants of concern that pose the greatest risk to people's health in the East Waterway. In addition, other chemicals pose risks to bottom-dwelling organisms and fish at the East Waterway.

60-Day Public Comment Period April 28 through June 27, 2023

You can provide comments on the Proposed Plan in the following ways:

1. **By mail:**
ATTN: East Waterway Proposed Plan
c/o Laura Knudsen
U.S. EPA Region 10, 1200 Sixth Avenue, Suite 155
Superfund Records Center, Mail Stop 17-C04-1
Seattle, WA 98101
2. **By email:** EastWaterwayComments@epa.gov
3. **By comment form on EPA's Harbor Island website:** www.epa.gov/superfund/harbor-island
4. **By voicemail:** You may leave oral comments in any language about the Proposed Plan by calling **206-553-6520**.
5. **Attending public meetings and providing oral and/or written comments** (for more details please visit epa.gov/superfund/harbor-island):
 - EPA will hold a **virtual public meeting** in English on **Thursday, May 25, 2023**
 - EPA will also hold an **in-person public meeting** with interpreters in Spanish, Vietnamese, and Khmer on **Saturday, June 3, 2023**

Learn more about the Proposed Plan!

Please visit EPA's Harbor Island website (www.epa.gov/superfund/harbor-island) for the most up-to-date information on:

- ✓ **The public meetings** outlined above.
- ✓ **Supporting materials**, including the full Proposed Plan and pre-recorded videos of the presentation on the Proposed Plan in English, Spanish, Khmer, and Vietnamese.
- ✓ **Information on availability sessions** during the comment period where anyone may ask questions, but only written comments will be accepted.

To receive updates on the East Waterway Proposed Plan by email, please contact Laura Knudsen (knudsen.laura@epa.gov).

What is the risk to people and wildlife from contamination in the East Waterway?

Parts of the East Waterway are used for recreational activities that include boating, kayaking, and fishing. It is also part of the usual and accustomed fishing areas for the Muckleshoot Indian Tribe, the Suquamish Tribe, and the Yakama Nation. Treaty protected uses within the East Waterway include a commercial salmon fishery, as well as ceremonial and subsistence shellfish harvesting. The East Waterway, along with the Lower Duwamish Waterway, connects Puget Sound to the Green/Duwamish River watershed. This is also an important migratory pathway for salmon and provides habitat for rockfish and other marine fish and small mammals.

Contamination present in the East Waterway poses potential health risks to people who consume fish or shellfish that live their whole lives in the river (also called resident fish), and to people who engage in activities that cause them to be exposed to sediment (such as netfishing or harvesting clams).

Fish are exposed to contamination in the water and when they eat contaminated prey. Animals that live in the sediment and other bottom-dwelling organisms are exposed to contaminants present in both water and the sediment.

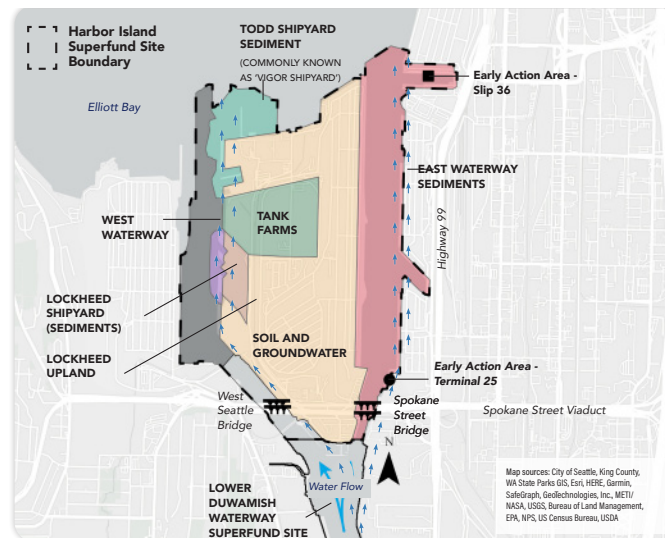


Figure 1. Map of the Harbor Island Superfund Site, including the East Waterway Sediments Operable Unit
(Source: EPA)

What are the Contaminants of Concern at the East Waterway?

The following contaminants of concern (COCs) pose the greatest potential for risks to people's health and the environment.

