Programmatic Institutional Control Implementation and Assurance Plan

Portland Harbor Superfund Site

Prepared by:

City of Portland and State of Oregon

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Prepared for:

U.S. Environmental Protection Agency

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This Programmatic Institutional Control Implementation and Assurance Plan (Programmatic IC Plan) represents U.S. Environmental Protection Agency's (EPA's) best knowledge as of September 2022. It is anticipated that the Programmatic IC Plan will be amended prior to remedial action in order to fully align with conditions in remedial action settlement agreements that have yet to be executed. As the institutional controls are identified in the Record of Decision, EPA does not anticipate substantive changes in the overall institutional control approach to the site.

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Abbreviations and Acronyms

area-specific IC Plans	area-specific Institutional Control Implementation and Assurance Plans
BDS	City of Portland Bureau of Development Services
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
City	City of Portland
Coast Guard	United States Coast Guard
COC	contaminant of concern
CUL	Cleanup Level
CWA	Clean Water Act
DDT	dichlorodiphenyltrichloroethane
DDx	The sum of dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethane (DDD), and dichlorodiphenyldichloroethene (DDE)
dioxins/furans	polychlorinated dibenzo-p-dioxins and furans
EES	Easement and Equitable Servitude
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
Fish Advisory	Oregon Health Authority's Lower Willamette River Fish Advisory
GIS	geographic information system
Harbor	Portland Harbor Superfund Site
IC	institutional control
IMP	Information Management Plan
IMS	Information Management System
JPA	Joint Permit Application
Marine Board	Oregon State Marine Board
MCHD	Multnomah County Health Department
MNR	monitored natural recovery
NOAA	National Oceanic and Atmospheric Administration
OAR	Oregon Administrative Rule
ODEQ	Oregon Department of Environmental Quality
ODSL	State of Oregon Department of State Lands
OHA	Oregon Health Authority
Order on Consent	Administrative Settlement Agreement and Order on Consent for Remedial Design of Site-Wide Institutional Controls Implementation and Assurance Plan and Information Management Plan
ORS	Oregon Revised Statute
OSWER	Office of Solid Waste and Emergency Response
PAH	polycyclic aromatic hydrocarbon
PCBs	polychlorinated biphenyls
PHSS	Portland Harbor Superfund Site

Port	Port of Portland
Programmatic IC Plan	Programmatic Institutional Control Implementation and Assurance Plan
PSET	Portland Sediment Evaluation Team
PTW	Principal Threat Waste
RAL	Remedial Action Level
RAO	remedial action objective
RHA	Rivers and Harbors Act of 1899
River Patrol	Multnomah County Sheriff's Office River Patrol
RNA	Regulated Navigation Area
ROD	Portland Harbor Superfund Site Record of Decision
SEMS	Superfund Enterprise Management System
State	State of Oregon
USACE	United States Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard

Executive Summary

The Portland Harbor Superfund Site (PHSS or Harbor) is one of the most complex Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sediment cleanup sites in the nation. It consists of a nearly 10-mile stretch of the Lower Willamette River in Portland, Oregon. In 2017, the U.S. Environmental Protection Agency (EPA) issued the Record of Decision (ROD) for the PHSS. The ROD describes the remedy which addresses the media of contaminated sediments, groundwater, surface water, and riverbank soil by actively remediating elevated concentrations of contaminants of concern (COCs) in these media and uses monitored natural recovery for the remaining lower contaminant concentration areas. The ROD states that performing parties[1] will implement institutional controls (ICs) as part of remedy implementation. EPA will utilize an adaptive management approach to IC implementation and maintenance so informed decisions are made throughout the remedial process.

EPA defines ICs as legal and administrative controls used to minimize the potential for exposure to contamination and/or protect the integrity of the remedy. As described in the ROD, the EPA will require Harbor-wide and area-specific ICs to enhance the effectiveness of the remedy. The objectives of ICs are to: (1) minimize the potential for human or ecological receptors to be exposed to the COCs; (2) protect engineered remedies such as engineered caps and enhanced natural recovery zones; and (3) prevent contaminated sediments from being exposed in the future by human or natural processes. Consumption of resident fish is the primary way that people could come into contact with contaminants at the PHSS. The final remedy includes the maintenance of the Oregon Health Authority's Lower Willamette River Fish Advisory (Fish Advisory), a Harbor-wide IC, which was established in 2004 and updated in 2018.

In November 2019, the City of Portland and the State of Oregon, by and through its Department of State Lands (ODSL) and Department of Transportation, entered an Administrative Settlement Agreement and Order on Consent[2] (Order on Consent) with EPA to develop this PHSS Programmatic Institutional Control Implementation and Assurance Plan (Programmatic IC Plan) and an Information Management Plan (IMP) for the development of a PHSS Information Management System (IMS). This Programmatic IC Plan facilitates coordinated Harbor-wide IC planning and describes applicable ICs and the process for performing parties to document and track IC implementation, maintenance, enforcement, modification, and termination. The Programmatic IC Plan provides common, PHSS-specific guidance for performing parties as they prepare area-specific Institutional Control Implementation and Assurance Plans (area-specific IC Plans). The IMS will include PHSS cleanup data and an IC Registry to coordinate long-term maintenance of, and access to, area-specific information, environmental data management, and ICs in an online format available to performing parties, agency personnel, and the public. Details regarding this IMS are provided in a separate IMP, issued March 18, 2022.

The City and the State performed a Needs Assessment in 2020 to increase understanding of data and IC management needs of multiple stakeholder groups. Input was gathered from community members, businesses, performing parties, Tribal Governments, and agency representatives to help shape this Programmatic IC Plan. Stakeholder feedback that was outside of the scope of the Programmatic IC Plan was referred to other potentially applicable projects or agencies.

[1] As used in this document, "performing party" may refer to the party performing the design or remedial action, depending on the phase of the cleanup.

[2] Administrative Settlement Agreement and Order on Consent for Remedial Design of Site-Wide Institutional Controls Implementation and Assurance Plan and Information Management Plan, CERCLA Docket No. 10-2019-0151. Links to the laws, rules, codes, and guidance documents mentioned in the footnotes are available, keyed by section and footnote number, in Appendix A-2.

Harbor-Wide Institutional Controls

Current Harbor-wide ICs include the following:

- The Fish Advisory and associated Education and Outreach Program
- Clean Water Act (CWA) Section 404 Letter of Agreement between EPA, Oregon Department of Environmental Quality (ODEQ), and U.S. Army Corps of Engineers (USACE) concerning the Lower Willamette River.[3]

The Fish Advisory provides the recommended maximum number of meals per month of resident fish and shellfish that can be ingested to avoid long-term adverse health effects. Because many vulnerable communities in the Portland metro area rely on fish caught from this section of the river as a food source, comprehensive education and outreach are important to protect human health. Multnomah County Health Department leads the Fish Advisory Education and Outreach Program.

Under a 2002 CWA Section 404 Letter of Agreement (Section 404 Letter of Agreement), EPA, ODEQ, and USACE coordinate on reviewing CWA Section 404 permits for dredge and fill activities between the confluence of the Willamette and Columbia Rivers and the Willamette Falls. Specifically, the Section 404 Letter of Agreement states: EPA will review permits and permit applications and make recommendations to USACE, which may include permit conditions, modification, or work stoppage. As such, the Section 404 Letter of Agreement acts as an IC to prevent exacerbation of existing contamination.

Area-Specific Institutional Controls

This Programmatic IC Plan describes area-specific ICs to be evaluated when designing the remedy for each sediment management area and each contaminated riverbank, as well as IC monitoring and maintenance requirements, enforcement responsibilities, and how the ICs can be modified or terminated. As outlined in EPA guidance, ICs can be more effective when layered (i.e., when multiple ICs protect the same remedial area). Performing parties should evaluate utilizing multiple ICs for overall effectiveness. The Programmatic IC Plan describes the following types of area-specific ICs applicable for the PHSS:

Government Controls are restrictions on land or resource use, using the regulatory authority of a government entity, and include the following:

- U.S. Coast Guard Regulated Navigation Areas (waterway use restrictions) to protect in-water structures
- Oregon boating regulations (waterway use restrictions) to protect in-water structures
- Oregon 811 One-Call System (also known as Call Before You Dig) required for all performing parties

Enforcement and Permit Tools with IC Components are legal tools, such as permits, administrative orders, and consent decrees, that limit certain site activities or require the performance of specific activities. For the PHSS, this category has tools that may be applied sitewide or to a specific project area.

Proprietary Controls are land use restrictions and requirements established through agreements between the property owner and another party. The selected in-river remedy for the PHSS encompasses submerged and submersible land owned by the State, as well as submerged and submersible land, and other riverbank areas, not owned by the State. An Easement and Equitable Servitude (EES) is one tool for the implementation of proprietary controls. EPA and ODEQ are working to develop a model EES for parties to use in riverbank and in-water properties not owned by the State. If the State sells any submerged or submersible land subject to land use restrictions to protect the remedy, an EES will likely be required.

[3] EPA plans to update the Letter of Agreement with ODEQ and USACE.

Informational Devices provide information or notification to the public and other interested parties that contamination remains in the remedial area, and include the following:

- Signs and buoys
- Maps
- Visual indicators on riverbank caps, such as physical barriers or demarcation layers
- Deed notices
- PHSS IC Registry – required for all performing parties

Area-Specific Institutional Control Plans

This Programmatic IC Plan provides guidance to performing parties on the elements to be included and addressed as part of area-specific IC Plans. Each area-specific IC Plan must detail the ICs selected and include a rationale for the selection of each control. All performing parties addressing areas where contamination is left in place must participate in the Oregon 811 One-Call System, as well as the PHSS IC Registry. After remedy implementation, each performing party will prepare an IC Implementation Report. To evaluate the effectiveness of the ICs, each performing party will prepare periodic IC Inspection Reports that describe the IC monitoring, maintenance, and enforcement activities. The performing parties will: (1) describe incidents with the potential to compromise the effectiveness of the remedy that occurred during the reporting period; and (2) provide a plan to address these issues.

As part of the EPA Five-Year Review process, EPA will review the IC Inspection Reports in addition to other data to evaluate the performance of each IC and make a protectiveness determination. Based on this review, EPA may require modifications to the area-specific IC Plan. Reporting information and frequency may be modified by EPA as needed to support the Five-Year Review process.

Permitting for Non-CERCLA Activities

Following remedy implementation, permits will generally be required at the PHSS for ongoing non-CERCLA in-water and riverbank work (e.g., maintenance dredging, pile removal, pier construction, grading). After remedies are implemented, there is a risk that permitting agencies could authorize activities that could negatively impact a remedy if permit applicants do not provide sufficient information on the work to be conducted. The primary agencies that will be involved in applicable permitting activities include the following:

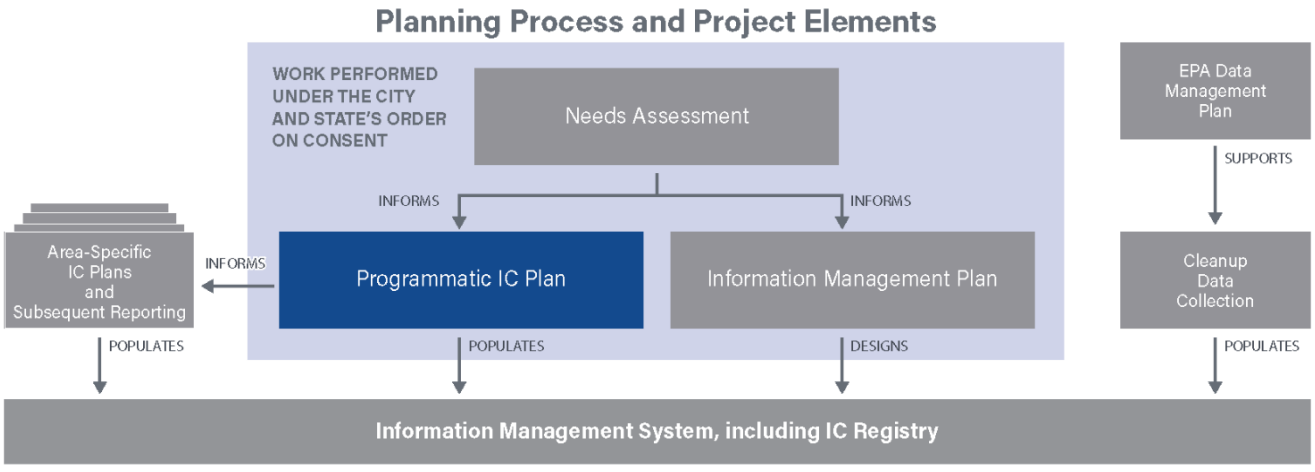
- **USACE and EPA** – The USACE issues permits under Section 404 of the CWA[4] and Section 10[5] of the Rivers and Harbors Act of 1899 (RHA).[6] EPA reviews CWA Section 404 and RHA Section 10 permits and permit applications for any facility or area located in the PHSS, and makes recommendations to USACE, which may include permit conditions, modifications, or work stoppage. Section 404 of the CWA prohibits any person from discharging dredge or fill material into the waters of the United States (including the Willamette River) without first obtaining a permit from USACE. Section 10 of the RHA requires a permit for all work in, over or under waters of the United States. The USACE does not deny an application based on potential impact to a CERCLA remedy, but coordinates with EPA and the applicant to avoid damaging the remedy. EPA's CERCLA enforcement may be used in conjunction with USACE/EPA's coordination on CWA Section 404/RHA Section 10 permits.

[4] Title 33 United States Code (USC) § 1341 and § 1344; see links in Appendix A-2.
[5] The U.S. Coast Guard issues permits under Section 9 of the Rivers and Harbors Act.
[6] Title 33 USC § 401 and § 403; see links in Appendix A-2.

- **ODEQ** – ODEQ issues CWA Section 401 water quality certifications for non-CERCLA work where a federal permit or license is being issued. ODEQ coordinates with EPA to maintain consistency between non-CERCLA activities and the CERCLA remedial action. The CWA Section 401 water quality certification is a determination that discharges to waters of the United States will comply with applicable provisions of the CWA, including state water quality standards. CWA Section 401 also allows ODEQ to include additional conditions that are necessary to assure that the permit or license will comply with other requirements of state law. A federal permit or license cannot be issued until a CWA Section 401 water quality certification is received.
- **ODSL** – ODSL issues permits for in-water activities, such as removal or fill activities, including those related to construction, such as building pilings and docks. ODSL can deny permits based on the potential impacts to proposed or existing uses. ODSL can also add permit conditions to existing permits upon renewal, such as requirements to remove piling using techniques that avoid adverse impact to the remedial action.
- **City of Portland Bureau of Development Services** – The City issues permits for in-water and riverbank areas for activities such as underground line installation, grading, bridge and dock construction, and retaining wall construction. The City does not enforce deed restrictions or private easements and thus it does not have the authority to deny a permit based on those proprietary controls. Performing parties cannot presume that the land use permitting process will enforce use restrictions to protect in-water and riverbank remedies.

Information Management System and Institutional Control Registry

The IMS will serve as a centralized access point for information for the entire PHSS. It will include an IC Registry that provides IC information to the public, performing parties, Tribal Governments, and agency personnel (see figure below). The IC Registry will be most effective when performing parties provide accurate and timely information to EPA. The IC Registry will provide access to IC information, such as IC locations, contact information, area-specific IC Plans, IC Implementation Reports, IC Inspection Reports, and other relevant documents and information. The IC Registry and IMS are described in the IMP, which was issued in March 2022.



SECTION 1: **Introduction**

In November 2019, the City of Portland and State of Oregon, by and through its Department of State Lands (ODSL) and Department of Transportation, entered an Administrative Settlement Agreement and Order on Consent[7] (Order on Consent) with the U.S. Environmental Protection Agency (EPA) to develop this Portland Harbor Programmatic Institutional Control Implementation and Assurance Plan (Programmatic IC Plan or Plan). Portland Harbor, in Portland, Oregon, is located in the Lower Willamette River. This Programmatic IC Plan facilitates coordinated institutional control (IC) planning for the entire Portland Harbor Superfund Site (PHSS or Harbor) and outlines the process for performing parties[8] to document and track IC implementation, maintenance, enforcement, modification, and termination. The Programmatic IC Plan provides common PHSS-specific guidance to performing parties preparing area-specific Institutional Control Implementation and Assurance Plans (area-specific IC Plans) that help to minimize the potential for exposure to contamination and/or protect the integrity of a remedial action.

EPA guidance and the *Portland Harbor Superfund Site Record of Decision* (ROD) Section 17 define ICs as non-engineered instruments—such as administrative and legal controls—that help to minimize the potential for exposure to contamination and protect the integrity of a remedial action (EPA, 2012a; EPA, 2017). To achieve the long-term goals of the remedy, performing parties manage the IC throughout its life cycle—from planning and implementation through maintenance, enforcement, modification, and termination.[9]

This Programmatic IC Plan establishes an overall process that documents and tracks Harbor-wide and area-specific IC implementation, monitoring, and enforcement. The following guidance documents issued by EPA and the Interstate Technology and Regulatory Council informed the preparation of this Plan:

- *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*, EPA Office of Solid Waste and Emergency Response (OSWER)[10] 9355.0-74FS-P (EPA, 2000a)
- *Institutional Controls: A Citizen's Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tanks, and Resource Conservation and Recovery Act Cleanups*, OSWER 9255.0.98 and EPA/540/R-04/004 (EPA, 2005a)
- *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89 and EPA/540/R-09/001 (EPA, 2012a)
- *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77 and EPA/540/R-09/02 (EPA, 2012b)
- *Long-term Contaminant Management Using Institutional Controls*, Interstate Technology and Regulatory Council (ITRC, 2016)

[7] Administrative Settlement Agreement and Order on Consent for Remedial Design of Site-Wide Institutional Controls Implementation and Assurance Plan and Information Management Plan, CERCLA Docket No. 10-2019-0151; see link in Appendix A-2.
[8] As used in this document, "performing party" may refer to the party performing the design or remedial action, depending on the phase of the cleanup.
[9] Where wastes remain in place, ICs will typically be required in perpetuity. This Programmatic IC Plan describes the step of termination to be consistent with EPA guidance even through this will not typically occur.
[10] In 2015, EPA OSWER changed its name to the Office of Land and Emergency Management. However, the OSWER acronym appears on the cited guidance documents at the time of publication and is therefore used throughout this Plan.

These documents describe the various ICs available, including those in the ROD, and best practices for managing ICs throughout their life cycles. In addition, the guidance documents specify that establishing methods for monitoring and reporting the effectiveness of the ICs is important for the success of a long-term IC maintenance program. Links to these documents are included in Appendix A-1.

Effective coordination is essential for the successful implementation and maintenance of the selected remedy, as the PHSS is a working harbor and one of the most complex federal sediment cleanup sites in the nation. Multiple performing parties, property owners, government agencies, Tribal Governments, and diverse communities are affected by the cleanup at the PHSS. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the 2017 ROD selected remedy is to: (1) actively remediate contaminants of concern (COCs) above Remedial Action Levels (RALs) and Principal Threat Waste (PTW) thresholds; (2) use monitored natural recovery (MNR) for areas above Cleanup Levels (CULs); and (3) implement ICs to protect human health and the environment and prevent damage to the remedies (EPA, 2017). Performing parties will remediate the PHSS in multiple area-specific portions of the river, each generating IC information and cleanup data.

The City and the State performed a Needs Assessment to understand the needs of stakeholders regarding PHSS cleanup data and IC management. This assessment was completed in November 2020. EPA approved the *Final Needs Assessment Report* on March 2, 2021. Section 1.6 of this Plan is a summary of the Needs Assessment's results. Feedback obtained during the Needs Assessment process informed the development of this Programmatic IC Plan.

1.1 Objectives of the Programmatic Institutional Control Implementation and Assurance Plan

The Order on Consent Statement of Work describes the Programmatic IC Plan as follows:[11,12]

> "*A Programmatic ICIAP* [Institutional Control Implementation and Assurance Plan] *will be prepared to establish an overall process that documents and tracks Harbor-wide and site-specific IC implementation, monitoring and enforcement. This Programmatic ICIAP is a coordination document for the entire Harbor* [PHSS] *and will not replace the need for ICIAPs at individual project areas completed by performing parties at those areas. Rather, it will be a living document that provides the framework for the IC program for the Harbor* [PHSS] *and the formal repository for all Harbor-wide and site-specific IC information.*"

As such, the objectives of the Programmatic IC Plan are as follows:

- Describe the activities associated with implementing and ensuring the long-term stewardship of the PHSS ICs, which include agency coordination and the Fish Advisory and associated Education and Outreach Program.
- Identify potential area-specific ICs and provide an overview of the processes for the implementation, enforcement, modification, and termination of applicable ICs.
- Describe the necessary elements of area-specific IC Plans, including IC monitoring, reporting, and record-keeping to document IC compliance, and how this documentation will be maintained in an IC Registry and accessible through the PHSS Information Management System (IMS).

