

FINAL Summary

EPA (with support from DEQ and the CAG) Portland Harbor Superfund Site Public Forum and Open House
Wednesday, December 12th, 2018 | 5:30 – 8:30pm | Revolution Hall in SE Portland

Open House Tabling/Booths

The Environmental Protection Agency (EPA) held its third quarterly Portland Harbor Superfund Site Public Forum at Revolution Hall in Portland, Oregon. The public forum took place from 5:30 – 8:30 p.m. and was divided into two main sessions as follows:

1. **Open House/Tabling/Booths: 5:30 p.m. – 7:00 p.m. (Location: 2nd Floor Hallway)**
2. **Public Forum: 7:00 – 8:30 p.m. (Location: Room 101 on ground floor)**

The open house portion of the meeting featured tables/booths to provide information in a creative, interactive, and visual way to members of the public. Participants had over an hour to visit the open house tables/booths, review the information provided, ask questions, and participate in discussion with those leading the booths. Hosts were at each of the open house tables/booths (all listed in the [December 12th Public forum agenda](#)) and were available to provide information and updates in the various geographic areas of the clean-up. For the most up-to-date map of the work at the Portland Harbor Superfund Site, please check-out the document titled [‘Portland Harbor Superfund Site Updates – December 2018.’](#)

Welcome and Overview

The Facilitator, Triangle Associates, welcomed the group and introduced the EPA and Oregon Department of Environmental Quality (DEQ) staff present at the meeting. The Facilitator clarified the purpose of the meeting: to provide a forum for members of the public to receive updates regarding the Portland Harbor Superfund Site, the Technical Assistance Grant (TAG), the Proposed Explanation of Significant Differences (ESD), and the opportunity to ask questions of the Potentially Responsible Parties (PRPs).

Laura Knudsen, EPA Region 10, Community Involvement Coordinator (CIC), provided a recap of the September 12 public forum and thanked attendees for their time and attendance. Laura also introduced Theo Mbabaliye, EPA Region 10, Grant Project Officer, TAG, to announce that the Willamette River Advocacy Group was awarded with the TAG.

Theo provided an overview of the TAG and explained that the intended purpose of the TAG is to assist community groups with funding needed to hire a technical expert to interpret and explain technical reports, site conditions, and decisions. Theo acknowledged that the TAG application process is intensive and congratulated the Willamette River Advocacy Group for receiving the award.

Michael Pouncil, Portland Harbor Community Advisory Group (CAG), provided a brief history of the CAG and reminded meeting participants to submit comments regarding the Portland Harbor Proposed Explanation of Significant Differences (ESD) prior to the December 21 deadline.

(b) (6), North Willamette Watershed Council, introduced students from a local High School to share comments and thoughts about the Portland Harbor Superfund Site Clean-up. The students are members of the Environmental Science Club (b) (6) also introduced a former student who performed a song with her guitar about the river.

FINAL Summary

EPA (with support from DEQ and the CAG) Portland Harbor Superfund Site Public Forum and Open House
Wednesday, December 12th, 2018 | 5:30 – 8:30pm | Revolution Hall in SE Portland

Report Outs from Open House Tables/Booths

The Facilitation Team introduced the open house table/booth hosts to provide brief high-level report-outs of the questions asked during the open house portion of the forum. The information shared during the report-outs is as follows.

Booth #1: Portland Harbor Community Advisory Group (CAG)

Michael Pouncil, CAG, stated that there were several comments shared during the open house portion of the public forum including:

- Attendees expressed gratitude that the Portland Harbor CAG was one of the booths available.
- Most of the information shared was about the history of the river and how the river has developed over time.

Booth #2: Portland Harbor Community Coalition (PHCC)

(b) (6), PHCC, shared some of the comments from the open house portion of the public forum as follows:

- Many of the attendees that stopped by the booth were teachers.
- Attendees expressed appreciation that PHCC describes the cleanup through easy-to-understand terminology.

Booth #3: Terminal 4

Kelly Madalinski, Port of Portland, stated that many attendees asked for status updates at the Terminal 4 site clean-up and the booth hosts provided these verbally.

Booth #4: Source Control (Oregon Department of Environmental Quality or DEQ)

Matt McClincy, ODEQ, said that there were a lot of good questions posed during the house open house portion of the forum regarding the area of Kelly Point Park. He added that most of the questions were regarding concerns with downstream sampling and that not all data points on sampling are available at this time.

Booth #5: Fish Consumption (Multnomah County)

Beth Appert, Health Educator with Multnomah County Environmental Health, noted that there were a lot of new attendees at the December 12 Open House/Public Forum. Beth stated that many of the questions were from students and teachers who were interested in fish consumption. She noted that there are workshops coming up in 2019 and that they are open to the public.