PCBs (polychlorinated biphenyls) are man-made chemicals that were banned in 1979. They are persistent in the environment and can build up in fish and shellfish. PCBs are known to affect the immune system and may cause cancer in people. PCBs can also affect learning abilities in children.

Arsenic is a naturally occurring element that is widely distributed in the Earth's crust. It is found in water, air, food, and soil. Arsenic compounds have been widely used as a wood preservative and as pesticides. These uses and other industrial activities can result in much higher concentrations of arsenic in the environment than would be present naturally. Arsenic can increase the risk of skin, bladder, and other cancers.

Mercury is a naturally occurring metal that can accumulate in the tissues of fish, wildlife, and humans from their diet. Mercury can be harmful in its most toxic form, methylmercury, primarily affecting people's nervous and reproductive systems, and is particularly harmful during early child development.

cPAHs (carcinogenic polycyclic aromatic hydrocarbons) are formed during the burning of substances such as coal, oil, gas, wood, garbage, and tobacco. Exposure to cPAHs may increase a person's risk of cancer.

Dioxins and furans are by-products of burning (either in natural or industrial settings), chemical manufacturing, and metal processing. Dioxins are persistent in the environment and, like PCBs, can accumulate in fatty tissue of fish and people. Specific toxic effects related to dioxins include reproductive problems, problems in fetal and early childhood development, immune system damage, and cancer.

TBT (tributyltin) is a chemical that is used in boat paints to prevent and slow the growth of algae and other organisms that attach to the hulls of boats. It is toxic to aquatic life and causes reproductive effects in marine organisms.

29 additional COCs are also present at concentrations that could be harmful to animals that live in the sediments of the East Waterway.

EPA's Preferred Alternative

EPA has evaluated a range of alternatives presented in the Feasibility Study. EPA's primary objective is to reduce contaminant concentrations in the sediment to levels that are protective of human health and the environment.

The term **source control** refers to controlling the sources of contamination or pollution that are entering the East Waterway from upriver and lands along the river.

EPA's long-term vision for the East Waterway Operable Unit is to obtain the lowest contaminant levels possible in sediments to reduce contaminant concentrations in fish tissue so the Washington State Department of Health could minimize reliance on fish consumption advisories. This long-term vision also includes achieving sediment PCB concentrations equivalent to the concentrations measured in the non-urban background for Puget Sound (i.e., 2 parts per billion PCBs). Achieving this will rely both on an effective cleanup of the East Waterway Operable Unit and robust source control efforts throughout the Green/Duwamish River watershed using a range of federal, state, and local regulatory authorities.

As a result, EPA is proposing an *interim remedy (or cleanup)* that includes a combination of cleanup approaches to address the entire East Waterway Operable Unit. EPA will propose cleanup levels after active cleanup activities have concluded and it can be determined that efforts led by Washington State to achieve source control have been successful in reducing contamination entering the East Waterway Operable Unit.

EPA proposes the following specific cleanup components:

- **Actively cleaning up approximately 121 acres of contaminated sediments, to include:**
 - Dredging 99 acres (or 63 percent) of the East Waterway Operable Unit;
 - Capping 7 acres (this may include dredging to address final elevation needs);
 - On-site (or in-situ) treatment of 12 acres under piers and docks using activated carbon or other organic amendments to contain and absorb contaminants; and
 - Enhanced natural recovery of 3 acres for a portion of the East Waterway under the West Seattle Bridge/Spokane Street Bridge corridor.
- **Applying monitored natural recovery in 36 acres** where there would be no dredging, capping or treatment, to allow natural processes to reduce sediment concentrations.
- **Implementing institutional controls** including fish advisories, educational outreach, waterway and land use restrictions, and regulated navigational areas to prevent exposure to contamination and protect the integrity of the cleanup.
- **Conducting short-term monitoring** during and after construction to measure the cleanup's progress and effectiveness, and until cleanup levels are achieved.
- **Conducting Five-Year Reviews** to assess whether the cleanup remains protective.

Construction work for this preferred alternative is estimated to **take approximately 10 years and cost \$290 million**. This timeline assumes dredging would stop during salmon migration and tribal fishing seasons.

EPA is proposing this alternative because it will achieve substantial risk reduction, primarily through dredging and capping the most contaminated sediments, while treating areas where access by dredging equipment is limited or where dredging may undermine the stability of existing structures. This alternative will reduce risks to people's health and the environment within a reasonable time frame and reflects the need to ensure the long-term reliability of the cleanup, achievability of cleanup levels, cost-effectiveness, and is consistent with ongoing and future uses of the East Waterway.