[11] The Order on Consent Statement of Work refers to a "Programmatic ICIAP" and "ICIAPs." These terms have been simplified and are referred to as the "Programmatic IC Plan" and "area-specific IC Plans" in this document.
[12] The Order on Consent Statement of Work refers to area-specific ICs as "site-specific ICs." The term "area-specific ICs" was chosen for this document for clarity.

- Describe how permitting processes for permits issued after remedy construction for non-CERCLA activities can be leveraged so that activities that may adversely impact the engineered controls will not be allowed.
- Describe the role of performing parties in submitting IC information to the IC Registry.

1.2 Institutional Control Terminology

Planning, implementation, maintenance, enforcement, modification, and termination are the terms used to describe the life cycle stages of an IC (EPA, 2012a). Throughout the Programmatic IC Plan, ICs are described in terms of these stages, as defined below:

- **Planning** includes activities leading up to the implementation of an IC. This stage may include an evaluation of the type(s) of use restrictions necessary at an area-specific location, potential ICs that might be relied upon to implement the selected restrictions, potential parties that may be responsible for long-term IC activities, criteria for terminating the ICs, issues that might impact the effectiveness of the ICs, estimated costs, and funding sources.
- **Implementation** includes activities undertaken to put the ICs in place, such as funding, drafting, negotiating, and signing the specific documents necessary to legally establish the IC.
- **Maintenance** includes long-term monitoring and reporting activities that may be necessary to routinely and critically evaluate the effectiveness of ICs in consideration of remedial objectives and cleanup goals.
- **Enforcement** includes actions taken to address ICs that have been compromised or improperly implemented or maintained. The IC enforcement process may begin with informal communications and discussions regarding compliance. If these communications are not successful, more formal legal steps may be taken. The entity responsible for enforcement differs based on the IC.
- **Modification and Termination** include legal or administrative steps taken to modify an IC (e.g., changing the area that the IC restricts or modifying monitoring requirements) or terminate an IC (e.g., because capped contaminated sediments were subsequently removed).

1.3 Limitations of Institutional Controls

ICs are an important component of the overall remedy and the capability to implement ICs in a reliable and enforceable manner is a factor in the effectiveness of the entire remedy (EPA, 2005a). As described in the Order on Consent's Statement of Work, the Programmatic IC Plan and area-specific IC Plans should detail mechanisms to ensure that IC objectives are met and that the remedy is protective. Evaluating the limitations of ICs and taking steps to mitigate for the limitations helps ensure the protectiveness of the remedy (EPA, 2000a). An adaptive management approach to implementation and maintenance of harbor-wide and area-specific ICs will be utilized to help address these limitations and protect the remedy.[13]

As stated in EPA guidance (2005b), the "*reliability and effectiveness of ICs are of particular concern with sediment alternatives, whether they are used alone or in combination with MNA* [Monitored Natural

[13] As defined by EPA (EPA, 2018a), adaptive management is a "*formal and systematic site or project management approach centered on rigorous site planning and a firm understanding of site conditions and uncertainties. This technique, rooted in the sound use of science technology, encourages continuous re-evaluation and management prioritization of site activities to account for new information and changing site conditions.*" This approach can help build stakeholder consensus, ensure consistency with good engineering practices and adherence to regulatory requirements, and establish transparent documentation of the uncertainties and risks and the approaches to addressing them.

Attenuation], *in-situ capping, or sediment removal*."[14] All ICs have limitations. This section of the Programmatic IC Plan identifies these limitations.

1.3.1 Education and Outreach for the Harbor-Wide Fish Advisory Institutional Control

The Harbor-wide fish advisory IC consists of two key components: the Lower Willamette River Fish Advisory (Fish Advisory), which is performed and updated by the Oregon Health Authority (OHA), and the Multnomah County Health Department (MCHD) Education and Outreach Program to educate the public on safe fish consumption limits. The educational outreach associated with any fish advisory relies, in part, on modifying human behavior. EPA guidance states (EPA, 2005b):[15]

> "*...in many cases ICs have been only partially effective in modifying human behavior, especially in the case of voluntary or advisory controls. Although fish consumption advisories can be an important component of a sediment remedy, it should be recognized that they are unlikely to be entirely effective in eliminating exposures. Where advisories or bans are relied upon to reduce human health risk for long periods, public education, and where applicable, enforcement by the appropriate agency, are critical*."

The Education and Outreach Program will incorporate public education by implementing an EPA-approved adaptive management approach that allows the MCHD the flexibility needed to make adjustments to the approach. Changes to the education and outreach approach will be consistent with EPA's ROD, 2019 Explanation of Significant Differences (ESD), and subsequent decision documents. Section 3.1 of this Plan provides a discussion on the Education and Outreach Program and actions for mitigating the limitations.

1.3.2 Area-Specific Institutional Controls

Area-specific ICs also have limitations. ICs for contaminated riverbanks, sediment management areas, and stable buried contamination will be identified by the performing parties that are responsible for these ICs. The IC effectiveness must be maintained as long as the IC is needed to protect human health, the environment, and the remedy. Although specific ICs may rely on government regulations or prohibitions, those federal, state, and local government entities implement their programs in accordance with their authorities and priorities. These governmental entities are not specifically enforcing an IC. That is generally not their role.

Performing parties are responsible for funding and implementing ICs. EPA is responsible for evaluating the effectiveness of ICs and in some cases, enforcing them. Performing parties will recommend to EPA which ICs will best meet area-specific needs. EPA will decide which ICs are necessary for protecting remedies that leave contamination in place.

Performing parties will evaluate the limitations of ICs in their area-specific IC Plans to determine which ICs will best meet area-specific remedy needs. EPA recommends that each IC proposed by a performing party be "*discussed in an area-specific plan in sufficient detail to support a conclusion that effective implementation can be reasonably expected*" (EPA, 2005a). To mitigate for IC limitations, EPA recommends evaluating the use of multiple IC types at the same time (known as layering) to increase IC protectiveness of human health, the environment, and the remedy (EPA, 2012a). EPA will evaluate the overall effectiveness of the IC program

[14] Page 7-15 of the guidance.
[15] Page 7-15 of the guidance.

implemented by each performing party and may require modifications. Section 4 of this Plan provides area-specific IC limitations and actions for mitigating the limitations.

1.4 Components of the Programmatic Institutional Control and Assurance Plan

This Programmatic IC Plan establishes an overall process to document and track Harbor-wide and area–specific IC implementation, maintenance, enforcement, modification, and termination.

This Programmatic IC Plan is organized as follows:

- **Section 2 provides an overview of the selected remedial alternative for the PHSS** as provided in the ROD, including descriptions of the planned remedy, areas where ICs are necessary, and existing ICs established under EPA oversight.
- **Section 3 describes Harbor-wide ICs** consisting of the Fish Advisory and associated Education and Outreach Program, and the Clean Water Act (CWA) Section 404 Letter of Agreement.
- **Section 4 describes area-specific ICs** available to performing parties at the PHSS. The section is organized by EPA's categories for ICs: government controls, enforcement tools, proprietary controls, or informational devices. Information regarding implementation, maintenance, enforcement, modification, and termination is provided for each IC.
- **Section 5 describes agency coordination, authorities, and permitting for non-CERCLA activities** that could potentially impact engineering controls once remedial activities have been conducted. The section describes these non-CERCLA activities, and the agencies and types of permits involved.
- **Section 6 describes the elements to be included in area-specific IC Plans**. Individual performing parties will select the appropriate ICs for their remedial area based on area-specific requirements and the criteria outlined in Section 4. This Programmatic IC Plan describes the elements to be included in each area-specific IC Plan and a programmatic approach to ongoing IC maintenance and reporting.
- **Section 7 discusses the IMS and IC Registry** to be developed for the PHSS. The IMS and IC Registry will provide access to PHSS information, environmental data management, and ICs in a centralized data management system. Details regarding this IMS are provided in a separate Information Management Plan (IMP), which was issued on March 18, 2022 (GeoEngineers, 2022).
- **Section 8 provides the references** used to prepare this Plan.

1.5 Roles and Responsibilities

Effective IC coordination will require the continued involvement of key stakeholders. These stakeholders and their future roles in PHSS ICs include the following:

- **EPA** has jurisdiction over the remedial action at the PHSS. EPA will review proposed engineering controls (e.g., caps) and ICs to be used to protect the remedy. EPA is responsible for overseeing the effectiveness of ICs and enforcing against the performing parties if the area-specific IC Plan is not followed. EPA also has the authority to enforce against any third parties that may jeopardize the remedy, which may not be performing parties. For example, if a CWA Section 404 dredging or filling activity re-contaminates the sediment surface, EPA may choose to use its enforcement authorities to require cleanup of this area.
- **Performing Parties** are responsible for planning, implementing, and maintaining ICs so long as contamination remains in place.

- **Government Agencies Other than EPA** may be responsible for implementation, maintenance, enforcement, modification, and termination of some ICs or the regulatory programs that have IC components. However, enforcement of an area-specific IC Plan is generally not the role of these agencies; EPA maintains ultimate authority for remedial actions at the PHSS.
- **Tribal Governments** will have opportunities to provide feedback on ICs, both as a government entity and as members of the Technical Coordinating Team for the PHSS with EPA and other government agencies. Tribal Governments will have the opportunity to review, discuss, and comment on key documents, reports, permits, and agreements (e.g., the Fish Advisory, proprietary controls on State-owned submerged and submersible lands). EPA will coordinate with Tribal Governments on proposed area-specific IC plans provided by performing parties as part of the 30% design document and subsequent updates in later design documents. Tribal Governments can report IC violations (e.g., waterway use restrictions) or damage to IC signs and buoys.
- **The Public** will have opportunities to provide feedback on certain types of ICs at specific stages in the IC life cycle. The public may report IC violations (waterway use restrictions) or damage to IC signs and buoys.

1.6 Summary of Needs Assessment

A Needs Assessment was conducted as part of planning for the Programmatic IC Plan. The City and State invited stakeholder groups to provide input regarding how they obtain and use IC information and the information needed to maintain and enforce ICs. Details about the process can be found in Section 2 of the *Final Needs Assessment Report* (Cascadia and GSI, 2021). The results of the Needs Assessment provided valuable information on the following:

- The communication of, and adherence to, the Fish Advisory
- Information needed by government entities issuing permits and authorizations in the Willamette River that could impact the PHSS remedy
- Area-specific IC maintenance information to be provided by performing parties

Input from the Needs Assessment was used in part as the basis for this Programmatic IC Plan. The information received through the Needs Assessment is summarized below. Stakeholder feedback from the Needs Assessment was categorized by topic and reviewed to determine whether it fits within the Order on Consent Statement of Work and could be addressed as part of the IMP or Programmatic IC Plan. Stakeholder input outside of the scope of the Programmatic IC Plan was forwarded to other potentially applicable projects or agencies. For example, EPA met community requests for more information regarding historical context and community experiences through the creation of the PHSS StoryMap.[16] Additionally, the City addressed community desires for greater investment in public participation in the cleanup process through its dedicated Portland Harbor community grants program.

The following subsections provide a summary of the Needs Assessment findings related to ICs and non-CERCLA action agency coordination.

1.6.1 Institutional Control Results

Stakeholders have commented that it is difficult to access IC information and cleanup data and they support the development of a centralized IMS. Stakeholders prefer that the IMS and IC Registry include interactive

[16] EPA Portland Harbor Superfund Site, Connecting to the Willamette River StoryMap

maps that allow users to query and obtain information on existing ICs. Other themes expressed often within stakeholder groups include the following:

- **Community Group** participants expressed the need for a combined communication and notification approach to support public awareness of ICs that will facilitate compliance and monitoring of ICs. For example, Community Group participants emphasized the need for digital tools, person-to-person engagement, and leveraging existing networks established by community members and groups perceived as trustworthy.
- **Government Agencies and Tribal Governments** (referred to as the Government Group) obtain IC information from applications for permits and authorizations and noted that any omissions or mistakes made by the applicant create information gaps for the Government Group. To independently confirm information, Government Group members need easy access to IC locations, the type of restrictions in those locations, and how they are being managed. Tribal Governments need access to performing parties' reports to track IC information.
- **Business Group** participants (including performing parties, businesses, waterfront property owners, and academic institutions) need to know about existing ICs and IC locations and want tools—such as a tool for finding the government agencies and Tribal Governments involved in ICs—for developing area-specific IC Plans.

1.6.2 Agency Coordination and Review Results

As part of the Needs Assessment, participants in the Government Group indicated that a centralized location to obtain and view applicable ICs, analytical data, navigation dredging, and monitoring/management information associated with the PHSS would help with processing permits and authorizations. The IMS and IC Registry (see Section 7) will serve as a centralized access point of IC information for permitting agencies authorizing in-water work (e.g., maintenance dredging, pile removal) and shoreline work (e.g., riverbank redevelopment).

Government Group participants indicated that they are currently coordinating with one another, and they frequently share data with EPA, the City, ODSL, USACE, ODEQ, Oregon Department of Fish and Wildlife, and the Oregon State Marine Board (Marine Board).

SECTION 2: **Summary of the Portland Harbor Superfund Site**

The sections below provide an overview of the PHSS remedy, the ICs to be implemented as provided in the PHSS ROD, and the ICs established in portions of the PHSS as part of implemented response actions.

2.1 Description and Overview of the Portland Harbor Superfund Site

The PHSS is located between approximately river miles 1.9 and 11.8 of the lower Willamette River. The PHSS was added to EPA's National Priorities List in December 2000, "*mainly due to concerns about contamination in the sediments and the potential risks to human health and the environment from consuming the fish*" (EPA, 2017). The ROD, issued in January 2017, describes the selected in-river remedy for the PHSS.[17]

EPA is the lead agency for the in-river portion of the PHSS, which includes sediments, biota, surface water, groundwater, and riverbanks (EPA, 2017). ODEQ is the lead agency for addressing contamination in the upland portions of the PHSS, defined as areas landward of the top of the Willamette River riverbank. These roles were outlined in a 2001 memorandum of understanding between EPA, ODEQ, natural resource trustees, and the Native American Tribal Governments[18] that have an interest in the affected resources (EPA et al., 2001). Under its Portland Harbor Joint Source Control Strategy and Environmental Cleanup Site Information program, ODEQ is addressing upland sources of contamination that adversely impact or have the potential to adversely impact the Willamette River. ODEQ implements its Joint Source Control Strategy to identify sources in upland areas above screening level values and ROD CULs and implements source control measures to prevent COCs from continuing to migrate to groundwater, riverbanks, waterway sediments, and surface water.

Decades of heavy industrial, marine, commercial, and defense activities have occurred throughout the PHSS. Since the late 1800s, Portland Harbor has been an active trade corridor and the river has undergone significant modifications, such as channelization and redirection, to accommodate the shipping industry. Today, the PHSS is still an active place of commerce, recreation, cultural significance, and a critical migratory fish habitat.

EPA identified 64 COCs in the PHSS ROD (EPA, 2017). Focused COCs provided in the ROD include polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated dibenzo-p-dioxins and furans (dioxins/furans), and pesticides such as dichlorodiphenyltrichloroethane (DDT). These COCs are linked to human health and ecological dietary risks. Potential pathways of contaminants to the PHSS include soil, stormwater, groundwater, and riverbanks.

Major findings from the baseline human health risk assessment conducted by EPA (EPA, 2016) include the following:

- Human health risks from consuming fish or shellfish are higher than the risks from direct contact with sediments, surface water, or seeps.
- Consuming resident fish species results in the highest risk.
- PCBs are the primary risk contributor related to fish consumption.

[17] The in-river portion of PHSS includes both in-water sediments and riverbank soil (EPA, 2017).
[18] Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Grand Ronde Community of Oregon, Confederated Tribes of Siletz Indians, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe.

Major findings from the baseline ecological risk assessment (EPA, 2016) include the following:

- PCBs, DDx,[19] PAHs, and dioxins/furans pose the highest potentially unacceptable ecological risks in the PHSS.
- COCs in sediments are typically found in areas that also have unacceptable risks for benthic species, such as shellfish.
- PCBs are the primary risk contributor to mammals and birds.

The OHA Environmental Health Assessment Program, in a cooperative agreement with the Agency for Toxic Substances and Disease Registry, evaluated the public health risks associated with the contamination at the PHSS (OHA, 2011). According to OHA, it is safe to swim in the Willamette River. OHA concluded that, with a few exceptions,[20] "s*wallowing or touching chemical contaminants in water, beach sediment, and bottom sediment was not expected to harm the health of people who recreate (i.e., boat, swim, beach comb* [sic]*, etc.) or work within the Portland Harbor Superfund Site*" (OHA, 2011).

The ROD established remedial action objectives (RAOs) that address media-specific goals to reduce the risk to human health and ecological receptors, and the recontamination potential at the PHSS. The ROD remedy, including engineered structures and ICs, is designed to achieve these RAOs.

2.1.1 In-Water Remedy

The selected remedy identified in the ROD includes a combination of technologies, including sediment capping, dredging/excavation, in situ and ex situ treatment of contaminated sediments, enhanced natural recovery, and MNR (EPA, 2017). Active remediation is required for sediment exceedances of RAL and PTW thresholds. Monitored natural recovery will be used where sediments are below RALs but above CULs. The remedy relies on ICs to manage the remaining risks associated with fish consumption and to protect the remedy.

Sediment management areas have been identified as part of the ROD (Figure 1). Sediment management areas are areas where natural recovery is not suitable and active remediation is needed to reduce risks to human and ecological communities. The sediment management areas will be refined as additional data are collected during remedial design. ICs will be required to protect engineered remedies—such as engineered caps, in situ treatment areas, and enhanced natural recovery zones—to prevent these contaminated sediments from being exposed in the future by human activities or natural processes.

2.1.2 Riverbank Areas

In accordance with RAO 9 of the ROD,[21] contaminated riverbanks, where they are contiguous with in-river contamination or where they pose a risk of recontamination to the selected remedy, will be a part of the cleanup strategy. EPA states that "*based upon the objectives of the remedial action and when soil/sediment is left in place at concentrations greater than the cleanup levels, ICs can be implemented for non-erodible areas or for active remediation areas*" (EPA, 2021). ICs may be used to address contaminated areas with COC concentrations above CULs that will negatively impact human health, the environment, or the remedy.

[19] DDx is defined as the sum of dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethane (DDD), and dichlorodiphenyldichloroethene (DDE) (EPA, 2017).
[20] The exceptions are the beaches at Willamette Cove and the Northwest Natural Gasco facility.
[21] RAO 9 is related to human health and ecological impacts of riverbanks and states "*reduce migration of COCs in river banks to sediment and surface water such that levels are acceptable in sediment and surface water for human health and ecological exposures*" (EPA, 2017, page 54).

2.1.3 Remedy Design and Construction

EPA issued guidance entitled *Remedial Design Guidelines and Considerations* for the PHSS in 2019 and updated that document in 2021 (EPA, 2021). The guidance outlines the expectations for remedial design consistency throughout the PHSS and provides information on the overall design process. Planning for ICs is an integral part of the design process. As such, ICs will be integrated into the area remedy approach and the draft area-specific IC Plans initially submitted with the 30% design document. The area-specific IC Plan will be updated as warranted in the 60%, 95%, and final design documents.

The 2017 ROD estimates that active remediation will take 13 years to construct. After completion, the levels of contamination in fish tissue are expected to be reduced over time to concentrations comparable to background anthropogenic levels. Short-term monitoring during construction and long-term monitoring post-construction will be conducted to evaluate the long-term effectiveness and functionality of the remedies.

The ROD specifies that ICs will be implemented to do the following:

- Prevent or minimize exposure by humans, wildlife, and aquatic receptors to contaminated sediments and groundwater contained by an engineered cap or other cover.
- Prevent or minimize human, wildlife, and aquatic exposure to contaminated fish and shellfish and to contaminated sediments and groundwater during construction of the selected remedy.
- Maintain the integrity of the engineered components of the selected remedy.