Booth #6: City of Portland, Bureau of Environmental Services

Jessica Terlikowski, City of Portland, said that there were questions about the City's program and how it plans to engage with the community about the clean-up. She responded that outreach is being conducted as part of the process to determine how communities want to be involved and that the information received from the community will be reviewed to determine next steps.

Booth #7: Pre-Remedial Design & Baseline Sampling

Nicki Pozos, consultant to/for the Pre-RD group and Senior Managing Associate for Barney & Worth, Inc., also noted that there were many new attendees at the December 12 Open House/Public Forum. She informed the group that regarding sampling data, the Pre-RD group anticipates results to share at the next public forum.

FINAL Summary

EPA (with support from DEQ and the CAG) Portland Harbor Superfund Site Public Forum and Open House
Wednesday, December 12th, 2018 | 5:30 – 8:30pm | Revolution Hall in SE Portland

Booth #8: NW Natural (Gasco)

Dave Santen, NW Natural (Gasco), stated that there were questions about which technologies will be used for clean-up at the Gasco site. He commented on the number of new faces at the December 12 meeting and that many of them were students.

Booth #9: River Mile 11 East

Cindy Ryals, City of Portland, said that there were no specific concerns about the River Mile 11 East site.

Presentation – Proposed Explanation of Significant Difference (ESD)

Sean Sheldrake, EPA Region 10, Remedial Project Manager, presented a brief presentation on the proposed Explanation of Significant Difference (ESD). The presentation highlighted EPA's proposed, non-fundamental changes to the Portland Harbor Record of Decision (ROD) because of the toxicity change in Benzo(a)pyrene, a carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) and contaminant of concern (COC). The [full presentation from December 12th](#) is available. Also, a similar presentation is available via the pre-recorded EPA [webinar](#).

Proposed ESD Frequently Asked Questions

Laura Knudsen and Sean Sheldrake introduced some of the most frequently asked questions that EPA had been receiving since issuing the Proposed ESD. Laura posed the questions and Sean provided responses through an interactive mock-interview style presentation. The questions addressed during this portion of the public forum are as follows:

1. What is the difference between an Explanation of Significant Differences (ESD) and a Record of Decision (ROD) amendment?

- We are not changing the foundation or the technology of the final clean-up plan for the Portland Harbor Superfund Site with this ESD.
- **An ESD** is considered a significant difference to the final clean-up plan; it is not a fundamental change to the final clean-up plan (also called Record of Decision or ROD). We are making a change that is significant, but EPA is still following all the previous processes that were applied before for the final cleanup plan (the same risk assessment process). An ESD does not require a public comment period.
- **A ROD Amendment** is considered a fundamental change to the final cleanup plan, such as a change in clean-up technology. A ROD must have a public comment period and typically takes more time than an ESD.

2. How common is it to issue an Explanation of Significant Differences (ESD) during the Superfund process?

- It is **not uncommon** to issue an ESD during the Superfund process because taking new information into account is part of the Superfund process.
- Other Superfund Sites may take this BaP update into account (Wycoff, Duwamish).
- EPA cannot predict what other toxicity value changes may occur down the line, but other chemical toxicity value changes are possible.

FINAL Summary

EPA (with support from DEQ and the CAG) Portland Harbor Superfund Site Public Forum and Open House
Wednesday, December 12th, 2018 | 5:30 – 8:30pm | Revolution Hall in SE Portland

3. Who issued this change, what was the methodology, and who funded it?

- **Who Issued this Change:** EPA's Integrated Risk Information System (IRIS). The last time BaP was updated was in 1984. The latest update was January 19, 2017.
- **Methodology of this Change:** IRIS had enough chemical-specific information on BaP to reassess the chemical. IRIS looked at hundreds of peer-reviewed studies for BaP to determine the toxicity update. About 700 references covering non-cancer and cancer effects for BaP were cited in the IRIS report for BaP.
- **Who Funded this Change:** EPA oversaw making this change and led this BaP chemical assessment. Some studies that were used in updating this change were not conducted or funded by EPA.

4. This national change upgrades Benzo[a]pyrene's status from 'probable human carcinogen' to 'human carcinogen.' Why then is EPA saying that BaP is about 7 times less toxic to human health than previously thought?