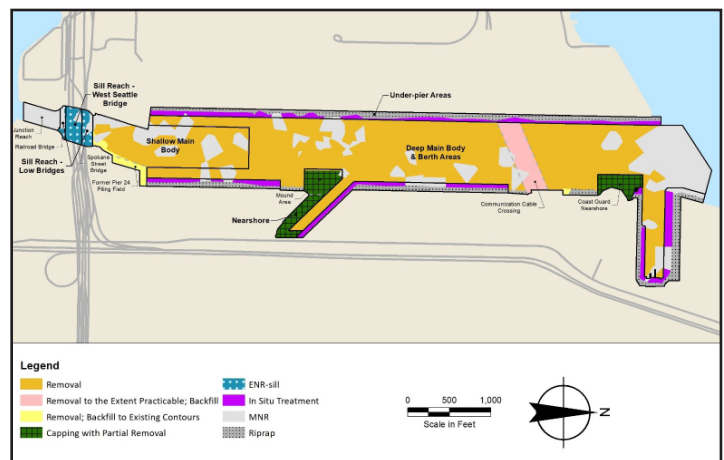


Figure 2. Visual of the specific cleanup actions in EPA's Preferred Alternative for the East Waterway Operable Unit. (Source: EPA)

What happens now?

The figure to the right shows the Superfund process, including an interim Record of Decision approach. We are currently at the first Proposed Plan stage of the cleanup for the East Waterway Operable Unit. EPA is requesting your comments to help us determine how to move forward with the cleanup. Under this proposed cleanup:

- EPA would negotiate an agreement and oversee development of detailed designs of the cleanup before construction begins. This is *estimated to take 4 to 5 years*.
- Then construction of the cleanup (also called remedial action) would occur over *about 10 years*. EPA would collect data during this time to understand the effectiveness of the cleanup and efforts to control upstream sources of pollution entering the East Waterway. This data will be critical in evaluating progress toward achieving EPA's long-term vision to reduce sediment PCB concentrations equivalent to the concentrations measured in the non-urban background for Puget Sound (i.e., 2 parts per billion PCBs).
- After the construction of the cleanup is complete, EPA would continue to monitor and collect data that will be assessed during each five-year review.
- Based on all this information, EPA would work with the community, State, the Tribes, and the East Waterway Group (or EWG, see next page) to establish cleanup levels.
- Lastly, EPA would prepare another Proposed Plan that would include cleanup levels and any additional actions deemed necessary to provide the public with another formal comment period before EPA issues a Final Record of Decision (or final cleanup plan).

What happens after this public comment period?