2.2 Overview of Portland Harbor Superfund Site Institutional Controls

This section describes current ICs, roles of ICs in the PHSS cleanup, and methods to terminate ICs upon remedy completion, as applicable.

2.2.1 Institutional Controls Identified in the Record of Decision and Explanation of Significant Differences

The PHSS selected remedy relies on ICs to "*manage remaining risks associated with fish consumption and to protect the remedy*" (EPA, 2021). The ROD states that three types of ICs will be used: (1) fish advisories and educational outreach; (2) waterway use restrictions or regulated navigation areas; and (3) land use and access restrictions. The ESD added an IC for beach signage, which may be used in areas of exposure risks. The descriptions from the ROD and ESD are excerpted below (EPA, 2017; EPA, 2019):

- "**Fish Advisories and Educational Outreach**. Fish advisories and educational outreach will be necessary at the Site since unlimited fish consumption is not possible. Once construction is completed, the CERCLA cleanup-related advisory may be updated to adjust consumption rates based on fish tissue concentrations. Fish advisories will distinguish between anadromous species (e.g., spring Chinook, steelhead, coho, shad, and lamprey) and resident species (e.g., smallmouth bass, brown bullhead, black crappie, and carp). Anadromous species likely have lower contaminant levels and are targeted by a wider and more diverse group of anglers. Resident fish generally have higher levels of contamination because their range is within Portland Harbor, and these types of fish are more targeted by, and more likely to be eaten by, local residents. The advisory is expected to be periodically updated until RAOs and cleanup levels are reached. The outreach program may include: informational meetings, presentations, and workshops targeting affected community groups; development and distribution of informational materials such as brochures or maps; advisory notifications communicated through a variety of culturally

appropriate outlets; installation and maintenance of advisory signs at known fishing locations; and coordination with sport or recreational fishing clubs and licensing locations.

- Waterway Use Restrictions or Regulated Navigation Areas. Where caps will be utilized to contain contamination in navigable areas of the river, waterway use restrictions or RNAs [Regulated Navigational Areas] will be necessary to ensure that the integrity of the cap is maintained in perpetuity. These restrictions may preclude boat anchoring and keel dragging, the use of spuds to stabilize vessels, structure and utility maintenance and repair, and future maintenance activities in areas containing caps. Notifications such as signs and buoys coordinated with the appropriate federal and/or state authorities (e.g., Oregon State Marine Board and U.S. Coast Guard) may be used to warn vessels away from the area. Periodic inspections of RNA notifications will be needed to ensure they are functional and effective and will be evaluated in five-year reviews.
- Land Use/Access Restrictions. Land use or access restrictions will be needed in nearshore areas and riverbanks to maintain the integrity of caps from existing or future activities, such as construction and maintenance of structures and also to protect habitat areas, including compensatory mitigation projects, put in place as a part of the cleanup. Temporary access restrictions may also be needed in riverbank, beach, and in-river areas accessible by people to accomplish the cleanup. DSL has control of state-owned submerged or submersible land that may be subjected to remedial action. Adjacent landowners also may control submerged land and riverbanks. Coordination with DSL and adjacent landowners will be needed to implement land use or access restrictions. Monitoring, including inspections, will be needed to ensure that restrictions are functioning as intended and will be evaluated in statutory five-year reviews.

  Additional IC mechanisms may be developed during remedial design and remedial action to assure all IC objectives are met and the remedy is protective. Other types of controls that likely will be used include coordinated permit reviews of in-river work (e.g., maintenance dredging, pile removal) that will be necessary to minimize recontamination to the Site. It is also possible other ICs may be developed and implemented post-construction completion.
- Beach signage. For beaches where recreational use is possible based on existing and reasonably anticipated land use and any sediment CULs are significantly exceeded, signage or other educational institutional controls may be used until CULs are achieved."

2.2.2 Inter-Agency and Intergovernmental Agreements

In addition to the ROD and ESD ICs, inter-agency and intergovernmental agreements may be developed as ICs to protect the remedy. Inter-agency agreements are between Federal agencies; intergovernmental agreements are between Federal and state, tribal, or local agencies. Within the context of the Programmatic IC Plan, the intent of such agreements is to clarify roles and responsibilities among agencies and Tribal Governments to ensure coordination and that work adheres to laws and regulations. One example is the Section 404 Letter of Agreement between EPA, USACE, and ODEQ to manage CWA Section 404 dredge and fill activities (see Section 5.1.2). Other such agreements may be developed as need arises.

2.2.3 Role of Institutional Controls

As described above, ICs for the PHSS include both Harbor-wide and area-specific elements. The Fish Advisory and associated Education and Outreach Program, and the Section 404 Letter of Agreement are Harbor-wide ICs currently established for the PHSS. Section 3 discusses both these harbor-wide ICs in more detail.

Where in-water and riverbank cleanups leave contamination in place, the role of the area-specific ICs is to do the following:

- Limit human exposure to the contaminated sediments and riverbank soil.
- Protect the remedy by preventing the disturbance of the engineered structures.
- Communicate the presence of protected areas via signs, buoys, and updated navigational charts.
- Protect non-erodible riverbank soil that is above CULs to prevent recontamination.

As part of the remedy design, performing parties must consider the potential impacts of a variety of factors such as erosion/scour, climate change, floods, seismic risks, as well as the potential impacts to habitat (EPA, 2021). ICs will be required to prevent erosion and damage to the planned engineered portions of the remedy and limit human interaction with contaminated sediments and riverbank soil that will remain in place. As part of the initial phase of the remedial design effort, performing parties will propose ICs for EPA review and approval to determine whether ICs meet area-specific needs and are protective of human health, the environment, and the remedy.

Current and potential future use of the remedy areas should be considered when vetting potential ICs. Due to the required duration of the remedy, unanticipated use changes may occur that affect the role of ICs in the areas of concern. Changes may necessitate updates to area-specific IC Plans and modifications of the ICs themselves. Section 4 outlines modification requirements for each IC and Section 6.4.4 addresses area-specific IC Plan modifications.

2.2.4 Termination of Institutional Controls

As stated in the ROD (EPA, 2017), operation and maintenance of the remedy and ICs, long-term monitoring, and EPA Five-Year Reviews will continue in perpetuity. Where waste remains in place in the PHSS, ICs will remain in perpetuity and will not terminate. However, if conditions in the PHSS change EPA may determine that an IC is no longer necessary to protect the remedy, human health, and the environment. Termination of ICs may require the issuance of an ESD or ROD Amendment by EPA, or another mechanism for less-significant IC changes. More information about these processes is provided below:

- **ESD** – During the Five-Year Review, EPA will review the ICs at the PHSS to evaluate their effectiveness. If EPA determines that significant changes to, or termination of, the ICs as specified in the ROD are appropriate, an ESD may be required. Guidance describing this process is provided in *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (EPA, 1999). This CERCLA process does not require public comment or concurrence from other oversight entities for finalization of ESDs; EPA may, however, choose to solicit public comment.
- **Other Mechanisms** – If less significant changes to ICs are warranted based on area-specific conditions (e.g., removal of an RNA), EPA will evaluate these potential changes as part of its Five--Year Review Process and IC protectiveness determination, which is described further in Section 6.4.3. IC changes may be made with EPA's approval between Five-Year Review cycles by modifying the area-specific IC Plan.

2.3 Existing Area-Specific Institutional Controls

Several response actions have already been conducted in the PHSS that include the implementation of area-specific ICs to protect a remedial action. These existing ICs will be incorporated into the IC Registry to ensure a comprehensive set of PHSS ICs with EPA oversight. In developing the Programmatic IC Plan, these sites were also examined to determine which ICs, monitoring, and reporting programs have been

implemented and how this information is or was made available to EPA and stakeholders. A brief summary of these response actions as they relate to ICs for in-water and riverbank areas is provided below.

2.3.1 Former McCormick & Baxter Creosoting Facility

The McCormick & Baxter Creosoting Company Superfund Site (McCormick & Baxter Site), located in the PHSS, stretches from river mile 6.8 to river mile 7.1 on the east side of the Willamette River. The McCormick & Baxter Site was added to the National Priorities List in 1994. ODEQ and EPA entered into a Superfund State Contract in 1996 that was updated in 2005. After the responsible party declared bankruptcy, ODEQ implemented the remedial investigation, feasibility study, remedial action, and ongoing monitoring and maintenance activities.

In March 1996, EPA and ODEQ issued a ROD for the former McCormick & Baxter Site to address contaminated soil, groundwater, stormwater, riverbank soil, and river sediments (EPA, 1996). In September 2005, the remedy at the McCormick & Baxter Site was completed. The actions taken at the McCormick & Baxter Site include the following:

- **Sediments** – A 23-acre armored cap was installed in 2005 (ODEQ and EPA, 2016).
- **ICs** – ODSL issued an easement to ODEQ for the construction and maintenance of the sediment cap that includes specific language closing the easement area to anchoring, grounding, and motor-propelled vessels.[22] An RNA was issued by the U.S. Coast Guard (Coast Guard or USCG) to protect the remedy.[23] The RNA prohibits anchoring and grounding of non-recreational vessels and the use of all motor-propelled vessels in the area of the sediment cap (ODEQ and EPA, 2016). The RNA with specific access and use restrictions is displayed on National Oceanic and Atmospheric Administration (NOAA) navigation charts. The RNA footprint is displayed at a scale of 1:20,000. The Operation and Maintenance Plan completed in 2014 describes the activities to be completed by ODEQ to maintain the remedy. Five buoys were installed along the sediment cap perimeter and are inspected and maintained. The monitoring and management plan for the McCormick & Baxter Site requires quarterly inspections (Hart Crowser and GSI, 2019; ODEQ, 2020).
- **Soil, Groundwater, and Riverbanks** – As stated in the *Fourth Five-Year Review Report for the McCormick & Baxter Creosoting Company Superfund Site* (ODEQ and EPA, 2016), an EES will be implemented by ODEQ upon the sale of the property. This document also states that the EES will "*prohibit development within the 6-acre riparian zone along the riverbank as required by the Endangered Species Act Biological Opinion*" (ODEQ and EPA, 2016).
- **Signs** – The McCormick & Baxter Site is fenced, and warning signs are posted around the site and along the waterfront to notify potential trespassers of impacts. Signs are inspected on a quarterly basis (ODEQ, 2020).
- **IC Plan** – The need for an area-specific IC Plan was addressed by EPA in the *Fourth Five-Year Review*. EPA agreed that the document would be prepared upon the sale of the property (ODEQ and EPA, 2016).

[22] Easement No. 31530-EA to ODEQ in May 2004.
[23] RNA [U.S. Coast Guard (USCG)] Docket No. USCG-2008-0121; see link in Appendix A-2.

2.3.2 Northwest Natural Gasco Site

The Northwest Natural Gasco Site is located in the PHSS at river mile 6.5 on the west side of the Willamette River. Northwest Natural entered into an Administrative Order on Consent with EPA on April 28, 2004, to perform a time critical removal action to remove a tar body from the riverbank and nearshore sediments adjacent to the remedial area. The removal action was completed in 2005 and included the following components (Anchor, 2006a; Anchor 2006b):

- **Sediments –**
  - Approximately 15,300 cubic yards of tar and contaminated sediments were dredged from the river, encompassing an area of approximately 0.7 acre.
  - A cap consisting of 7,560 tons of material was installed over 0.39 acre of the dredge prism.
  - 670 tons of armor stone were installed on the cap sand to minimize erosion.
- **ICs –** Northwest Natural established an RNA through the Coast Guard to protect the cap.[24] The RNA prohibits motoring, anchoring, dragging, dredging, or trawling, and requires all vessels transiting or accessing the regulated area to do so at no-wake speeds. The RNA is displayed on NOAA maintained electronic and paper navigation charts which are updated with specific access and use restrictions. Four buoys were installed and are maintained to mark the RNA and are inspected quarterly.
- **Riverbank/Beach Signs –** ODEQ required that signs be posted facing landward and to the water at the Northwest Natural Gasco facility to notify potential recreators and trespassers of the health threat associated with riverbank/beach impacts (ODEQ, 2017). These signs have been installed (see photograph). If EPA so chooses, signage may be maintained under EPA authority under the 2019 ESD.

- **IC Plan –** An area-specific IC Plan was not prepared as part of this time-critical removal action.

2.3.3 Port of Portland Terminal 4

The Port of Portland Terminal 4 Site is located in the PHSS from river mile 4.2 to river mile 4.8 on the east side of the Willamette River. The Port entered into an Administrative Order on Consent with EPA in 2003 to perform a non-time-critical removal action. In 2008, the riverbank areas within Wheeler Bay were stabilized and an in-water removal action was conducted in Terminal 4 Slip 3 to address contaminated sediments. Activities included the following (Anchor QEA, 2009):

- Sediment and Shoreline Activities
  - The Port dredged approximately 12,820 cubic yards of contaminated sediments from the Slip 3 area.
  - A sand cover and a reactive sand cap amended with organoclay were placed at the head of Slip 3.
  - A portion of the Wheeler Bay shoreline was stabilized, flattened, and armored to prevent erosion.

[24] RNA established in March 2009 (USCG Docket No. USCG-2008-0112); see link in Appendix A-2.

- **ICs** – To protect the capped and riverbank areas from erosion, the following ICs were instituted:
  - At the request of the Port, two RNAs[25] were established by the Coast Guard at Terminal 4 in 2009: one for the capped area at the head of Slip 3 and the second in the riverbank stabilization area of Wheeler Bay. The RNAs state that all vessels are prohibited from anchoring, dragging, dredging, or trawling in the regulated areas to protect the sediment cap.
  - The Terminal 4 master area map (base map) used internally was updated by the Port with the cap location to alert users of its presence. According to the Port "*for any engineering design or construction work to be performed at a Port terminal, the design work would start from the base map*" and the map is used to inform those involved in future construction activities (Anchor QEA, 2009). The map includes a statement requiring coordination with the Port's Marine Environmental Department prior to conducting any construction activities within the footprint of the capped area.
  - The Port agreed to provide written notification to tenants with leaseholds or rights of use in the capped areas to make them aware of the RNAs and locations of the caps. The notification includes instructions for boat traffic in the area of the cap to: (1) minimize traffic over the caps; (2) require prior approval of work in the vicinity of the cap; (3) direct that excavation or sediment disturbance not be conducted in the capped areas; and (4) direct that the Port be notified in the event of possible damage to a cap.
  - An easement and restrictive covenant will be filed in the property record documenting the cap locations when the final cap area is completed. This will be completed as part of the final remedy.
- **IC Plan** – An area-specific IC Plan was not required but will be prepared by the performing party as part of the remedial design for Terminal 4.

[25] USCG Docket No. USCG-2009-0370; see link in Appendix A-2.

SECTION 3: **Harbor-Wide Institutional Controls**

There are currently two Harbor-wide ICs associated with PHSS, the Fish Advisory and Education and Outreach Program and the Section 404 Letter of Agreement. The Fish Advisory and Education and Outreach Program is an informational device IC. Work conducted under the Section 404 Letter of Agreement has IC components that are protective of the PHSS remedy. These ICs are detailed below.

3.1 Fish Advisory and Education and Outreach Program

Consumption of resident fish is the primary way people are affected by contaminants at the PHSS (EPA, 2017). To be protective of human health, the Fish Advisory necessitates a comprehensive Education and Outreach Program that reaches all affected communities (EPA, 2020). The final remedy in the ROD includes the implementation of a fish advisory IC as quoted below:

> "***Fish Advisories and Educational Outreach***: *A fish advisory will be part of the CERCLA response. Once construction is completed, the advisory would be updated to allow an increased consumption rate based on fish tissue concentrations. The advisory may be periodically updated until RAOs and cleanup levels are reached. The program may include: informational meetings, presentations, and workshops* [focusing on] *affected community groups; development and distribution of informational materials, such as brochures or maps; advisory notifications communicated through a variety of culturally appropriate outlets; installation and maintenance of advisory signs at known fishing locations; and coordination with sport or recreational fishing clubs and licensing locations."*[26]

Launched in 2019, the Fish Advisory and Education and Outreach Program was active during the development of this Programmatic IC Plan. A formal agreement with EPA is necessary to continue the Fish Advisory and Education and Outreach Program as a part of the remedial action. OHA and MCHD manage the Fish Advisory and its associated Education and Outreach Program, as follows:

- **Fish Advisory:** The Fish Advisory is a recommendation of the maximum number of meals of resident fish and shellfish to consume per month to avoid adverse long-term health effects. The Fish Advisory does not provide recommendations for migratory fish. OHA established the Fish Advisory in 2004[27] and last updated the Fish Advisory in 2018 (OHA, 2018a).[28,29]
- **Education and Outreach Program:** MCHD managed the foundational planning and implementation for the Fish Advisory Education and Outreach Program. The Education and Outreach Program supports the active communication of the Fish Advisory to affected communities. To date, MCHD has managed the Education and Outreach Program under an Intergovernmental Cooperative Agreement with the City, State, and Port. This agreement provides funding for MCHD to perform education and outreach duties until June 1, 2023.[30]

[26] Taken from ROD Section 10.1.1.8, Institutional Controls (EPA, 2017).
[27] According to OHA, the Portland Harbor Fish Advisory was established in 2004, as shown on the OHA Fish Advisory website and established in accordance with ORS 431.110: see links in Appendix A-2.
[28] The link to the *Updated Fish Advisory for Resident Fish and Shellfish, Lower Willamette River* (OHA, 2018a) is available in Appendix A-2.
[29] The U.S. Agency for Toxic Substances and Disease Registry also supports the Fish Advisory pursuant to CERCLA § 104(i)(6) (42 U.S.C. 9604(i)(6)) and in accordance with implementing regulations; see links in Appendix A-2.
[30] Intergovernmental Cooperative Agreement for Portland Harbor Fish Consumption Advisory Outreach Program, effective January 9, 2018.

A centralized education and outreach approach is integral to effectively reach those most at risk. In the PHSS *Community Involvement Plan* (EPA, 2020), EPA stated that MCHD

> *"took a Human-Centered Design approach to outreach by holding workshops from September 2018 to June 2019 where ideas were designed for and by the impacted communities. The risk communication concepts will be prototyped, brought back to the community for input, and included in an ongoing communication plan. EPA will continue to work closely and support Multnomah County in these efforts."*[31]

A lesson learned from the Lower Duwamish Waterway Superfund Site fish advisory education and outreach program was that involving those affected at each point in the risk communication process shapes the process to be more relevant and appropriate and empowers the affected communities or tribes (Public Health, 2019; NEJAC, 2002).

This Plan describes the programmatic responsibilities for implementing, monitoring, enforcing, and modifying the Fish Advisory and Education and Outreach Program (Figure 2). MCHD's recommendations for the Education and Outreach Program are provided in Appendix B.

3.1.1 Planning

Planning for the Fish Advisory was conducted as part of the PHSS preliminary studies and the remedial investigation. As described below, fish and shellfish tissue data were collected, and RAOs were set for fish and shellfish tissue during the investigation.

3.1.1.1 Fish and Shellfish Tissue Data Collection

EPA and ODEQ provided OHA with fish tissue data from fish collected in preliminary PHSS studies in 2002 and 2003. The data indicated that PCBs in fish residing in the PHSS were at levels of concern to human health (OHA, 2018a). EPA and ODEQ oversaw the collection of additional fish and shellfish tissue data in 2005, 2007, and 2009, as part of the PHSS remedial field investigations. Tissue data were collected from smallmouth bass in 2011 and 2012. The following documents provide the fish tissue sample results:

- *Portland Harbor RI/FS Remedial Investigation Report, Final*[32] (EPA, 2016)
- *Baseline Human Health Risk Assessment, Final*[33] (Appendix F of the *Final Remedial Investigation Report*) (Kennedy/Jenks, 2013)
- *Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study Field Sampling Report* and *Portland Harbor Fish Data Final Report*[34] (GSI, 2012)

These documents describe the species selected for evaluation, tissue analysis methods, sample type, sample numbers, and data quality objectives. Fish tissue concentrations indicate that PCBs, mercury,[35] and dioxins/furans dominate the risk profile related to human consumption of resident fish and shellfish from the PHSS.