- **There are 2 parts to the BaP IRIS assessment (and all assessments):**
 - **(1) Considering whether BaP causes cancer:** With the January 2017 update, EPA's position is that BaP causes cancer in humans. However, this does not reflect how powerful or potent of a cancer-causing chemical BaP is.
 - **(2) Considering how likely BaP is to cause cancer:** With the January 2017 update, EPA has determined from current research that BaP is less likely to cause cancer than was previously thought. The relationship is better understood between how people are exposed to BaP in the environment at a given BaP concentration and the corresponding human health risk, so we understand a lot better now how likely people are to get cancer from BaP than we did in 1984.

5. For the Benzo[a]pyrene change, what does 7 times less potent mean? 7 times less than what?

- To help illustrate what this means, let's imagine that we are on an island and there are a million people. Initially, EPA saw that 7 in those million people were getting cancer.
- Now (after reviewing hundreds of studies through the IRIS process), EPA thinks that it is more likely that 1 person in a million will develop cancer if the concentration of BaP in the beach did not change.

6. Did the national EPA Benzo[a]pyrene update consider children and infants who are more vulnerable (for both cancer and non-cancer effects)?

- EPA's national IRIS update for BaP did consider children's susceptibility in the development of cancer and non-cancer values.
- EPA's national IRIS update also states that age-specific susceptibility should be considered when using the BaP toxicity value.
- The Portland Harbor Superfund Site applied age dependent adjustment factors (ADAFs) for early-life exposure to mutagenic carcinogens such as BaP. Exposure scenarios for which early-life exposures were considered were limited to recreational beach use, fish consumption, and household use of surface water.

FINAL Summary

EPA (with support from DEQ and the CAG) Portland Harbor Superfund Site Public Forum and Open House
Wednesday, December 12th, 2018 | 5:30 – 8:30pm | Revolution Hall in SE Portland

7. Did the Portland Harbor Superfund Site take site-specific cancer & non-cancer BaP human health risk into account with this toxicity change? Were children and infants considered?

- **Yes, the Portland Harbor Superfund Site did take cancer & non-cancer BaP human health risk into account for skin contact (dermal exposure) and ingestion of BaP.** After evaluating all relevant exposure routes and populations, EPA found that tribal fishers presented the most human health risk from exposure to BaP because the amount of exposure to sediment is higher as a tribal fisher.
- **Children and infants were considered for cancer health risks.** For cancer, the Portland Harbor Human Health Risk assessment evaluated the combined child/adult exposure cancer-risk scenarios for polycyclic aromatic hydrocarbons (PAHs), so children were considered for the recreational beach exposure scenario and it was re-done with the revised BaP value.
- **Children were considered for non-cancer health risks.** The non-cancer risks at the site are very low & were also evaluated for children. However, cancer-risk was found to be the main cause of human health concern, so that if cancer health risk was addressed, non-cancer risks would also be addressed.

8. How was wildlife or ecological health considered with this proposed ESD (both with the national BaP change and the Portland Harbor specific change)?

- The national EPA IRIS update only concerned human health risk, not ecological or wildlife risk.
- However, for the Portland Harbor Superfund Site we did look at how different cleanup level changes based on the BaP update might influence ecological health (for example, in the navigation channel).
- In looking at what kind of change would be appropriate at the Portland Harbor Superfund Site, we had to look at all the objectives from the final cleanup plan and some of those were ecological. We did not want any change we made to polycyclic aromatic hydrocarbons (PAHs) to human health objectives to have any ripple effects to the ecological objectives.

9. Does this proposed ESD take into account mixtures of PAHs? I have heard that mixtures of PAHs may be more toxic than individual chemicals.

- Yes. This change does apply to all 7 cancer causing PAHs as a mixture.
- The carcinogenicity of other PAHs is assessed relative to BaP through the application of a factor that measures how toxic the other PAHs are in relation to BaP.
- PAHs are one of those groups of chemicals that are assessed in groups, rather than individually.

10. Has there been a site-specific analysis in the area of Gasco and Terminal 4 with the combination of BaP and the other chemicals at the Site based on new data and how the combination of those chemicals can affect people?

- No. Standard risk assessment practice is to look at each contaminant individually and evaluate the risk for that contaminant on human health. Then those individual risks for each contaminant are added to form a total risk value (additive risk).
- Synergistic effects of one chemical interacting with other chemicals is not considered in standard risk assessment practice and as a result, was not evaluated at Portland Harbor.

FINAL Summary

EPA (with support from DEQ and the CAG) Portland Harbor Superfund Site Public Forum and Open House
Wednesday, December 12th, 2018 | 5:30 – 8:30pm | Revolution Hall in SE Portland

11. (BONUS QUESTION) When we submit comment, what is EPA's responsibility to respond to the comments? What could cause EPA to reconsider this change?