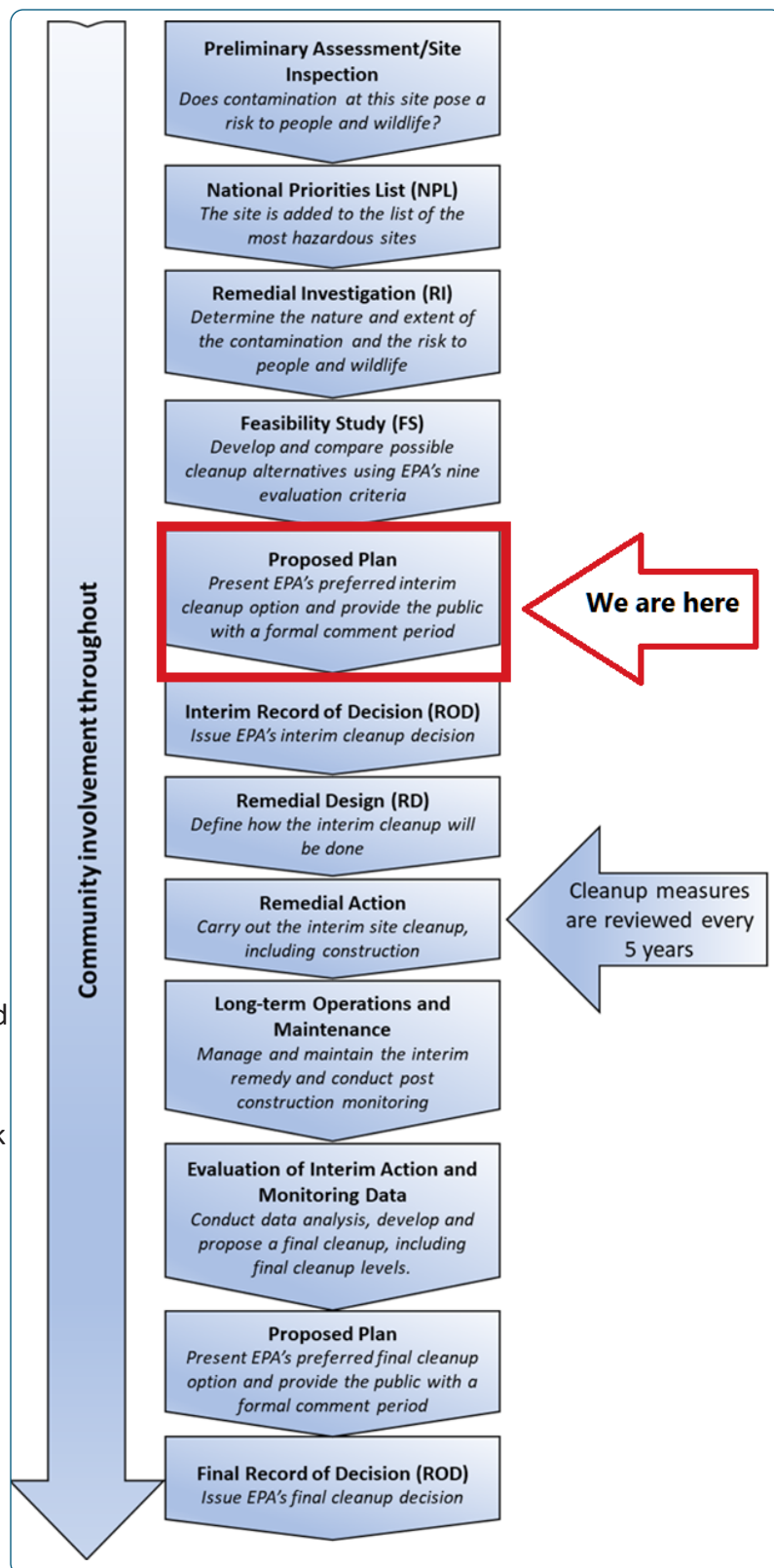


Figure 3. Superfund Process for an Interim Record of Decision (Source: EPA)

EPA will consider public comments when selecting cleanup actions for the East Waterway. EPA may modify the preferred alternative or select another cleanup alternative based on new information or public comments and then issue the interim cleanup plan (also known as the Interim Record of Decision or Interim ROD). You are encouraged to review and comment on all the alternatives in the Proposed Plan, available on EPA's Harbor Island website (www.epa.gov/superfund/harbor-island). The Interim ROD will include a Responsiveness Summary that will summarize and respond to public comments on the Proposed Plan.

Who is involved in the East Waterway Cleanup?

EPA will oversee cleanup of the East Waterway which is expected to be conducted primarily by the East Waterway Group (EWG), consisting of the Port of Seattle, the City of Seattle, and King County. EPA also anticipates working with the EWG to develop source control plans that address chemical sources directly discharging to the East Waterway.

Additionally, many others are involved with the cleanup including:

- **The Elliott Bay Trustee Council**, whose members include the U.S. Department of the Interior; the U.S. Department of Commerce, acting through the National Oceanic and Atmospheric Administration; the State of Washington; the Suquamish Tribe; and the Muckleshoot Indian Tribe.
- **Many interested community groups and community members who are affected by the cleanup activities.** Community involvement is a crucial, and required, part of the Superfund process (as shown in Figure 3). As a result, EPA decided to start updating the Harbor Island Community Involvement Plan in Spring 2022 to better understand how EPA can best keep community members informed and involved in the cleanup process, including the release of this Proposed Plan for the East Waterway.

What is CERCLA and Superfund?

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was passed into law by Congress in 1980. This law created the Superfund program, responsible for cleaning up some of the nation's most contaminated sites, and responding to environmental emergencies, oil spills and natural disasters. This includes cleaning up the East Waterway.

For More Information

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For information on US Environmental Protection Agency's work in Harbor Island, including the East Waterway, please visit: www.epa.gov/superfund/harbor-island

If you need materials in an alternative format, please contact Laura Knudsen at 206-553-1838.



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