[31] *Portland Harbor Superfund Site Community Involvement Plan (CIP)* (EPA, 2020), page 61; see link in Appendix A-2.
[32] See link in Appendix A-2.
[33] See link in Appendix A-2.
[34] See link in Appendix A-2.
[35] Statewide, mercury is a common contaminant in the tissues of bass and other long-lived predatory fish. The mercury comes from a combination of sources, including sources unrelated to PHSS contamination. Sources of mercury unrelated to PHSS contamination include natural sources, deposition of atmospherically transported global mercury emissions, and upstream industrial or past mining operations.

3.1.1.2 Fish and Shellfish Tissue Remedial Action Objective

As described in the ROD, EPA's established remedial goals are intended to reduce fish and shellfish tissue concentrations. The resulting fish and shellfish tissue concentrations will be used to inform fish advisories and evaluate progress toward achieving remedial objectives, specifically RAO 2 (EPA, 2017):

> "***RAO 2 – Biota: Reduce cancer and non-cancer risks to acceptable exposure levels (direct and indirect) for human consumption of COCs in fish and shellfish.*** *Reducing concentrations, exposure to, and the bioavailability of the COCs in sediment will subsequently reduce surface water and fish and shellfish tissue concentrations and will reduce risk at the Site. Ongoing source control efforts and the use of fish consumption advisories and education and outreach programs will provide additional risk reduction."*

The fish and shellfish tissue target concentrations established to reach RAO 2 are listed in Table 17 of the ROD (EPA, 2017). EPA identified the Fish Advisory and Education and Outreach Program as a PHSS IC to protect human health until RAO 2 is achieved. EPA will determine through the Five-Year Review process the data quality objectives and other fish tissue details for the collection of fish tissue data to be used in updating the Fish Advisory. Section 3.1.4 further discusses fish tissue sampling and evaluation as it relates to modification and termination of the Fish Advisory.

3.1.2 Implementation

The OHA 2004 Portland Harbor Fish Advisory described the spatial extent of the advisory and provided meal recommendations for resident fish for general and vulnerable populations (OHA, 2018a). OHA updated the 2004 Portland Harbor Fish Advisory in 2018 and renamed it the Lower Willamette River Fish Advisory (the current Fish Advisory). The current Fish Advisory encompasses a portion of the Lower Willamette River from the Sellwood Bridge to its confluence with the Columbia River and includes Multnomah Channel from its confluence with the Willamette River to the Sauvie Island Bridge (Figure 3).

The Fish Advisory applies to bass, carp, brown bullhead, black crappie, and all other resident fish, as well as crayfish, clams, and mussels found within the Lower Willamette River. OHA calculated meal recommendations for the Fish Advisory in accordance with its *Fish Consumption Advisory Standard Operating Guidance* (OHA, 2018b), adapted from EPA's *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume 2, Risk Assessment and Fish Consumption Limits, Third Edition* (EPA, 2000c).

To communicate the risks of consumption of contaminated fish, the ROD prescribes an education and outreach program that includes the following (EPA, 2017):

- Informational meetings, presentations, and workshops focusing on affected community groups
- The development and distribution of informational materials, such as brochures or maps
- Advisory notifications communicated through a variety of culturally appropriate outlets
- The installation and maintenance of advisory signs at known fishing locations
- Coordination with sport or recreational fishing clubs and licensing locations

To determine which communities are most impacted by contaminated fish, MCHD consulted with Portland Harbor community stakeholders through meetings and informational interviews and reviewed historical surveys. MCHD designed the framework for the community-informed Education and Outreach Program that focuses on the needs of those most at risk. Appendix B has additional information about the Education and Outreach Program development and implementation.

3.1.3 Maintenance

As the Fish Advisory is a recommendation about consumption of resident fish and shellfish, there is no maintenance associated with it, once implemented. As fish tissue data are collected as part of the PHSS cleanup, OHA modifies the Fish Advisory accordingly, so that meal recommendations are consistent with the levels of contamination in resident fish and shellfish (see Section 3.1.4).

MCHD will continue to lead the Education and Outreach Program, working with the community and maintaining Fish Advisory signs. EPA will work with MCHD and other applicable entities to: (1) continue the ongoing Education and Outreach Program; (2) evaluate performance metrics; and (3) secure funding for the program from performing parties. The scope of work for the Education and Outreach Program is described in Appendix B. Additional information about reporting and signage are provided below.

3.1.3.1 Reporting

To ensure proper implementation and maintenance of the Education and Outreach Program, MCHD conducts regular program evaluation and reporting. Appendix B includes more detailed guidance to support continuous program evaluation. A summary of MCHD's efforts and outcomes are in Appendix B.

Going forward, MHCD will continue its Education and Outreach Program and develop an annual Education and Outreach Program Evaluation Report. The annual report will include the following information, at a minimum:

- Summary of outreach and education activities completed during the year, including sign installation, maintenance, and replacement
- Key fact sheets and public notification information produced during the year to support the program
- Evaluation of education and outreach strategies and strategy changes to be implemented in the upcoming year
- Activities planned for the upcoming year

The annual report will be accessible on the IC Registry. In coordination with EPA, the reporting frequency may be reduced in future years based on the outreach results and success of the Education and Outreach Program.

3.1.3.2 Fish Advisory Signage

There are currently four signs with Fish Advisory information posted on the Willamette River (two at Cathedral Park, one on Swan Island, and one at Kevin Duckworth Dock [river mile 12.3 on the east side of river]). Currently, no entity is responsible for the maintenance or replacement of the signs. EPA anticipates that as part of a funding agreement for future work, MCHD will be responsible for Fish Advisory signage at public access locations, including installation, maintenance, and responding to reports from the public regarding damaged signs. Once developed, the IC Registry will serve as an additional mechanism for the public to report missing or damaged signs using an online format. MCHD will consult with EPA on the need for signage at recreational beaches (Figure 4).

The maintenance activities described in this section are specific to signs that are part of the Harbor-wide program. Fish Advisory signage will be updated to address community needs, including those articulated in the Needs Assessment, such as more educational information, signage in multiple languages, readability for visually impaired community members, and historical context. Signs will also describe a means to get additional information, e.g., by providing contact information, a website link, or a quick response (QR) code.[36] As outlined in Appendix B, MCHD will develop additional guidance on signage, in coordination with EPA and the community.

3.1.4 Modification and Termination

Fish tissue data collected during PHSS monitoring will inform modification or termination of the Fish Advisory and Education and Outreach Program. The process for modifying the Fish Advisory and Education and Outreach Program, and the termination process for the Fish Advisory are described below.

3.1.4.1 Fish Tissue Monitoring

In accordance with the ROD (EPA, 2017), monitoring will determine short- and long-term remedy performance, short-and long-term risk reduction (e.g., decreases in fish tissue contaminant levels or benthic toxicity), and evaluate progress toward achieving RAOs for the PHSS. Monitoring at the PHSS is conducted during the different stages of the remedial action process (baseline, remedy construction, and post construction). Monitoring includes Harbor-wide sampling efforts performed by EPA and area-specific sampling performed by performing parties. Fish tissue data will be collected consistently across the PHSS to ensure data comparability between the different performing parties collecting long-term monitoring data. Data collected under long-term monitoring are aggregated for evaluating achievement of RAOs for the PHSS. If possible, long-term monitoring data will be integrated into RAO monitoring in the same general time frame (i.e., on a 5-year review schedule), under similar river stage conditions, and according to means and methods similar to those used for RAO monitoring data collected Harbor-wide for the Five-Year Reviews.

As described in the *Remedial Design Guidelines and Considerations* for the PHSS (EPA, 2021), fish tissue data will be collected after remedy construction is completed. Monitoring plans and quality assurance project plans will detail the data quality objectives, sampling density, sampling program, sample collection methods, sample handling and processing, and quality assurance and quality control considerations to meet program requirements for method detection limits, accuracy, precision, representativeness, completeness, and data comparability. The work scope for a monitoring plan is designed to meet the requirements detailed in the OHA *Fish Consumption Advisory Standard Operating Guidance* (OHA, 2018a).[37] This guidance was developed in accordance with the EPA *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories*, which includes information on sample collection (Volume 1) (EPA, 2000b) and risk assessment (Volume 2) (EPA, 2000c). Monitoring plans and quality assurance project plans will be submitted to EPA for approval, with input from the Technical Coordinating Team. Once EPA receives and approves fish tissue concentration data, EPA will provide the data to OHA for evaluation.

The review of the Fish Advisory by OHA will be formalized similarly to the formalization of the Education and Outreach Program with the MCHD. A funding mechanism for OHA's review may be established.

[36] The quick response, or QR, Code is a two-dimensional version of the Barcode able to convey a wide variety of information (e.g., website addresses, contact information) almost instantly with the scan of a digital device.
[37] Refer to OHA guidance entitled Fish Consumption Advisory Standard Operating Guidance (OHA, 2018b); see link in Appendix A-2.

3.1.4.2 Modifications to the Fish Advisory

Data collected during the monitoring programs described in Section 3.1.4.1 inform Fish Advisory modifications. OHA evaluates fish and shellfish data. EPA anticipates that, as conditions warrant, OHA may modify the Fish Advisory in coordination with EPA (EPA, 2017).

EPA anticipates a temporary increase in contaminant concentrations in fish tissue due to the expected disturbance of contaminated sediments associated with remedy construction. As such, OHA's Fish Advisory fact sheet (Appendix B) will be amended to state that the OHA recommends the consumption of zero meals per month of resident fish and shellfish species at the start of cleanup activities (EPA, 2017). The recommendation of zero meals per month of resident fish and shellfish species will remain at least until EPA completes fish tissue sampling and OHA evaluates the fish tissue data and finds some number of resident fish is consumable without adverse human health impact. EPA and OHA expect that the recommendation will be increased over time after remedy construction is completed (EPA, 2018a).

3.1.4.3 Modifications to the Education and Outreach Program

Evaluating the effectiveness of the Education and Outreach Program in communicating the Fish Advisory and protecting human health is needed to determine whether program modifications are warranted. As detailed in Appendix B, a key strategy of the Education and Outreach Program is to continuously seek and integrate community feedback that results in near real-time programmatic improvements.

An evaluation of the overall program strategy will be conducted to assess both intended and unexpected outcomes. Intended outcomes are changes in knowledge, attitude and behavior. Unexpected outcomes identify both unanticipated obstacles and unanticipated effects of the program. MCHD will collaborate with EPA and community partners to plan and design the evaluation to assess the short-term, medium-term, and long-term impacts of the outreach strategy. The evaluation frequency will be determined by MCHD, community partners, and EPA. To start, the potential frequency of evaluation ranges from every one to two years, which lends to quick implementation of necessary program modifications to increase the Fish Advisory's protectiveness of human health. As the program becomes more established, the frequency of evaluations may be extended to every five to seven years, as warranted. Results of this evaluation will be summarized in a separate submittal provided by MCHD and available on the IC Registry.

3.1.4.4 Termination of the Portland Harbor Superfund Site Fish Advisory

It is unlikely that consumption of unlimited fish meals will be without elevated risk due to anthropogenic background concentrations of PCBs.[38] To terminate the PHSS-related Fish Advisory, OHA, in cooperation with the Agency for Toxic Substances and Disease Registry, will determine when it is appropriate to terminate the Fish Advisory based on fish tissue data collected as part of the Five-Year Review process. The ROD Table 22 indicates that upon achievement of RAO 2, it will be considered safe to consume up to 16 adult meals per month of resident fish. If the fish tissue data indicate that the Fish Advisory can be lifted, then OHA will reclassify the Fish Advisory as a safe eating guideline. Once sediment cleanup levels are met at appropriate spatial scales, the responsibility for this program may revert to OHA.

[38] OHA guidance (OHA, 2018b) defines "unlimited" consumption as more than 22 adult meals per month.

3.2 Clean Water Act Section 404 Letter of Agreement

EPA, ODEQ, and USACE Portland District are signatories to a 2002 CWA Section 404 Letter of Agreement, which functions as a Harbor-wide IC. The purpose of the Section 404 Letter of Agreement is to manage CWA Section 404 permit work within the PHSS. The Section 404 Letter of Agreement clarifies the respective responsibilities of EPA, ODEQ, and USACE with regard to the PHSS and establishes a long-term coordination strategy between the signatories to share complementary responsibilities within PHSS, with the following objectives:

- Ensuring that actions taken at the PHSS and areas impacting the PHSS adhere to the laws and regulations established through CERCLA.
- Ensuring open and regular communication among the signatories regarding maintenance and environmental dredging responsibilities within the PHSS.

Under the Section 404 Letter of Agreement, EPA reviews CWA Section 404 permits and permit applications for any facility or area located between the confluence of the Willamette and Columbia Rivers and Willamette Falls (river mile 0 to river mile 26). EPA makes recommendations to USACE, which may include permit conditions, modifications, or work stoppages. Permitting activities are evaluated by EPA in coordination with ODEQ to ensure activities are consistent with CERCLA processes and comply with the CWA.

As such, the Section 404 Letter of Agreement acts as an IC to prevent exacerbation of existing contamination. This IC will continue, with modifications, during and after remedial action to prevent recontamination or disturbance of the remedy (and to ensure MNR) works as quickly as possible.

SECTION 4: **Area-Specific Institutional Controls**

The PHSS selected remedy described in the ROD includes the application of area-specific ICs in discrete cleanup areas to protect human health, the environment, and the remedy. In some cases, ICs may be utilized to limit waterway and land use activities that may hinder the capacity of the remedy to contain the contaminated media (EPA, 2017). This section describes the framework for planning, implementing, maintaining, enforcing, modifying, and terminating area-specific ICs, consistent with EPA guidance. Figure 5 shows the processes for the relatively more complex area-specific ICs.

ICs are organized by type in the discussion below. The types of ICs include government controls, enforcement and permit tools with IC components, proprietary controls, and informational devices.

TYPES OF ICs

ICs are divided into four categories. Within each category, a number of instruments may be employed. IC categories are as follows (EPA, 2000a):

- **Government Controls** – Tools imposed using the authority of a government entity.
- **Proprietary Controls** – Tools available under property law.
- **Enforcement and Permit Tools with IC Components** – Legal authority of government agencies overseeing a cleanup.
- **Informational Devices** – Tools designed to notify or provide information.

This section will not identify IC requirements or specific instruments for individual areas. It is the responsibility of performing parties to develop an IC framework that is protective based on area-specific conditions. Performing parties will need to work with, and gain approval from, EPA to determine which ICs will be implemented in an area. The performing parties will memorialize these determinations in area-specific IC Plans.

4.1 Government Controls

Government control ICs are land and waterway use restrictions that are implemented under government regulatory authority. The government control ICs described below are Coast Guard RNAs, Oregon boating regulations, and the Oregon 811 One-Call System. RNAs and boating regulations are potential ICs for protecting in-water caps because they regulate certain activities that may compromise the remedy. The Oregon One-Call System is applicable to in-water and riverbank remedial areas.

EPA's guidance (EPA, 2012) identifies municipal governmental controls (i.e., zoning) as a potential IC to protect remedies. However, Oregon's unique land use laws set limits on the City's ability to limit property uses through zoning. EPA has reviewed the applicability of zoning as an IC under state and local regulations and determined that it is not a useful IC in the PHSS.

4.1.1 U.S. Coast Guard Regulated Navigation Areas

RNAs place restrictions on commercial and private vessels within a defined lateral boundary under the authority of the Coast Guard.[39] RNAs typically prescribe the type or size of vessel that may enter an area or the manner in which the vessel must navigate. For example, an RNA may prohibit anchoring or stipulate a required under-keel clearance. As an IC, an RNA helps protect the integrity of an in-water cap by limiting vessel operations that could damage or disturb it. RNAs and associated signage and buoys are covered under the RHA, which is an applicable or relevant and appropriate requirement for the PHSS.

[39] 33 CFR Part 165; see link in Appendix A-2.

4.1.1.1 Planning

During the remedial design process, EPA requires performing parties designing an in-water cap to determine the amount of erosion or disturbance that the cap can withstand. The typical remedial design process evaluates the anticipated forces on a cap and informs the design of the cap so that it can withstand those forces, in accordance with EPA's remedial design guidelines (EPA, 2021). For example, erosion evaluation determines the erosion protection layer needed to protect remedial areas against erosive forces such as wave impacts, propeller wash, and other associated erosive forces (EPA, 2021). If the remedy area is susceptible to damage by vessel activities such as anchoring or grounding, RNAs, along with Oregon boating regulations (discussed below) can potentially be utilized to protect the remedy. If erosion studies or other information indicate that the remedial area is not susceptible to damage by vessel anchoring, grounding, or other activities, an RNA may not be needed to minimize erosion across all, or even part, of the remedy area.

Any proposed RNA must allow for the current and reasonably anticipated future uses of the area. RNAs are implemented by the Coast Guard and NOAA. To establish an RNA as an area-specific IC in the PHSS, the performing party submits a request in writing to the 13th Coast Guard District Commander or Captain of the Port. This request will be submitted at the beginning of remedial action. A complete RNA request includes: (1) the name of the person submitting the request; (2) the location and boundaries of the requested RNA;[40] (3) the requested date, time, and duration for the RNA; (4) a description of the activities planned for the regulated area; (5) the nature of the restrictions or conditions desired; and (6) the reason for the RNA.[41] NOAA updates nautical charts and RNA notices once the Coast Guard has promulgated the RNA. Appendix A-1 provides contact information for government agencies for more information and guidance.

Performing parties are expected to layer RNAs with Oregon boating regulations (see Section 4.1.2). Multnomah County Sheriff's Office River Patrol (River Patrol) enforces Oregon boating regulations, so layering these ICs would add an additional enforcement agency to patrol the area of the remedy.

4.1.1.2 Implementation

When the Coast Guard approves an RNA request, the RNA is published in the Federal Register and announced in the 13th Coast Guard District Local Notice to Mariners. The Coast Guard either communicates the RNA to NOAA and its partners or directs the performing party to do so. NOAA then does the following:

- Maps the RNA on its nautical charts.[42]
- Records the RNA description in Chapter 2 (Navigation Regulations) of the *U.S. Coast Pilot Nautical Book for the Oregon, Washington, Hawaii and Pacific Islands Region*.[43]

Nautical charts and the U.S. Coast Pilot nautical books inform vessel operators about the location and use restrictions of RNAs.

For a performing party to use buoys to delineate the area of an RNA, the performing party requests permission from the USACE, Coast Guard, Marine Board, and ODSL, as applicable. In some cases, buoys may not be practical to physically mark RNA boundaries (e.g., in deep water areas where navigation must occur and where anchoring is prohibited, RNAs would only be noted on shore or wharf signage and navigational charts). Performing parties using buoys and/or signs for RNAs should include detailed plans in their area-specific IC Plans for buoy and/or sign design and continued maintenance, monitoring, and repair.

[40] Using North American Datum of 1983 horizontal datum.
[41] 33 CFR § 3.65-1; see link in Appendix A-2.
[42] Nautical charts are available on the NOAA website to view or download as vector files (electronic navigation charts) or PDFs; see link in Appendix A-2.
[43] See link in Appendix A-2.

Buoys and signs are required to comply with the U.S. Aid to Navigation System described in 33 Code of Federal Regulations (CFR) Part 62 Subpart B. Additional information on buoy and sign installation and design is provided in Appendix C.

4.1.1.3 Maintenance

The RNA will be memorialized in the Federal Register. Likewise, NOAA keeps the RNA mapped on nautical charts and the RNA description in U.S. Coast Pilot nautical books. Nautical charts and the U.S. Coast Pilot nautical books continue to inform vessel operators of the RNA. If a performing party uses buoys and signs, they are responsible for keeping them in proper condition, including ensuring they are undamaged and in the location approved by the USACE, Coast Guard, and Marine Board.

Area-specific IC Plans should address the following:

- Maintaining buoys and signs so that they are readable, structurally sound, and in the correct locations. The performing party will monitor buoys and signs on a regular basis to confirm they are in good working order (Section 6.2.3). Performing parties will repair or replace deficient buoys and signs.
- Periodic monitoring that the RNA notifications remain on NOAA's charts and publications (EPA, 2017). If the RNA is missing from these records, the performing party reports the discrepancy to NOAA.
- Reporting observed non-compliance to the Coast Guard. Continuous monitoring of the water is not expected; however, if a performing party observes vessel operators not complying with an RNA, the party must report it to the Coast Guard (Appendix A-1) and document the incident(s) in their IC Inspection Report (see Section 6.4.2).
- Other maintenance activities specifically outlined in the performing party's area-specific IC Plan.