- EPA is recording every comment that we receive and will prepare a responsiveness summary showing how we responded to the comments.
- We will also explain any changes that were made to the proposed ESD base on the comments we received.
- If we receive comments that cause us to think about something we did not consider before, that could cause us to make a change. During the development of the final cleanup plan, this occurred with public comments we received.

Questions and Answers with EPA Remedial Project Manager (RPM) and Community Involvement Coordinator (CIC)

Following the frequently asked questions portion of the Proposed ESD presentation, the Facilitator opened the meeting up for additional questions regarding this topic. The following are questions asked and responses provided.

Q1: What does the five-year review cycle mean for future changes to the Portland Harbor ROD, and can changes be made after/as part of the five-year cycle review?

A1 (from EPA): A Five-Year Review (FYR) is used to review whether the clean-up process is effective. The timing is triggered when the first construction action is taken on a site. At this time, there is no approximate date for when the FYR countdown will be triggered for the Portland Harbor Superfund site. Once consent decrees are entered with the court, then clean-up construction can begin. A Five-Year Review at the Portland Harbor site will help determine to what extent Monitored Natural Recovery (MNR) is working and will also help assess the quality of the clean-up.

Q2: Regarding the Proposed Remedial Area map from the presentation, which areas will be subject to dredging and capping, and what will happen with sediment transport modeling?

A2 (from EPA): When designing the clean-up, EPA relies on actual observed (also called empirical) data. As a result, while we have a very good idea already of the areas that most likely will require dredging and capping, we still need to review empirical data before finalizing design plans. As you can see from the maps provided at this public forum, this proposed ESD has a minimal impact on the proposed dredging and capping areas in the ROD (compare maps of the [ROD Site-Wide Cleanup Technologies for Selected Remedy](#) versus the [Proposed ESD Cleanup Technologies](#)).

Q3: A recent study showed that synergistic chemicals, including carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) can be worse than other chemicals. If synergistic chemicals and mixtures have not been considered for the Portland Harbor site, what is the plan to ensure those chemicals are cleaned up?

A3 (from EPA): EPA does not generally consider synergistic effects of one chemical interacting with other chemicals because this is not part of the standard risk assessment practice. Many more peer-reviewed data and studies are needed to assess synergistic risk for the Portland Harbor Superfund site; the results of animal studies are often used to predict the potential human health effects of a chemical and this is one of the largest sources of uncertainty in evaluating toxicity. However, EPA does add health risk impacts from multiple contaminants to evaluate total risk. While this is not a synergistic evaluation, it does adjust assessed risk based on multiple contaminants and is protective of human health and the environment.

FINAL Summary

EPA (with support from DEQ and the CAG) Portland Harbor Superfund Site Public Forum and Open House
Wednesday, December 12th, 2018 | 5:30 – 8:30pm | Revolution Hall in SE Portland

Q4: What work is being done at Willamette Cove?

A4 (from EPA): The Potentially Responsible Parties (PRPs) involved in the upland area cleanup of the Portland Harbor Superfund site, including Metro, the City of Portland, and the Port of Portland, are in the process of completing the draft Feasibility Study (FS) and submitting that work to the Oregon Department of Environmental Quality (DEQ) for the Willamette Cove site. Regarding the in-water work, negotiations are ongoing between EPA and the PRPs who would perform the in-water work.

Q5: If Tribal fishing is a big risk, why has dermal exposure to sediment not been considered as part of the risk assessment?

A5 (from EPA): Dermal exposure to in-water sediment and beach sediment was considered in the Human Health Risk Assessment. The Human Health Risk Assessment evaluated a range of dermal exposure scenarios and determined that dermal contact to sediment by tribal fishers presented the greatest dermal exposure risk at RM 6W and 7W. Other exposure scenarios for in-water workers, dockside workers, divers, fishers, houseless community members, and recreational beach users were not found to pose unacceptable risks to human health.

Q6: Are there additional chemicals in the Portland Harbor Superfund site where the cPAHs are located that merit cleanup?

A6 (from EPA) Yes, there are additional chemicals at the Portland Harbor Superfund Site where cPAHs are located that merit cleanup. While cPAHs are often co-located with other contaminants of concern (COCs), this proposed ESD is only considering cPAHs. Remedial action levels and cleanup levels for other chemicals are unaffected by the ESD and will be addressed by the Portland Harbor cleanup consistent with the 2017 ROD.

Wrapping Up and Next Steps

The Facilitator thanked attendees for their time and thoughtful participation. Following the federal government shutdown, the March 13, 2019 public forum was rescheduled to Wednesday, April 17th at Portland State University (PSU). More information about this next public forum will be coming soon.