The performing party must document the maintenance activities and submit this documentation as part of its IC Inspection Report. See Section 6 for additional information.

4.1.1.4 Enforcement

Federal law requires commercial and private boaters to operate in accordance with RNAs.[44] The PHSS is located within the maritime law enforcement jurisdiction of the Coast Guard 13th District Sector Columbia River Station Portland and Marine Safety Office/Group Portland. These sub-units' area of responsibility is from the Puget Island to the Snake River on the Columbia River and from its convergence with the Columbia River to river mile 183 (in Eugene) on the Willamette River. Violations of RNAs are punishable by civil and criminal penalties.

The Coast Guard is authorized to enforce RNAs. The River Patrol enforces Oregon boating regulations (including statutes and rules). Layering RNAs with Oregon boating regulations is more protective because two entities with enforcement authority will patrol the area of the remedy. The River Patrol does not have the authority to enforce a Coast Guard RNA; therefore, implementing both ICs is necessary for this level of increased enforcement and patrol (see Section 4.1.2). EPA serves as an additional layer of enforcement if an RNA violation results in remedy damage and/or a release of contaminants from a riverbank or capped area.

RNA buoys and signs are subject to Coast Guard maintenance inspection at any time without prior notice. Violations of buoy and sign requirements are misdemeanors.

[44] 33 CFR § 165.13; see link in Appendix A-2.

4.1.1.5 Modification and Termination

With EPA approval, the performing party can request that the Coast Guard modify the RNA if conditions have changed. Modifications to the RNA (size, use restrictions, etc.) follow the implementation process specified in Section 4.1.1.2.

An RNA protecting a cap will likely remain in perpetuity. However, if EPA approves the termination of an RNA IC, the RNA may be terminated by submitting a written request to the 13th Coast Guard District Commander or Captain of the Port. The Coast Guard may terminate the RNA at its discretion. If removed, the Coast Guard and NOAA will update their documentation, including updating nautical charts and removing the recorded RNA description from Chapter 2 (Navigation Regulations) of the *U.S. Coast Pilot Nautical Book* for the Oregon, Washington, Hawaii, and Pacific Islands Region.

4.1.2 Oregon Marine Board Boating Regulations

The Marine Board has the general authority to regulate recreational boating on the Willamette River and adopt regulations for that purpose.[45] The Marine Board has specific statutory authority to enact regulations for specific areas consistent with the safety and the property rights of the public, or to address excessive congestion of the waterways.[46] The Marine Board also has the specific authority to regulate recreational boating on the Willamette River for the establishment of designated speeds or other methods to manage boat wake energy for the protection of the shoreline, property, habitat, and vegetation.[47] However, the specific authority in Oregon Revised Statute (ORS) 830.175(4) does not apply to deep-draft vessels, tugboats, towboats, barges, launch vessels, and other commercial vessels engaged in marine commerce or the transportation of cargo.[48]

Under ORS 830.110, the Marine Board has the general authority to adopt boating regulations necessary to implement the provisions of ORS 830. However, under ORS 830.015, many statutory requirements do not apply to vessels when application of the boating regulation would be inconsistent with federal law or regulations, or when a vessel is one of the following:

> (a) A foreign boat operated temporarily in the waters of this state
>
> (b) A boat owned and operated by the U.S. government or U.S. government entity
>
> (c) A ship's lifeboat used solely for lifesaving purposes
>
> (d) A boat belonging to a class of boats that has been exempted from the provisions of specific statutes by the Marine Board, unless the boat is (a) a passenger vessel less than 100 gross tons, (b) a commercial vessel that is not required to be inspected under federal law, or (c) publicly owned recreation vessel.[49]

4.1.2.1 Planning

Implementing boating regulations as an area-specific IC is appropriate when protection of the remedy from vessel activities is required by EPA. As mentioned in Section 4.1.1.1 above, EPA requires performing parties to conduct an erosion study during remedial design to inform decisions about whether use restrictions are warranted to protect a cap. Waterway use restrictions will only be required in the specific areas indicated by

[45] ORS Title 61, Chapter 830 (830.110); see link in Appendix A-2.
[46] ORS 830.175 (1); see link in Appendix A-2.
[47] ORS 830.175 (4); see link in Appendix A-2.
[48] ORS 830.175 (4); see link in Appendix A-2.
[49] ORS 830.015; see link in Appendix A-2.

erosion studies as needing a restriction to protect the remedy (EPA, 2021). Erosion studies may indicate that the remedial area is not susceptible to damage by erosive forces. However, restrictions may still be required to protect the remedy against vessel activities such as anchoring or grounding damage. If the remedy area is susceptible to damage by vessel activities such as anchoring or grounding by vessels within the scope of Marine Board jurisdiction, Oregon boating regulations can be utilized as a tool to protect the remedy.

An Oregon boating regulation may be established on the Marine Board's own initiative, or through a public petition process. Generally, if the Coast Guard has an RNA in place impacting boats that are under Marine Board jurisdiction, then the Marine Board will take action to adopt the federal regulation into state rule to promote uniformity of the laws. A performing party that plans to rely on a Coast Guard RNA or Oregon boating regulation should request a boating regulation at the beginning of remedial action. The Marine Board may issue short term restrictions of up to 180 days, or adopt permanent regulations. The latter process generally takes a minimum of 60 days. In either case, to avoid a delay in establishing rules, the Marine Board advises that a regulatory plan, both during and post-construction, be discussed and agreed upon prior to commencement of construction.

If the Marine Board does not adopt a Coast Guard RNA, then a performing party may submit a petition to the Marine Board requesting that it adopt a rule that effectively incorporates the Coast Guard RNA into state law[50] (see Appendix A for more information). The petition must state the name and address of the petitioner and any persons known by the petitioner to be interested in the rule.[51] If the petitioner requests the Marine Board to adopt a new rule, the petition must contain the proposed language in full; facts or arguments in sufficient detail to show the reasons for and effects of adoption of the rule; and all propositions of law to be asserted by the petitioner.[52] If the Marine Board adopts rules similar to the Coast Guard RNAs, then performing parties may not need to submit a separate request. However, it will be the responsibility of the performing parties to confirm that the Marine Board is informed of the RNA the performing party is using as an IC and that restrictions in the RNA have been incorporated into a boating regulation. The boating regulation should be referenced by the performing parties in their IC Implementation Report and the EPA Five-Year Review.

Performing parties are expected to layer RNAs with Oregon boating regulations (that is, implementing both ICs to protect the same area simultaneously) (see Section 4.1.2). The Coast Guard enforces RNAs, so layering State boating regulations adds an additional enforcement agency to patrol the area of the remedy.

4.1.2.2 Implementation

As identified above, the Marine Board has the authority to adopt boating regulations for the purpose of regulating recreational boating.[53] If the Marine Board adopts the boating regulation, the regulation will appear in the Oregon Administrative Rules.[54] The Marine Board also publishes the Boat Oregon online maps, which can include both Oregon boating regulations as well as federal boating regulations.[55] Boat Oregon maps inform vessel operators about the location and use restrictions of boating regulations.

For a performing party to use buoys to delineate the area of a boating regulation, the performing party requests permission from the USACE, Coast Guard, Marine Board, and, as applicable, ODSL. The Oregon

[50] OAR 137-001-0070; see link in Appendix A-2.
[51] OAR 137-001-0070(1); see link in Appendix A-2.
[52] OAR 137-001-0070(1); see link in Appendix A-2.
[53] ORS 830.110; see link in Appendix A-2.
[54] Website for the Oregon Administrative Rules Database; see link in Appendix A-2.
[55] Online maps are available at the Boat Oregon Online Maps and geographic information system (GIS) site; see link in Appendix A-2.

regulations for waterway markers are provided in administrative rule.[56] In some cases, buoys may not be practical to physically mark boating regulation boundaries, for example in deep water areas where navigation must occur and where anchoring is prohibited, boating regulations would only be noted on shore or wharf signage and navigational charts. Performing parties using buoys and/or signs for boating regulations should include detailed plans in their area-specific IC Plans for buoy and/or sign design and continued maintenance, monitoring, and repair. Buoys for Oregon boating regulations, like buoys for RNAs, are required to comply with the U.S. Aid to Navigation System described in 33 CFR Part 62 Subpart B.[57] Coast Guard signage requirements meet those of the Marine Board. Additional information on buoys and sign requirements is included in Appendix C.

4.1.2.3 Maintenance

As long as the Oregon boating regulation is in place, the regulation will appear in the Oregon Administrative Rules and be mapped on Boat Oregon online maps. Boat Oregon online maps continue to inform vessel operators of the Oregon boating regulation. If a performing party uses buoys and signs, they are responsible for keeping them in proper condition, including ensuring they are undamaged and in the location approved by the USACE, Coast Guard, Marine Board, and, as applicable, ODSL.

Performing parties will include in their area-specific IC Plans that they are also responsible for the following:

- Maintaining buoys and signs so that they are readable, structurally sound, and in the correct locations. The performing party will monitor buoys and signs on a regular basis to confirm they are in good working order. Performing parties will repair or replace deficient buoys and signs.
- Annual monitoring to ensure that the boating regulation remains recorded and unamended as an Oregon Administrative Rule and mapped on Boat Oregon online maps. If the boating regulation is missing from these records, the performing party will report the discrepancy to the Marine Board.
- Continuous monitoring of the water is not expected; however, if a performing party happens to observe boats operating in violation of the boating regulation, the performing party must report the incident(s) to the River Patrol and document the incident in the IC Inspection Report.
- Other maintenance activities specifically outlined in the performing party's area-specific IC Plan.

The performing party documents maintenance activities and submits this documentation in its IC Inspection Report. See Section 6 for additional information.

4.1.2.4 Enforcement

Under ORS 830.035, the Multnomah County Sheriff Department (Sheriff) is authorized to enforce Oregon boating regulations in the PHSS. The Marine Board and the Sheriff coordinate through an intergovernmental agreement.[58] Per the agreement, the Marine Board provides funding to the Sheriff and in turn, the Sheriff enforces Oregon boating regulations (including statutes and rules) through its River Patrol. The River Patrol patrols Multnomah County's 110 miles of waterways along the Columbia River, Willamette River, Sandy River, and the Multnomah Channel.

The River Patrol has responsibilities beyond enforcing Oregon boating regulations. As such, the River Patrol will not always be able to detect violations of a boating regulation. Also, Oregon boating regulations passed pursuant to ORS 830.175(4) within the Willamette River Greenway (which includes the PHSS) do not apply

[56] OAR 250-010-0201; see link in Appendix A-2.
[57] 33 CFR Part 62 Subpart B; see link in Appendix A-2.
[58] Agreement No. 250-1617MULTNOMAH-001 as authorized under ORS 190.110 and ORS 830.110; see links in Appendix A-2.

to several categories of vessels, including commercial vessels engaged in marine commerce or the transportation of cargo (as described in Section 4.1.2).[59] The Coast Guard enforces RNAs, so layering Oregon boating regulations with RNAs adds an additional enforcement agency to patrol the area of the remedy. The River Patrol does not have the authority to enforce a Coast Guard RNA; therefore, implementing both RNAs and state regulations is necessary for this level of increased enforcement and patrol (see Section 4.1.1). EPA serves as an additional layer of enforcement if a boating regulation violation results in remedy damage and/or a release of contaminants from a riverbank or capped area.

4.1.2.5 Modification and Termination

A performing party may propose modifications of the IC to EPA. If EPA determines that revisions to the area-specific IC Plan are warranted, a performing party may request that the Marine Board modify a boating regulation.[60] Requesting a modification to an existing boating regulation (e.g., size, use restrictions, etc.) follows the same process as requesting the implementation of the boating regulation, but with additional elements. The request for an amendment must include a description, written out in full, of the in-place boating regulation with the proposed deletions and additions clearly indicated.[61] In addition, the request to amend or repeal an existing rule must include comments on options for reducing the economic impact, the continued need for the rule, the complexity of the rule, overlap or conflict with other rules, and the factors that have changed since the adoption of the existing rule.[62]

A boating regulation protecting a cap will likely need to remain in perpetuity. If EPA determines that a boating-related IC is no longer needed to protect that area, the performing party may request that the Marine Board repeal the associated boating regulation.[63] To request repeal of a boating regulation, the performing party submits a petition to repeal an existing rule in writing to the Marine Board in the same format as the petition to modify an existing rule. The Marine Board repeals the boating regulation at its discretion. If repealed, the Marine Board updates its records.

4.1.3 Oregon 811 One-Call System (Oregon 811)

All performing parties with caps or mitigation areas will select Oregon 811 as an IC to prevent disturbance of impacted riverbank soil or sediment. The Oregon Utility Notification Center (Notification Center) Oregon 811 One-Call System (also known as "Call Before You Dig" or Oregon 811) is an information gathering service that homeowners and professional excavators are required by law to call prior to starting an excavation.[64] If the performing party provides the Notification Center with digital mapping files of its active remediation and/or mitigation area(s), the service will notify the performing party of a planned excavation within the impacted media so they can prevent the disturbance. Oregon law requires excavators to call Oregon 811 prior to starting an excavation.[65] When an excavator calls Oregon 811, the Notification Center notifies the point-of-contact listed by the performing party on the Oregon 811 application that a proposed excavation is within its remediation or mitigation area. The point-of-contact can be the performing party or their designee. It is the performing parties' responsibility to notify the excavator and EPA if the proposed excavation is in any area where it might threaten the integrity of a cap, engineered remedy, or mitigation.[66] Whether the

[59] ORS 830.175 (4); see link in Appendix A-2.
[60] OAR 137-001-0070; see links in Appendix A-2.
[61] OAR 137-001-0070 (1)(a); see link in Appendix A-2.
[62] OAR 137-001-0070 (2); see link in Appendix A-2.
[63] OAR 137-001-0070; see links in Appendix A-2.
[64] "Excavation" is defined as "*any operation in which earth, rock or other material on or below the ground is moved or otherwise displaced by any means, except sidewalk, road and ditch maintenance less than 12 inches in depth that does not lower the original grade or original ditch flow line*" (OAR 952-001-0010); see link in Appendix A-2.
[65] ORS 757.557; see link in Appendix A-2.
[66] OAR 952-001-0070; see link in Appendix A-2.

proposed excavation would threaten the cap or mitigation area is EPA's (or EPA's designee's) purview to decide, not the performing party.

Oregon 811, while effective as an IC, should be layered with other protective measures for a restricted area. Excavators are not required to call Oregon 811 if the excavation is less than 12 inches in depth.[67] Therefore, this IC is only protective of caps with depth thicknesses 12 inches or greater. Designing caps at least 12 inches in depth, as well as adding delineation barriers/demarcations for riverbank caps (e.g., providing an obvious delineation between clean and contaminated material) facilitates the protectiveness of this IC.

4.1.3.1 Planning

Performing parties add their caps, engineered remedies, and mitigation areas to the Oregon 811 system by submitting geospatial data and area details (metadata) to the Notification Center.[68] In the submittal, the performing party provides contact information for the party to be notified if an excavation is proposed within its restricted area. The Notification Center recommends that the performing party provide a department or other designated reporting phone number rather than an individual's phone number.

As part of the planning process for riverbank caps, performing parties should incorporate engineering elements into the riverbank cap design which enhance compatibility with the 811-notification system. This can include elements such as ensuring that all caps are at least 12 inches in depth and for riverbank areas, including a visual barrier or demarcation between the clean overburden and contaminated material.

4.1.3.2 Implementation

The Notification Center processes data submittals and places them in the online mapping application for Oregon 811 (called IMAP) for the performing party to verify and approve.[69] Once the performing party approves the proposed coverage area, the Notification Center applies the data to live maps, thereby implementing the IC.

4.1.3.3 Maintenance

Oregon Law requires excavators to call the Oregon 811 service at least two, but not more than 10, full business days before beginning excavation activities.[70] If an excavator calling Oregon 811 proposes excavation in the area that the performing party submitted to the Notification Center, the Notification Center calls the contact number provided by the performing party. Per OAR 952-001-0070, the performing party confirms that the excavation is within the restricted area and, for riverbank areas, marks the limits of the restricted area within two full business days following the day the excavator notified Oregon 811. The performing party coordinates a time with the excavators to mark the limits and to give the excavator details of the cap or mitigation area.[71] See Section 6.2.4 for further information regarding the Oregon 811 notification process.

In their area-specific IC Plans, performing parties provide details on how they will be prepared to respond to Oregon 811 calls for as long as the IC is in place. The response plans will be updated in the performing parties' annual IC Inspection Reports. At some properties, the performing party is not the current occupant, is no longer the owner, or has tenants. For such properties, performing parties should notify property owners and tenants annually of the presence of the ICs (see Section 6.2.2).

[67] OAR 952-001-0050; see link in Appendix A-2.
[68] Digital mapping file submittal guidelines are posted on www.callbeforeyoudig.org/oregon; see link in Appendix A-2.
[69] Links to applicable websites such as IMAP are provided in Appendix A-1.
[70] ORS 757.557; see link in Appendix A-2.
[71] OAR 952-001-0070; see link in Appendix A-2.

Performing parties commit in their area-specific IC Plans that, if an excavation is planned and incorrectly permitted in a restricted area, they will contact the permitting agency to determine where communication broke down and modify their ICs and area-specific IC Plan (as approved by EPA) to better protect remedy areas. Whether the proposed excavation would threaten the cap or mitigation area is EPA's (or their designee) purview to decide, not the performing party. Performing party should notify EPA if there is a potential threat to the remedial action.

Area-specific IC Plans should document that the performing party is also responsible for regularly contacting the Notification Center to confirm that its geospatial data remain on file and that its contact information is still accurate. The response plans will be updated in the performing parties' annual IC Inspection Reports. If the geospatial data are missing from the Notification Center's records, the performing party will resubmit the data. If the contact information is outdated, the performing party will supply a new contact.

4.1.3.4 Enforcement

The Notification Center enforces Oregon 811 and has a complaint system in place for reporting violations. Per ORS 757.993, any person who intentionally violates, or who intentionally aids or abets in the violation of any rule of Oregon 811, will incur a penalty. This includes excavators who do not notify Oregon 811 and performing parties who do not respond to an excavation notification in their restricted area. The penalty is currently set at not more than $5,000 for the first violation and not more than $10,000 for each subsequent violation. Each day that the violation continues constitutes a separate violation.

4.1.3.5 Modification and Termination

With EPA approval, the performing party modifies the IC by contacting the Notification Center and submitting geospatial data and area details for the contaminated media. Where waste remains in place, Oregon 811 IC will remain in place in perpetuity. If ROD RAOs are achieved for a specific portion of the remedy (e.g., contamination is excavated or dredged) and EPA determines that the Oregon 811 IC can be terminated, the performing party contacts the Notification Center to remove the data from the Oregon 811 records.

4.2 Proprietary Controls

Proprietary controls refer to use limitations or other obligations that are based in property law. They are designed to restrict the property owner from using its land in a certain way.

The parties involved in a proprietary control agreement are the following:

- **Grantor** – the owner of the land rights
- **Grantee** – the party to which certain of the land rights are granted

Some agreements also include another party:

- **Third-Party Beneficiary** – a party with the right to enforce the proprietary control

Different types of proprietary controls could be used to protect a remedial area. For example, an Easement and Equitable Servitude (EES) is a mechanism by which a property owner restricts the use of its own land. As a proprietary control, an EES would be used to prohibit or restrict activities that might result in the release of or exposure to hazardous substances, or impair or interfere with the remedy, particularly where there is a cap over contamination. Common restrictions may pertain to or prohibit piling removal or installation, excavation, and other activities that might impair the integrity of a cap or other remedial measures. EESs can authorize access by EPA, as well as notice to EPA of certain activities on or conveyance of any interest in the restricted property. EPA may also be named as a third-party beneficiary with the right to enforce the proprietary control. The in-river remedy for the PHSS encompasses submerged and submersible land owned by the State, as well as submerged and submersible land, and other riverbank areas, not owned by the

State.[72] Within the PHSS, and elsewhere, the State's ownership of submerged and submersible lands varies. Most of the submersible lands along the Willamette River, including most or all of those within PHSS, were granted to the adjacent upland owners by the Oregon legislature through the Tidelands Act of 1874, thereby establishing the State's ownership at the ordinary low water line. In addition, in some situations the State has conveyed its interest in certain submerged or submersible lands in the PHSS. Also, the shoreline along the Lower Willamette River has moved over time, by accretion (such as deposition) or erosion, by avulsion (such as dredging and filling), or by a combination of events, each of which would have different impacts on ownership boundaries. The extent of the State's current ownership must be confirmed on a property-specific basis.

4.2.1 Riverbank and In-Water Areas Not Owned by the State

Cleanup of riverbank areas is a matter of joint jurisdiction between EPA and ODEQ. There is flexibility in how riverbank cleanups can be addressed to expedite early risk reduction and to meet RAOs of the overall cleanup. Riverbank cleanups will be implemented under the ROD/ESD with oversight by EPA and in conjunction with the upland source control actions implemented with oversight by ODEQ. With very few exceptions, the State owns lands to the OLW or OHW line.

EPA and ODEQ are working to develop a model EES for parties to use in riverbank and in-water areas not owned by the State. It will be added as an attachment to a future revision of this Programmatic IC Plan. The EESs will be negotiated by performing parties and will be agreements between the non-State property owners and ODEQ. The EESs will name ODEQ as the grantee and name EPA a third-party beneficiary with the right to enforce the terms of the EESs. The objective of the EES is to provide a legally enforceable mechanism that limits use of the property to protect the remedy and authorizes access for ODEQ and EPA to inspect the area.

4.2.2 State Submerged and Submersible Lands

EPA anticipates that the appropriate proprietary restrictions will be negotiated between EPA and the State and will not need to be individually negotiated by parties conducting RA. Sale of State-owned submerged or submersible land is relatively uncommon. If the State sells any submerged or submersible land within PHSS, ODSL anticipates that it would be transferred to the new owner subject to an EES that contains measures required to protect the remedy.

4.2.3 Planning and Implementation

Performing parties planning to use proprietary controls should include the following in their area-specific IC plans:

- Information regarding ownership of the real property within the remedial action area, including:
  - An assessment of the riparian boundary(ies) in the area, describing the extent to which the proposed remedial action will involve work on: (1) State-owned submerged or submersible lands; and (2) riverbank and any submerged or submersible land not owned by the State;
  - A description of the information relied upon for the assessment, any questions or ambiguities regarding the riparian boundary revealed by the assessment (or any other source of information), and mechanisms for addressing potential uncertainty regarding, or changes in, the riparian boundary when developing proprietary controls;

[72] Generally speaking, "submerged" land means land lying below the line of ordinary low water (OLW) and "submersible" land means land lying between the line of OLW and the line of ordinary high water (OHW). See ORS 274.005 (7) and (8). Riverbank above the line of ordinary high water is neither submerged nor submersible. See links in Appendix A-2.

  - The current owner(s) of any adjacent upland property(ies);
  - The current owner(s) of the riverbank and submerged or submersible land within the remedial action areas, both above and below the riparian boundary.
- A description of any proprietary control in-place, or anticipated, including the type of instrument, area subject to the control, grantor, grantee, and any third-party beneficiary.
- If a proprietary control on which the performing party intends to rely is already in place, a copy of that control or instrument with any recording information.

The Lower Willamette River, including the area identified as the PHSS, is open to public trust uses including, but not limited to commerce, navigation, fishing, and recreation. Area-specific design should account for all manner of ongoing PHSS activity. As part of the remedial design, performing parties should incorporate engineering elements into their cap design that enhance compatibility with authorized, allowed, and reasonably anticipated lawful uses of the submerged and submersible land and riverbank within the remedial area.

Responsibility for implementing the proprietary control remains with the performing parties. Performing parties should also account for riverfront access and public uses in developing their proprietary controls. Area-specific IC Plans and proprietary controls should describe the tools to be employed for avoiding, minimizing, and promptly detecting any impacts to the remedy from those activities, including a robust long-term program for monitoring and reporting. Performing parties should address how any damage to the remedy will be handled in their Operation and Maintenance Plans, including protocols for inspection and repair.

4.3 Enforcement and Permit Tools with Institutional Control Components

Enforcement and Permit Tools with IC Components are legal tools, such as federal and state regulatory permits, administrative orders, and consent decrees that limit certain site activities or require the performance of specific activities. For the PHSS, this category has tools that may be applied sitewide or to a specific project area.

EPA IC guidance recommends that performing parties identify existing or anticipated enforcement and permit tools for protecting their remedial area in their area-specific IC Plans. Information regarding regulatory permitting processes for non-CERCLA activities is included in Section 5 of the Programmatic IC Plan rather than being required in individual area-specific IC Plans. The guidance also recommends that performing parties familiarize themselves with the enforcement processes, authorities, and jurisdictional requirements specific to the ICs selected to protect caps and mitigation areas (EPA, 2012a) such as those outlined in this Programmatic IC Plan.

4.4 Informational Devices

Informational devices provide pertinent information or notification to the public and other interested parties that contamination remains in the remedial area. EPA guidance refers to notices of the presence of contamination, notices of use restrictions, or other advisory notices as informational devices. This includes the following:

- Fish advisories (see Section 3)
- Signs and buoys (see Sections 3, 4.1.1, 4.1.2, and 6)
- Maps (see Sections 4.1.1 and 4.1.2)

- Visual indicators on riverbank caps
- Deed notices
- PHSS IC Registry

These general public notices are not enforceable restrictions, but rather seek to guide human behavior.

4.4.1 Visual Indicators

Visual indicators can include physical barriers or demarcations put in place to delineate the boundary between clean and contaminated media in riverbank areas. An example of this is the installation of geofabric on a beach to indicate when erosion has taken place and the underlying contaminated soil is in danger of being exposed. Each performing party should evaluate potential visual indicators as part of the remedial design process. The development of visual indicators should be included in the overall remedial design and noted in the area-specific IC Plan.

4.4.2 Deed Notices

Deed notices are ineffective in practice and expire and/or can be removed. Deed notices are not enforceable restrictions on the future use of a property. EPA does not anticipate using deed notices at Portland Harbor. EESs should be used to communicate the details of contamination and the restrictions on property uses for the protection of the remedy.

4.4.3 Institutional Control Registry

To be effective, information regarding ICs must reach the intended audiences. The IC Registry for the PHSS will be established as part of the IMS to provide stakeholders with information on ICs. The IC Registry will provide comprehensive information and a centralized access point for PHSS ICs. The IC Registry will be an online tool accessible to the public; performing parties; and federal, state, tribal, and local agency personnel. All performing parties are required to include this IC in their area-specific IC Plan and participate as outlined in this Programmatic IC Plan. Submittal requirements are discussed in Sections 6 and 7 of this Plan and in the IMP.

To maintain this IC, performing parties shall confirm the accuracy of their area-specific IC information available on the IC Registry at least annually and whenever area conditions change. Performing parties shall submit records of the IC confirmation process as part of the performing parties' IC Inspection Report.

SECTION 5: Agency Coordination, Authorities, and Permitting for Non-CERCLA Activities

Once sediment and/or riverbank cleanup(s) are completed in any particular area of the PHSS, coordinated permit application reviews can be used to prevent future development, or other non-CERCLA activities, from: (1) exposing contaminated sediments or soil; or (2) otherwise adversely impacting the integrity of the remedy. Coordination will need to occur with federal, state, and local regulatory authorities during future permitting of activities that have the potential to disturb subsurface contaminated sediments or capped areas (EPA, 2017). The following are examples of potential future non-CERCLA activities that may require a permit from federal, state, or local municipal agencies: dredging and filling activities or the construction, removal, or maintenance of utility lines and outfall structures, road crossings, beach nourishment, riprap, jetties, pilings/dolphins, docks, wharves, bulkheads, marinas, ramps, overwater decks, piers, boat lifts, moorages, habitat restoration, buoys, booms, or causeways to docks and wharves.

A series of decision trees and outreach materials will be developed by EPA to guide planning and implementation of non-CERCLA activities that have the potential to result in releases of existing contamination or negatively impact MNR (e.g., ground-disturbance from installation of fences, fiber optic lines, etc.). EPA intends that this material will describe the information needed to be exchanged, the types of permits on which federal, state, and local regulatory authorities will confer, data to be collected, necessary oversight, and relevant BMPs necessary for various types of in-water work at the pre-, during, and post-cleanup process. The guidance that EPA will develop will also ensure that different types of permits follow similar principles to protect the remedy specific to submerged or terrestrial caps. EPA also anticipates that its guidance will ensure areas above CULs but below RALs and PTW thresholds are not disturbed in a manner that could recontaminate a nearby cap or negatively impact its progress towards achievement of RAOs via MNR.

This section discusses the regulatory authorities, as well as the permits or coordination activities, which agencies currently use within the PHSS to review non-CERCLA-related permit applications. This section also summarizes ODSL non-CERCLA proprietary use authorizations and the processes used to review applications for such authorizations within the PHSS for general informational purposes and to clarify the relationship between those proprietary use authorizations and ODSL regulatory authorities. As outlined in this Programmatic IC Plan in Section 7, an IC Registry will be established that will make IC data accessible to the public and to agency personnel. The IC Registry would provide an information resource for regulatory or land management agencies such as USACE and ODSL to identify potential interactions with remedial features.

5.1 Summary of Authorities and Authorizing Agencies

This section lists the specific laws and regulations granting government agencies the authority to protect natural and public resources and to administer or coordinate on permitting or authorization programs in Oregon that may apply to the bed and banks of the Willamette River.

5.1.1 River and Harbors Act, U.S. Army Corps of Engineers

Through the Civil Works program, USACE serves the public by providing responsive management of U.S. water resources. USACE restricts waterway use under 33 U.S. Code (USC) 408 (Section 408) of the Rivers and Harbors Act of 1899 (RHA) which states that it is unlawful for any person to use for any purpose, or build upon, alter, deface, or destroy civil works projects.[73] Civil works projects include the development and management of U.S. water resources and the restoration, protection, and management of aquatic

[73] USACE use restrictions are enforceable under 33 U.S. Code 413 applicable to U.S. waterways.

ecosystems (USACE, 2022). These use restrictions only apply to portions of the PHSS within or are close enough to alter the federal navigation channel, U.S. Moorings, or other federally authorized USACE civil works projects.

5.1.2 Clean Water Act Section 404

The CWA[74] prohibits the unauthorized discharge of a pollutant to navigable waters from a point source and regulates floodplain filling. Under Section 404,[75] the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States.

The administration of Section 404 involves coordination with federal, state, and local agencies. In Oregon, the regulatory program is implemented by USACE under the oversight of EPA. Section 404 authorizes the Secretary of the Army to issue permits for the discharge of dredged or fill material into waters of the United States when certain conditions are met. EPA develops and interprets policy guidance and oversees the implementation of Section 404.

During the processing of a CWA Section 404 permit application, the USACE is required to complete consultations or coordinate with other agencies to determine the effect of the proposed action and identify appropriate permit conditions. These include coordination with ODEQ regarding CWA Section 401 water quality certification, as well as consultation with National Marine Fisheries Service and U.S. Fish and Wildlife Service for compliance with Section 7 of the federal Endangered Species Act,[76] consultation with federally recognized Tribal Governments under their federal trust responsibilities, and consultation with Oregon's State Historic Preservation Office under Section 106 of the National Historic Preservation Act of 1966. USACE requires that a CWA Section 401 water quality certification be finalized by ODEQ before the USACE can issue a 404 permit.

5.1.2.1 Dredge and Fill Permits, U.S. Army Corps of Engineers

The USACE and EPA share responsibilities for implementing CWA Section 404, divided among distinct geographic jurisdictions. Responsibilities include individual and general permit decisions, jurisdiction determinations, and enforcement. Proposed activities are regulated through a permit review process conducted by the USACE. The USACE conducts this permit review process under its Regulatory Program. The Regulatory Program also implements other USACE authorities, including Section 10 of the RHA,[77] which governs work impacting navigable waters. Activities requiring Section 10 permits include:

- Construction or installation of piers, wharves, bulkheads, dolphins, marinas, ramps, floats, overhanging decks, buoys, boat lifts, jet ski lifts, intake structures, outfall pipes, and cable or pipeline crossings
- Dredging and excavation
- Overhead transmission lines, tunnels, or directional bore holes

Federal regulations require permits for any construction that would impact the course, capacity, or condition of the navigable waters of the United States. These regulations apply to in-water areas of the PHSS up to the line of ordinary high water. Under CWA Section 404(b)(1),[78] no discharge shall be allowed if it does the following:

[74] 33 USC §§ 1251–1387; see link in Appendix A-2.
[75] 33 USC § 1344; see also 40 CFR §§ 230.1–230.98 and 33 CFR Parts 320–332; see links in Appendix A-2.
[76] 50 CFR Part 402; see link in Appendix A-2.
[77] 33 USC 403; Chapter 425, 30 Statute 1151; see link in Appendix A-2.
[78] 40 CFR § 230.10(b); see link in Appendix A-2.

- Causes or contributes to violations of water quality standards, pursuant to Section 401 of the CWA, after consideration of local dilution and dispersion.
- Violates any applicable toxic effluent standard or discharge prohibition under Section 307 of the CWA.

USACE has several enforcement methods available for unauthorized dredge and fill activities. These include cease and desist orders and corrective orders. In response to permit non-compliance concerns, USACE may pursue voluntary compliance or a permit modification with the cooperation of the responsible party or may issue a compliance order to the responsible party.

USACE may pursue criminal or civil actions to obtain penalties, compliance with orders, or other relief. Generally, USACE will do so when the violations are willful, repeated, flagrant or result in substantial impacts. The USACE procedures for assessing administrative penalties provides for notice, opportunities for a hearing, and administrative and judicial review. Under certain circumstances, the USACE may refer an enforcement matter to the U.S. Department of Justice. As EPA has independent enforcement authority for unauthorized discharges, USACE may coordinate with EPA on an enforcement response.

5.1.2.2 Clean Water Act Section 401, Oregon Department of Environmental Quality

Section 401 of the federal CWA authorizes states and Native American Tribal Governments to issue water quality certifications for federal permits or licenses that may result in a discharge to waters of the United States. The certification is a determination that the discharge will comply with applicable provisions of the CWA, including state water quality standards. A federal permit or license cannot be issued until a CWA Section 401 water quality certification is received. ODEQ's Water Quality Certification Program reviews and evaluates the water quality impacts of CWA Section 404 permit decisions in the PHSS.[79] A certification may impose additional conditions, including the use of best management practices, monitoring, and impact avoidance.

Section 401 certifications are enforceable as terms of the underlying regulatory permit.

5.1.3 Oregon Removal-Fill Law, Oregon Department of State Lands

Oregon's Removal-Fill Law requires parties that plan to remove or fill material in wetlands or waterways to obtain a permit from ODSL. This permit is broadly referred to as the "removal-fill permit."[80] The purpose of the law is to ensure protection, conservation, and best use of Oregon's water resources.[81]

The Removal-Fill Law applies to waters of this state.[82] Waters of this state include the jurisdictional portions of the Pacific Ocean, tidal bays, tidal rivers, estuaries, non-tidal rivers, perennial and intermittent streams, lakes, ponds, wetlands, and reservoirs. In addition, certain ditches and created wetlands and ponds are also considered waters of the state. Rivers, perennial and intermittent streams, lakes, ponds, and specific ditches are jurisdictional to the line of ordinary high water, meaning the line on the bank or shore to which the high water ordinarily rises. The line of ordinary high water is generally identified in the field using field indicators, gauge data, or direct observation of an annual high-water event.

[79] OAR Chapter 340, Divisions 41 and 48; see links in Appendix A-2.
[80] A permit issued under the Removal-Fill Law may be issued as a removal permit, fill permit, or a removal-fill permit depending upon the work for which the permit is sought.
[81] ORS 196.795–990; see also OAR Chapter 141, Division 85; see links in Appendix A-2. *Note:* With the exception of ORS 196.825(5) and applicable substantive mitigation rules at OAR 141-085-0510, and OAR 141-014-0680 to -0715, the Removal-Fill Law is not an ARAR, and applies only to non-CERCLA action.
[82] "Waters of this state" include both privately owned and publicly owned waterways. The term does not refer to State ownership.

In most cases, a removal-fill permit is required if an activity will involve filling or removing 50 cubic yards or more of material in waters of this state including wetlands or waterways. For activities in State-designated Essential Salmonid Habitat (ESH), State Scenic Waterways, and compensatory mitigation sites, a permit is required for removal or fill in any amount.[83] The Willamette River is ESH-designated.

Many activities are exempt (or under certain circumstances may be exempt) from the Removal-Fill Law. These include, but are not limited to actions that might reasonably be expected to occur in PHSS and could potentially impact the remedy:

- Maintenance of a federally authorized navigational channel, including dredging and navigational structures
- Maintenance or emergency reconstruction of roads and transportation structures, including riprap protecting roads, causeways, and bridge abutments or approaches
- Maintenance or reconstruction of water control structures, including riprap.[84]

5.1.4 Authorization for Use of State-Owned Submerged and Submersible Lands, Oregon Department of State Lands

Many uses of State-owned submerged and submersible land require a proprietary authorization from ODSL, which may be in the form of an easement, lease, license, registration, or other access authorization depending upon the type, area, and term of use (see Section 5.2.3).[85] These proprietary authorizations are not regulatory in nature but are described here for informational purposes.

ODSL manages the lands under its jurisdiction with the object of obtaining "*the greatest benefit for the people of this State, consistent with the conservation of this resource under sound techniques of land management.*"[86] Authorized uses of State-owned submerged and submersible land must conform to federal, state, and local (e.g., land use and zoning) laws. Further, ODSL cannot authorize a proposed use or structure if it would unreasonably interfere with public trust rights, have unacceptable impacts on public health, safety or welfare, result in the loss of or damage to natural, historical, cultural, or archaeological resources, is prohibited by State Land Board or ODSL closure restrictions or waterway management plans, or is inconsistent with an endangered species management plan adopted by ODSL.[87]

ODSL may not grant certain authorizations if it determines that the proposed use or development would unreasonably impact uses, or developments proposed or already in place. ODSL may also deny an application if available information indicates that the applicant may not be able to conform its use to or comply with the requirements of an authorization.[88]

Many uses of submerged and submersible land within PHSS are not subject to ODSL's proprietary authority. ODSL's land management authority is subject to rights and limitations under common law (e.g., public trust and riparian rights) and statute. Similarly, a proprietary authorization does not supplant obligations under

[83] OAR 141-085-0520; see link in Appendix A-2.
[84] ORS 196.921; OAR 141-085-0530; see link in Appendix A-2.
[85] OAR Chapter 141, Division 14 (sand and gravel leases and licenses); Division 82 (general leases, licenses, registrations); Division 123 (easements on non-trust lands); Division 125 (access for special uses). *Note:* The process by which performing parties secure access to State-owned submerged and submersible land to implement the CERCLA remedy in PHSS, including maintenance and monitoring of the remedy, is not governed by these rules and not within the scope of this Programmatic IC Plan. See links in Appendix A-2.
[86] Oregon Constitution, Article 8, § 5 (2); see link in Appendix A-2.
[87] E.g., OAR 141-082-0260, -325; OAR 141-123-0020, -0110; OAR 141-014-0220 to -250. See links in Appendix A-2.
[88] E.g., OAR 141-082-0260, -280; OAR 141-123-0020; OAR 141-125-0110; OAR 141-014-250. See links in Appendix A-2.

Oregon's Removal-Fill Law or relieve the holder or any other party from the obligation to get a removal-fill permit when one is required (see Sections 5.1.3).

Applicants should refer to ODSL's rules for the specific application requirements, review criteria and conditions on any use authorization granted by the State. (Appendix A-1 includes contact information for ODSL by topic, and Appendix A-2 includes links to websites for all laws, rules, codes, and guidance mentioned in the footnotes of this Plan.)

5.1.5 City of Portland Development Code, Bureau of Development Services

Most proposed development on private property requires a building permit[89] through the City of Portland Bureau of Development Services (BDS).[90] However, certain types of development may require specific permits, such as trade permits (mechanical, electrical), sign permits, and zoning[91] permits. Building permits are also used for the following:

- Checking land use review conditions that may be applied as part of that process
- Projects in the right of way
- Projects in waterbodies where zoning regulations apply but are permitted by a City bureau other than BDS (such as the Bureau of Environmental Services).

Various City bureaus are part of the permit review process and evaluate permits against the evaluation criteria in each bureau's code. Bureau reviews generally include the following:

- **BDS Plan Review** – reviewing building code, structural, floodplain regulations, erosion control, and similar aspects
- **BDS Land Use Services** – reviewing against the Zoning Code (Title 33) and tree regulations (Title 11)[92]
- **Bureau of Transportation** – reviewing for right-of-way dedication and improvement requirements
- **Bureau of Environmental Services** – reviewing for sanitary and stormwater requirements
- **Water Bureau** – reviewing for water service requirements
- **Portland Fire & Rescue** – reviewing for fire code requirements
- **Portland Parks & Recreation Urban Forestry** – reviewing for city and street tree requirements (preservation and planting)

BDS issues permits and land use decisions authorized by several Portland City Code titles, including Title 33 Overlay Zoning Code and Title 24 Building Regulations.[93] City Code Title 3 gives BDS the authority to adopt, amend, and repeal administrative rules, policies, procedures, and forms for the enforcement of applicable code provisions and laws to carry out its duties. Duties are set forth in Portland City Code Chapter 3.30.010, and include (but are not limited to) the following:

- Administration and enforcement of building, plumbing, electrical, and other regulations
- Examination and checking of applications, plans, specifications, and supporting documentation required as a prerequisite to the approval of land use actions and permits for development

[89] There are some exceptions, generally for small scope work.
[90] The BDS website; see link in Appendix A-2.
[91] Zoning permits are for projects that do not trigger a building permit but provide City review of the project against Portland City Code.
[92] Portland City Code Titles 33 and 11; see links in Appendix A-2.
[93] Portland City Code Titles 33 and 24; see links in Appendix A-2.

- Issuance of approvals and permits required for the construction, installation, repair, or alteration of land, buildings, or equipment
- Inspection of sites, buildings, or other structures and equipment for compliance with plans and specifications and with applicable City Code provisions and laws

In addition, BDS implements Oregon Statewide Planning Goal 15 for the Willamette River Greenway through comprehensive planning and regulatory actions. The goal is to enhance opportunities for use along the Willamette River. Within the PHSS, projects associated with Goal 15 may include overwater or bank work, such as walkways or other structures, for example.[94]

5.2 Permitting and Use Authorizations for Non-CERCLA Activities

Permits for non-CERCLA activities, including activities conducted under permits issued after implementation of the PHSS remedy, have the potential to impact non-erodible riverbank soil or capped areas. For example, dredge activities under a maintenance dredge permit, or sediment core sampling for a non-CERCLA dredge material evaluation under the CWA, in the area of a sediment cap could potentially damage the cap's integrity. In addition to capped areas, EPA's interests under the Section 404 Letter of Agreement (see Section 3.2) for both riverbank and in-water areas may extend into other submerged and submersible areas of the PHSS. For example, CWA Section 404-permitted dredging in an area that does not exceed RALs or PTW thresholds but does significantly exceed CULs can have a detrimental impact on the cleanup if contamination is dispersed into adjacent areas (EPA, 2018b). USACE coordinates with EPA, and EPA coordinates with DEQ, for PHSS CWA Section 404 permits. In addition, ODSL and BDS are also involved with respect to riverbank and submerged and submersible land within the PHSS.

Federal, state, and local agencies are responsible for reviewing applications and issuing permits and authorizations. The types of non-CERCLA regulatory permits and proprietary use authorizations these agencies administer are detailed below.

5.2.1 U.S. Army Corps of Engineers Waterway Use Restrictions

Congress mandated that any use or alteration of a civil works project (i.e., navigation channel or other USACE authorized projects) is subject to the approval of USACE.[95] To ensure that civil works projects continue to provide their intended benefits, any use or alteration of a civil works project by another party is subject to the approval under Section 408. This provides USACE with the authority to protect the navigation channel from proposed alterations, which may include remedial actions, improvements, relocation, or installation of utilities. While USACE may grant permission for another party to alter the navigation channel, USACE must determine that the proposal will not be injurious to the public interest or impair the usefulness of the navigation channel.

A portion of the remedial action will be implemented within the federal navigation channel. USACE oversight over the navigation channel serves as protection for these limited portions of the remedy to be implemented in the PHSS.

5.2.2 U.S. Army Corps of Engineers Permits for Dredge and Fill Activities

In addition to the list in Section 5.1.2.1, the following are examples of non-CERCLA activities that may require a permit from USACE: dredging and filling activities and the construction, removal, or maintenance of

[94] Department of Land Conservation and Development Goal 15; see link in Appendix A-2.
[95] This requirement was established in Section 14 of the RHA, which has since been amended several times and is codified in Section 408.

utility lines, road crossings, beach nourishment, riprap, jetties, pilings, moorages, habitat restoration, booms, or causeways to wharves. Section 404 of the CWA prohibits any person from discharging dredged or fill material into the waters of the United States (including the Willamette River) without first obtaining a permit and undergoing agency coordination as required by the Section 404 Letter of Agreement. A similar ODSL permit is required under the Oregon Removal-Fill Law (ORS Chapter 196); see Section 5.2.3 below.

Five types of USACE permits are applicable to filling and dredging. Within the PHSS, only two categories are issued, the General Permit [96] and Standard Individual Permit (Individual Permit):

- **General Permits (Nationwide, regional or state):** This type of permit is authorized for projects with minimal adverse impacts (i.e., commercial developments, utility lines, or road improvements). The applicant must complete the Pre-construction Notification Form to apply for this permit. The CWA requires USACE to re-authorize a Nationwide Permit every five years.
- **Individual Permits (standard individual and letter of permission):** Individual permits are for activities that do not meet the threshold for a General Permit because they have greater-than-minimal impacts. Individual Permit applications are evaluated using additional environmental criteria and involve a more comprehensive public interest review than for the General Permits. In Oregon, the application for this permit is a USACE/ODSL Joint Permit Application (JPA).

As part of the permit application review process, USACE coordinates with some or all of the following agencies with sediment or water quality mandates. Each of these reviews represents an opportunity to assess whether activities may compromise the integrity of the remedy.

- **EPA** – USACE coordinates with EPA on permits that have the potential to impact the PHSS remedy. EPA is notified of permit applications for CWA Section 404 and/or RHA Section 10 permits for non-CERCLA work, any facility or area located between the confluence of the Willamette and Columbia Rivers and the Willamette Falls (river mile 0 to river mile 26) as well as within the eastern end of Multnomah Channel. EPA will review permits and permit applications and make recommendations to USACE, which may include permit conditions, modifications, or work stoppage.
- **Portland Sediment Evaluation Team (PSET)** – The PSET is an inter-agency review team that evaluates sediment quality when reviewing non-CERCLA dredging permit applications involving dredging or the placement of dredged materials for unconfined, aquatic placement and unconfined, aquatic exposure of the post-dredge surface. The PSET agencies include USACE (lead), EPA Region 10 (co-lead), ODEQ, National Marine Fisheries Service, and U.S. Fish and Wildlife Service and Washington State Department of Ecology. Under the May 2018 *Sediment Evaluation Framework for the Pacific Northwest* (RSET, 2018), the PSET determines the need for sampling under the CWA, reviews and approves sediment sampling and analysis plans, and reviews sediment quality data of the dredge prism and post-dredge surface. In coordination with EPA CERCLA personnel and ODEQ Cleanup personnel, the PSET issues a joint Suitability Determination Memo (SDM) identifying if sediments are suitable for unconfined, aquatic placement and the need for post-dredge surface management. Typically, the PSET review is completed prior to submittal of the JPA to the USACE Regulatory Program.
- **ODEQ** – Through its federal CWA Section 401 water quality certification program, ODEQ reviews CWA Section 404 and RHA Sections 9 and 10 permit applications. ODEQ is responsible for issuing water quality certifications in Oregon and may also provide input to ODSL on removal-fill permit applications on the potential water quality effects of a proposed removal and fill project. During the certification review process, ODEQ verifies conformance to applicable state and federal water quality standards.

[96] The USACE Portland District website has additional information about the general permits available; see link in Appendix A-2.

On a case-by-case basis, EPA may conduct oversight of permitted work in the Portland Harbor to ensure compliance with permit conditions.

5.2.2.1 Clean Water Act Section 404 Permit Process

The USACE has the authority to regulate the discharge of dredge or fill material into waters of the United States.

Currently, USACE Regulatory Program does not specifically check for PHSS remedies (such as a cap) during its permit review. However, USACE coordinates with EPA on CWA Section 404 permit applications and proprietary controls within the PHSS. USACE relies on EPA to alert it to potential conflicts that the proposed permit/proprietary control may have with PHSS remedies. Per the Section 404 Letter of Agreement, USACE coordinates with EPA on permits if they have the potential to impact the PHSS remedy. EPA conducts a 3--dimensional data review on the Leapfrog platform to evaluate the potential for dispersion of contaminants above CULs, RALs or PTW thresholds and possible leave surface concentrations relative to ROD RAOs. USACE issues permits only after the proposed discharge is reviewed and measured against the requirements of the CWA, including the CWA Section 404(b)(1) guidelines, for compliance.[97]

The USACE RHA Section 408 review process to prevent the alteration of a Congressionally authorized federal project is conducted concurrently with the Regulatory Program CWA Section 404 permit review process. The Section 404 permit cannot be issued until the Section 408 determination is completed.

5.2.2.2 Clean Water Act Section 404 Permit and Remedy Protection

USACE authority to deny a permit does not include protecting a CERCLA remedy. While permits that have the potential to impact a remedy are typically withdrawn rather than denied, EPA CERCLA enforcement may be used in conjunction with USACE/EPA coordination on CWA Section 404 permits.

USACE and EPA will coordinate on the following tasks to ensure that the CWA Section 404 permit can be used to prevent impacts to the remedy:

- EPA plans to update the Letter of Agreement with DEQ and USACE.
- As noted above, a series of decision trees and outreach materials will be developed by EPA to facilitate permittee submittals, agency review, and best management practices selection, and to guide planning and implementation of non-CERCLA activities that have the potential to result in releases of existing contamination or negatively impact MNR.

EPA and USACE will consider field inspections of non-CERCLA dredge and fill activities to ensure permit terms are being followed and to prevent impacts to the remedy.

5.2.2.3 Clean Water Act Section 401 Certification Process

Under Section 401 of the federal CWA, ODEQ's Water Quality Certification Program reviews and evaluates the water quality impacts of projects that require a federal permit or license to conduct any activity that may result in a discharge (including dredge and fill material) into waters of the United States. Section 401 of the CWA gives states and tribes the authority to issue state water quality certifications for projects that require a federal license or permit, such as a CWA Section 404 permit. The 401 certification states that the discharge will comply with applicable provisions of the CWA, including state water quality standards. Oregon's water quality standards specify the designated use of a waterbody (e.g., for water supply or recreation), pollutant limits necessary to protect the designated use (in the form of numeric or narrative criteria), and policies to

[97] 40 CFR Part 230; see link in Appendix A-2.

ensure that existing water uses will not be degraded by pollutant discharges. In general, the current process includes reviewing a project application, evaluating impacts, requesting additional information, providing comments, and working with an applicant to modify the project if necessary to ensure compliance with state water quality standards. A certification may impose additional conditions, including the use of best management practices, monitoring, and impact avoidance. When required, a federal permit or license cannot be issued until a water quality certification of compliance with Section 401 of the CWA is received.

ODEQ coordinates with USACE in the processing of certification applications for activities requiring CWA 404 removal-fill permits, and the application for a CWA 404 removal-fill permit constitutes an application for CWA 401 certification, although DEQ may request additional information. Currently, ODEQ's 401 program does not specifically check for PHSS remedies (such as a cap or presence of buried contamination) during its permit review, however evaluation of designated use and pollutant limits frequently results in internal coordination with other ODEQ programs. Because a CWA 401 certification is triggered by CWA 404 permit, ODEQ relies on the CWA 404 review process, which includes EPA review to alert it to potential conflicts with PHSS remedies.

5.2.2.4 Clean Water Act Section 401 Certification and Remedy Protection

ODEQ's authority to issue a CWA 401 certification is based on authority to prevent pollution and ensure compliance with water quality standards. As noted above Oregon's water quality standards specify the designated use of a waterbody (e.g., for water supply or recreation), pollutant limits necessary to protect the designated use (in the form of numeric or narrative criteria), and policies to ensure that existing water uses will not be degraded by pollutant discharges. ODEQ may also use the CWA 401 certification to impose additional conditions on permitted activities, including the use of best management practices, monitoring, and impact avoidance to ensure that a project meets state water quality standards. As such, the CWA 401 certification process reduces the potential for projects that would degrade the designated use of the Willamette River, including fishing and fish and aquatic life, and thus supports the protection of the remedy. However, the CWA 401 certification process is not designed to protect a CERCLA remedy, and it is the performing party's responsibility to develop an area-specific IC Plan to prevent activities that would impact a remedy.

5.2.3 Oregon Department of State Lands Removal-Fill Permits

For those activities that are not exempt, ODSL offers several types of removal-fill permit authorizing removal and fill activities in wetlands and waterways. These include general authorizations, general permits, emergency permits, and individual permits. Each permit type involves different applications or notification requirements, issuance criteria, and conditions. ODSL typically coordinates with USACE, ODEQ, and local governments. For PHSS-specific projects, ODSL reviews information provided by the PSET.

5.2.3.1 General Authorizations

General authorizations are regulatory permits adopted by rule for a category of activities that ODSL has determined are: (a) substantially similar in nature; (b) would cause only minimal individual or cumulative impacts; and (c) would not result in long term harm to water resources. These include minimal disturbance within ESH, piling placement and removal within ESH, bank stabilization, and transportation-related activities.[98]

Applicants are required to submit a project notification to ODSL at least 30 days before starting a project. ODSL will then review the application for completeness and eligibility. If ODSL determines that the notice is

[98] OAR 141-089-0660 through 141-089-0675, 141-089-0680 through 141-089-0695. OAR 141-089-0720 through 141-089- 0735 and 141-089-0740 through 141-089-0755. See links in Appendix A-2.

complete and the activity is eligible, the applicant can proceed with its project, subject to the general conditions applicable to general authorizations. However, if ODSL determines that a noticed activity is ineligible for a general authorization, it will notify the applicant of the specific reasons for its determination, at which point the applicant may revise its project or apply for an individual removal-fill permit, which involves greater review and additional permit conditions. The applicant may commence the activity immediately upon receipt of ODSL notice of eligibility, or within 30 calendar days after ODSL received the applicant's notification, if the applicant has not been notified by ODSL that its notification was incomplete or its project is ineligible for a general authorization. This latter provision presents a possible vulnerability as general authorizations are allowed in the PHSS. ODSL is currently exploring rulemaking to address this concern, but final decisions have not been made on how best to address it.

5.2.3.2 General Permits

General permits authorize a group of activities that are substantially similar in nature, recurring or ongoing, and have predictable effects and outcomes.[99] A general permit for use by the general public is adopted through rulemaking. A general permit may also be adopted by order for a specific applicant or group of applicants. ODSL currently has two general permits available for removal-fill activities that may occur in the PHSS related to navigational access, maintenance dredging, and certain activities relating to existing transportation-related structures.

General permits have a 15-day public review period and conditions similar to those applicable to an individual permit. Conditions include erosion control protections, work area isolation, restrictions on how equipment enters the water below the ordinary high-water line, piling placement methods, and restrictions on the type of dredging equipment. For areas with ICs, ODSL may include additional application requirements and activity or PHSS-specific conditions.

5.2.3.3 Emergency Permits

Emergency permits allow ODSL to provide rapid approval for removal or fill when conditions pose an immediate and direct threat to human health, safety, or substantial property where prompt action is required to address the threat and the nature of the threat does not allow time to obtain another form of permit.[100] The proposed action must be the minimum necessary to address the threat. ODSL may require that modifications to the project be made after the emergency has passed. To apply for an emergency permit, an applicant must submit the Emergency Application form.

5.2.3.4 Permit Waivers

Certain activities may be conducted without securing a removal-fill permit, if the party obtains a permit waiver. These activities are not exempt from ODSL substantive requirements. Instead, permit waivers are issued on applications submitted to ODSL as part of a separate state or federal process.[101] In such cases, an application similar to an individual JPA must be submitted, although certain information is not required.

[99] ORS 196.816 and .817; OAR 141-093-0250 through 141-093-0280 and 141-093-0140 through 141-093-0151. See links in Appendix A-2.
[100] ORS 196.810(4) and OAR 141-085-0676. See links in Appendix A-2.
[101] Examples include DEQ Remedial Action under ORS 465.315(3); corrections facilities siting under ORS 421.628; solid waste landfills under ORS 459.047; industrial development projects of state significance under ORS 564. See links in Appendix A-2.

The most likely scenario in or near PHSS is remedial or removal action under ODEQ oversight. Pursuant to ORS 465.315(3), an ODSL permit is not required, but substantive requirements must still be satisfied.[102] In these processes,ODSL has an opportunity to review the application and require that substantive permit conditions be imposed by the lead agency. The lead agency may impose those conditions when approving the project.

5.2.3.5 Individual Permits

Individual permits are required for projects that are not exempt from permitting requirements or eligible for other forms of removal-fill permitting and require submission of a JPA. The application, which must be submitted to both ODSL and the USACE, is reviewed against a list of criteria including purpose and need, alternative sites and designs, and minimization of impacts.[103] If a project is found to meet all requirements, the application is circulated for 30 days review to all adjacent landowners, watershed councils, public interest groups, affected local government land use planning departments, ODEQ and other state agencies, federal agencies, and Tribal Governments in the geographic area affected by the permit.

If, after all information is considered, a permit will be issued, ODSL is required to complete a findings document for the project. There is opportunity to include specific findings to minimize reasonably expected adverse impacts on remedies within the PHSS. As with general permits, ODSL may include additional application requirements and activity or PHSS-specific conditions in individual permits.

Under the Removal-Fill Law, violations include unauthorized removal-fill and noncompliance with any condition of a permit or general authorization for removal-fill. ODSL is authorized to take appropriate actions to remedy a violation or alleged violation. The administrative remedies available to ODSL include cease and desist orders, consent agreements, and restoration orders. The consent decrees and restoration orders may include imposition of civil penalties on the responsible party and require corrective actions necessary to resolve the violation. ODSL may revoke or suspend a removal-fill permit if an alleged violator is not in compliance with any conditions of a permit, or if the applicant failed to provide complete and accurate information in the permit application.

For additional information about the Oregon Removal-Fill Law, please see ODSL's Permits & Authorizations web page and Removal-Fill Guide.[104]

5.2.3.6 Oregon Department of State Lands Removal-Fill Permit Process

If an activity is not exempt per statue or ODSL rule, a permit is required. There are four types of permits and three application forms. Each application (the JPA, Emergency Permit application, and the General Authorization Notification)[105] requires the specific location of the work (both a legal description and latitude/longitude) and the project narrative outlining activity types to allow ODSL determination of project eligibility. ODSL will be able to cross-reference this information in the IC Registry when reviewing applications for eligibility and completeness in all specific permitting processes. The individual, general, and emergency permits generally include a monitoring and reporting requirement. ODSL may include additional application requirements and activity or PHSS-specific conditions in individual permits. For example, for those projects that go through the PSET process, applicants for Individual Permits, Permit Waivers and/or General Permits are asked to provide a copy of the PSET findings document if they are proposing dredging in PHSS or in-water disposal of material removed within PHSS.

[102] DEQ's Director may also exempt the on-site portion of a removal or remedial action under ORS 465.200-.545 and .900 from substantive requirements in ORS Chapters 466, 459, 468, 468A and 468B. Those are not the authorities under which ODSL issues its permits or authorizations. See links in Appendix A-2.
[103] OAR 141-085-0550(5); see link in Appendix A-2.
[104] See links to ODSL Permits & Authorizations and the ODSL Removal-Fill Guide in Appendix A-2.
[105] The JPA is used for Individual Permits, General Permits and Permit Waivers.

5.2.3.7 Oregon Department of State Lands Removal-Fill Permit and Remedy Protection

ODSL's removal-fill permitting authority is not designed to protect a CERCLA remedy. It is, however, founded on protection, conservation, and best use of the water resources of the state, including aquatic life, habitat, and other natural resources in and under the waters of the state.[106] To that end, it supports protection of the remedy,

For those projects that are non-compliant with permit conditions, ODSL has the authority to temporarily halt or modify the project, or require rectification (repair, restoration, rehabilitation) in case of unforeseen adverse effects, or require corrective action. In the case of unauthorized activities in violation of the Removal-Fill Law, ODSL has the authority to halt the activity impacting the remedy and require mitigation of adverse impacts.[107]

Although there are some activities that do not require an ODSL removal-fill permit, these activities are unlikely to impact the remedy. For example, dredge events of less than 50 cubic yards are typically exempt from permit requirements. However, the Willamette River is ESH-designated; therefore, a permit is required for any volume of removal or fill. Also, ODEQ remedial actions are exempt from the requirement to obtain ODSL removal-fill permits[108] but are still required to obtain USACE permits and would, therefore, be addressed under that regulatory process.

5.2.4 Oregon Department of State Lands Proprietary Use Authorizations

ODSL authorizes commercial, non-commercial, and public uses on, under, or over State-owned submerged and submersible land, under proprietary use authorizations, including, easements, leases, licenses, registrations, and access agreements.[109] The proprietary use authorizations are independent of the regulatory permitting described above and are included here for informational purposes.[110] The purpose, scope, review criteria and requirements of each vary, as discussed below and detailed in ODSL's rules.

- **Easement:** Water, gas, electric, and communication lines (including fiber optic), pump stations, pipelines, conduits, stormwater and sewer lines, outfalls, and erosion control structures. Easements are offered for the minimum area and term determined by ODSL to be needed for the requested use. Easements are offered for a term of not more than 30 years, unless otherwise authorized by ODSL's Director.[111]
- **Waterway leases, licenses, and registrations:** [112]
  - **Waterway lease:** Commercial and non-commercial marina/moorages, marine industrial/marine service uses, non-marine uses, floating homes, and large noncommercial boat houses. Leases and public facility licenses (described below) are offered for a term of not more than 15 years, unless

[106] ORS 196.800, .805, and .825; see link in Appendix A-2.
[107] OAR 141-085-0560; see link in Appendix A-2.
[108] ORS 465.315(3); see link in Appendix A-2.
[109] OAR Chapter 141, Division 14 (sand and gravel leases and licenses); Division 82 (general leases, licenses, registrations); Division 123 (easements on non-trust lands); Division 125 (access for special uses); see links in Appendix A-2. *Note:* This Section 5 pertains to non-CERCLA activities. The process by which one would secure access to State-owned submerged and submersible land for non-CERCLA remediation and restoration activities is governed by OAR Chapter 141 Division 145. Non-CERCLA remedial activities on State-owned submerged or submersible land in PHSS, if any, would be under ODEQ oversight and/or subject to the regulatory authorities described below. For that reason, Division 145 is not discussed in this Section 5.
[110] As noted above in Section 5.2.3, some uses of state-owned submerged and submersible land within PHSS do not require proprietary authorization from ODSL. Further, the proprietary authorizations described below do not relieve the holder from the obligation to secure a removal-fill permit from ODSL when one is required.
[111] OAR Chapter 141, Division 123; see link in Appendix A-2.
[112] OAR Chapter 141, Division 82; see link in Appendix A-2.

otherwise approved by ODSL's Director, but may include a right to renew for an additional term of up to 15 years.

- **Public facility license:** Public agency-owned, operated, and maintained docks/floats, boat ramps,boat landings, floating restrooms, navigational aids, and viewing structures.
- **Registration:** Non-commercial docks and boathouses under 2,500 square feet. Floating recreational cabins less than 1,500 square feet, mooring buoys, pilings, navigational aids, revetments, retaining walls, riprap, structures maintained by a drainage or diking district, voluntary habitat restoration projects. Registrations have a term of five years.

- **Sand and Gravel leases and licenses:** Commercial and non-commercial removal or use of rock, sand, gravel and silt ("material") derived from state-owned submerged and submersible land for a term not to exceed three years (license) or 10 years (lease).[113]
- **Special Use Authorization:** A "special use" is broadly defined as a use of state-owned land not covered by other ODSL rules. ODSL's rules include a lengthy, but non-exclusive list of special uses. The rules provide for issuance of a lease, license or short-term access authorization depending upon the use. In Portland Harbor, the Division 125 short-term access authorization has primarily been used to facilitate sampling work but has also been used for other short-term uses such as piling removal. The short-term access authorization is granted for a specific length of time as determined by ODSL's Director for the particular purpose for which access is sought.[114]

Where a given use may be authorized in more than one manner, the appropriate form of authorization is determined by ODSL.

Under Oregon law, certain uses of State lands may be made without obtaining a proprietary authorization. These include:

- **Structures in wharf use**: The construction and maintenance of qualifying wharves is exempt from the requirement to obtain a use authorization from ODSL. The structure owner must obtain a wharf certification, by establishing that its structure is in "wharf use," but ODSL may not place conditions on that certification, which is valid for a term of 10 years. A structure certified as a wharf in compliance with ODSL's rules may be repaired or replaced without prior notice to ODSL. Written notice to ODSL is, however, required within 90 days of making such repairs or replacement.
- **Limited duration uses**: Temporary or infrequent use:
  - Commercial uses of not more than 14 consecutive days in one location.
  - Non-commercial uses of not more than 30 days within a 12-month period, within a distance of 5 miles.[115]
- **Removal of less than 50 yards of material**: A sand and gravel lease or license is not required for a person to remove less than 50 yards of material per calendar year for that person's own exclusive non-commercial use if the person gives ODSL at least 30 days' advance notice of the work and obtains any other permits or authorizations required by ODSL (e.g., removal-fill permit) or a local, state, or federal government entity.[116]

In addition, maintenance and repair of structures, as needed to continue an authorized use, is incorporated into ODSL's proprietary authorization of waterway uses through leases, easements etc. Repair of structures, associated with authorized activities generally do not require an additional or separate proprietary

[113] OAR Chapter 141, Division 14; see link in Appendix A-2.
[114] OAR Chapter 141, Division 125; see link in Appendix A-2.
[115] OAR 141-082-0255(43) and -0265(5); see link in Appendix A-2.
[116] OAR 141-014-0240(4); see link in Appendix A-2.

authorization but may be conducted upon notice to ODSL and in compliance with the initial authorization (e.g., compliance with local, state and federal laws and requirements).

5.2.4.1 Oregon Department of State Lands Proprietary Use Authorization Process

Although ODSL authorizes use of State-owned submerged and submersible land through easements, leases, licenses, registrations or access authorizations under multiple authorities, the processes share common elements, as described below.

ODSL use authorizations begin with an application. ODSL relies on the applicant to provide a complete and accurate application, including a comprehensive description of the proposed use and its location. If the application does not include enough information to determine the proposed use and its precise location, ODSL may request additional information. ODSL may also request, or in some cases require, a meeting with the applicant to discuss the proposed project or use before reviewing the application for completeness.[117]

ODSL does not currently require the applicant to identify the location of potentially conflicting uses; ODSL currently uses its internal databases to identify adjacent or overlapping ODSL authorizations. If there is a corresponding removal-fill application for the proposed use, ODSL will compare the corresponding JPA project description for consistency with the proprietary application.

After determining that an application is complete and is for a use that complies with its rules,[118] the rules, for many of the authorizations, require ODSL to notify and request review and comment from the appropriate city or county planning department, pertinent state and federal agencies, federally recognized Tribal Governments, and other interested persons.[119] For certain authorizations, ODSL requests that commenters provide feedback on specific issues (including potential conflicts with existing or proposed uses); on others, ODSL may require the applicant to respond to comments.[120]

ODSL's rules do not, however, require circulation for comment on all applications. Some forms of authorization do not require circulation;[121] other forms of authorization do not require circulation if the proposed use has already been the subject of an earlier comment process.[122] Similarly, renewal applications may not require the same level of detail given the existing use or structure. Renewal applications are typically not circulated for comment.

Based on ODSL's evaluation of the complete application and the comments received, under the applicable review criteria, ODSL can: (1) approve the application and issue the authorization, as requested; (2) impose conditions on or change the terms of the authorization issued; (3) require the applicant to modify the application to address specific issues, concerns or information needs identified by ODSL or commenters; or (4) deny the application.

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[117] OAR 141-123-0050 (ODSL can require a meeting with the applicant for an easement); see link in Appendix A-2.
[118] See summary of general considerations in Section 5.2.3.
[119] ODSL's rules vary in their description of interested persons, sometimes referring to them as such and sometimes describing the parties to whom complete applications are to be circulated in greater detail, including some or all of the following: ports, all lessees, holders of valid ODSL authorizations in the requested area, adjacent property owners). Compare OAR 141-14-0220(2), with -082-280(8) and -123-0050(4).
[120] ODSL's Sand and Gravel lease rules request comments on specific issues (including potential conflicts with existing or proposed uses); ODSL's waterway lease rules may require applicants to respond to comments. OAR 141-0280(2).
[121] ODSL is not required to circulate an application for a short-term access authorization or a registration for review or comment.
[122] For example, ODSL's rules provide that it shall not circulate an application for a waterway lease or public facility license if the use or structure: has already received the necessary City or County approvals; has already been subject to public comment under an earlier circulation (which may have been on the initial application for the authorized use or an application for a related removal-fill permit); and the authorized use and size of the authorized use area have not changed [OAR 141-082-0280(10)]. Similarly, ODSL may waive circulation of the application for an easement if the use or development has previously been reviewed by the affected agencies and other interested persons [OAR 141-123-0050(6)].

ODSL's authorizations require compliance with applicable laws and rules, and the terms of the authorization. One common requirement in each is that the State-owned submerged and submersible lands subject to the authorization must remain open to public trust uses including, but not limited to, commerce, navigation, fishing, and recreation.[123] ODSL may also include conditions in its authorizations.

Easements and leases can generally be renewed if the use or structures are in compliance with local, state, and federal law and the terms of the authorization. ODSL retains the right to amend terms and conditions on renewal.[124]

5.2.4.2 Oregon Department of State Lands Proprietary Use Authorization and Remedy Protection

The ODSL proprietary authorizations discussed in Section 5.1.4 were developed to facilitate and protect the public trust rights to use and enjoy State-owned submerged and submersible land, within and beyond, PHSS, not to protect a CERCLA remedy.

ODSL's template Submerged and Submersible Land Lease Agreement for new leases within the PHSS has, however, been amended to include an acknowledgement by the lessee that the lease area is within the PHSS, clarification that activities or operations that unreasonably interfere with remedial work are not an authorized use under the lease, and an express condition that the lessee must conduct its operations in a manner that does not interfere with any obligations of the party responsible for the Remedial Work Area.

ODSL will be evaluating its authorizations to determine whether provisions similar to that in its current Submerged and Submersible Land Lease Agreement template or other changes to forms and processes are feasible, appropriate, and add value in terms of protecting implementation and maintenance of the PHSS remedy.

5.2.5 City of Portland Development Permits

City of Portland Development Permits are not an effective mechanism for protecting the remedy. However, the potential exists for these permits to be provided for work done on riverbanks and, therefore, the information is included in the Programmatic IC Plan.

BDS requires permits for plumbing, construction, and building permits for ground-disturbing work. In addition, local zoning ordinances govern the current and future land use of the PHSS and vicinity, which is an important consideration in the evaluation of current and reasonably likely future land uses and associated environmental protection zones (e.g., greenways adjacent to the Willamette River), and stormwater management options.

The City of Portland Bureau of Environmental Services issues permits for work from the riverbank shoreward of, or adjacent to, the harbor line[125] (Appendix D) under authority of City Code 19.16.055. Examples of projects that fall under this type of permit include construction, repair work, or removal of old works, pile driving or removal, and movement of earth or other material.

Potential ground disturbance activities that could affect impacted riverbanks include activities such as: stormwater line installation and repair; streambank restoration; constructing transportation-related structures; bridge and boat dock construction/maintenance; and basic clearing, grading, tree removal, and

[123] See OAR 141-014-0350; OAR 141-082-0285 and-0325; OAR 141-123-0070; see link in Appendix A-2.
[124] OAR 141-123-0050, -0070. Renewal applications may not require the same level of detail given the existing use or structure. Renewal applications are typically not circulated for comment.
[125] Defined under Portland City Code Chapter 19.04.065 as "*A line usually established by the Corps of Engineers* [USACE] *or Port of Portland to define the limit within which development may occur.*"

the installation of retaining walls. If riverbank activities include the movement of more than 10 cubic yards of soil, then an erosion, sediment, and pollution control plan will be required by BDS.

5.2.5.1 City Development Permit Process

Most proposed development on private property requires a building permit[126] through BDS.[127] The City may not have the discretion to deny a permit as described below. The following is an overview of the process:

- **Review Against Zoning Code Requirements** – The zoning code has standards and approval criteria that the project must meet for a development or zone change request. If the project meets the relevant standards and approval criteria, the City must approve the requested permit or land use review. If the project doesn't meet the relevant standards and approval criteria, the City may deny the application. There are different types of zoning code reviews. Requests for development that are allowed by right undergo a nondiscretionary administrative review process. These requests are reviewed against applicable zoning code regulations. Review decisions are made by the Director of the BDS and are final. Requests for development or zone changes that are not allowed by right undergo a land use review process.[128] These requests undergo a quasi-judicial procedure required by the zoning code. The specific land use review is stated in the base zone or other regulations. Each land use review has specified quasi-judicial procedures. Typically, in-water work goes through a Greenway Review or a River Review quasi-judicial process. Each process has different criteria, depending on the property's zoning and what is being proposed. For example, for the Greenway Review criterion that would apply for development riverward of the greenway setback, the applicant must show that the proposed development or fill riverward of the greenway setback will comply with all of the following criteria:
  - The proposal will not result in the significant loss of biological productivity in the river.
  - The riverbank will be protected from wave and wake damage.
  - The proposal will not: (1) restrict boat access to adjacent properties; (2) interfere with the commercial navigational use of the river, including transiting, turning, passing, and berthing movements; (3) interfere with fishing use of the river; (d) significantly add to recreational boating congestion; and (4) significantly interfere with beaches that are open to the public.
- **Land Use Decision Appeal by Request** – Administrative review and land use review decisions may be appealed to a review body. Depending on the type of land use decision, the land use decision appeal will be viewed by the designated City review board or the Oregon Land Use Board of Appeals. The City's decisions can be appealed to the Oregon Land Use Board of Appeals.

5.2.5.2 City Development Permits and Remedy Protection

As described in the EPA *Remedial Design Guidelines and Considerations* (EPA, 2021), within the PHSS, impacted riverbank areas are located in greenway overlay zones. Greenway overlay zoning rules require development to be set back 25 feet from the top of the bank of the Willamette River, unless the development is river-dependent or river-related.[129] The setback rules should reduce the potential for development near riverbank remedies. If development activities are proposed within the greenway zone and include areas along the riverbank, the development activities will require review by the City.

However, the City does not have the authority to deny permits based on the permit's potential to impact remedial areas. Rather, City development permits are issued based solely on whether the proposed activities

[126] There are some exceptions, generally for small work scopes.
[127] The BDS website; see link in Appendix A-2.
[128] The City's web page, Land Use Review Fees and Land Use Review Types describes the processes and lists the different land use review types and appeal process; see link in Appendix A-2.
[129] Metro Code 3.07.340.B (Title 3); see link in Appendix A-2.

comport with state and local land use planning laws. This limitation must be recognized to ensure that future landowners or tenants are bound to property use limitations that prevent development that would impact the remedy. It is the performing party's responsibility to establish an EES as part of the area-specific ICs to prevent redevelopment activities that will impact a remedy, including mechanisms if property ownership or operation is transferred to other parties. Performing parties will also need to ensure that future development meets all requirements for maintenance of ICs and engineering controls.

SECTION 6: **Area-Specific Institutional Control Plans**

Area-specific IC Plans, also referred to as Institutional Control Implementation and Assurance Plans in EPA guidance, are designed to systematically: (1) establish and document the activities associated with implementing and ensuring the long-term stewardship of ICs; and (2) specify the persons and/or entities that will be responsible for conducting the activities. The area-specific IC Plan provides details on the ICs selected and how they will be implemented, maintained, enforced, modified, and terminated (EPA, 2012b). Agreements issued for PHSS remedial design have stated that performing parties must implement and monitor each IC necessary at the remedy area, consistent with Section 14.2.6 (Institutional Controls) of the ROD and upon approval by EPA. The area-specific IC Plans will be incorporated into the IC Registry.

All area-specific IC Plans are to be prepared by performing parties in accordance with the following EPA guidance documents:

- *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites* (EPA, 2012a)
- *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Site* (EPA, 2012b)[130]

In addition to this general guidance, the sections below provide additional context and requirements for performing parties to address in their area-specific IC Plans for the PHSS. An example outline for the area-specific IC Plan is provided in Appendix E.

6.1 Area-Specific Institutional Control Plan Goals and Submittal Requirements

When preparing an area-specific IC Plan, the performing party must describe how the proposed ICs will accomplish the specific property and/or resource use restrictions, provide adequate notice of the location of the remaining contamination, protect the remedy, and minimize potential exposure to the COCs by human and ecological receptors. Each plan must also include an IC relationship matrix as described in EPA guidance (EPA, 2012b) which clarifies the ICs to be implemented, rationale for each IC, and how each IC will address contaminated media present. As described in EPA guidance (EPA, 2012a), an area-specific IC Plan will do the following:

- Describe the risks necessitating the IC
- Describe the cleanup objectives to be attained using the ICs
- Provide locations of restricted areas (legal descriptions and survey maps)[131]
- Provide locations of recorded real property interests and resource interests (e.g., easements, water rights) [132]

[130] EPA's guidance for IC planning, maintenance, and enforcement, *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites* (EPA, 2012a); see link in Appendix A-2.
[131] Agreements issued for remedial design in PHSS have included a requirement that the area-specific IC Plans include legal descriptions and survey maps that are prepared according to current American Land Title Association (ALTA) Survey guidelines and certified by a licensed surveyor.
[132] Agreements issued for remedial design in PHSS have included a requirement that the area-specific IC Plans include "*locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests.*"

- Name the entities responsible for implementing, maintaining, and enforcing the ICs
- Identify the entities responsible for the costs to administer the ICs through the life of the project
- Provide plans for maintaining and enforcing the ICs
- Describe the challenges to implementing, maintaining, and enforcing the ICs and how these challenges will be addressed and mitigated (e.g., IC redundancy or layering)
- Describe the expected life span of each IC

The area-specific IC Plan will also identify the information required for IC implementation and submittals that will be accessible on the IC Registry. A list of data requirements is included in the IMP.

6.2 Institutional Control Selection and Considerations

When preparing an area-specific IC Plan, the performing party must describe the selected ICs and how each will be implemented, maintained, and enforced, as well as the conditions under which the ICs could be terminated (if applicable). Section 4 outlines the various area-specific ICs available for the PHSS. The goal of an area-specific IC Plan is to detail an IC strategy that can supplement a remedy to achieve and maintain remedial goals for as long as necessary. EPA will review the submitted area-specific IC Plan and determine if the proposed ICs are protective to human health and the environment. EPA may require modifications to the ICs proposed.

All performing parties that implement ICs are required to participate in the IC Registry and use the Oregon 811 notification system. In evaluating the additional ICs outlined in Section 4 and designing the area-specific ICs to be implemented, the performing party should consider the following:

- The needs that the IC are intended to address
- The area to be restricted
- The type of enforcement mechanism that secures compliance
- The entity that will enforce the mechanism
- The parties that will be affected by the intended IC and how they will be affected
- Cost including planning, implementation, and long-term maintenance considerations
- The likelihood that the area will be conveyed or developed and the measures to assure that the IC will remain in place under those conditions.

In some cases, it is appropriate to layer ICs to ensure that ICs are effective in contributing to long-term protectiveness in an area (EPA, 2012a). ICs can often be more effective when layered (i.e., using different types of ICs in the same area to enhance the protectiveness of the remedy [EPA, 2012a; EPA, 2000a]). For example, if waterway restrictions are selected as an IC to protect a cap, performing parties will be required to obtain both a Coast Guard RNA and an Oregon boating regulation (see Sections 4.1.1 and 4.1.2). When performing parties evaluate the potential for an IC layer, EPA recommends that performing parties evaluate whether the layer may cause misunderstandings over accountability or be unnecessarily restrictive (e.g., preventing reuse of the remedy area). Performing parties can avoid these negative consequences by narrowly tailoring the IC selection to meet the cleanup objectives identified in the decision documents (i.e., using layering of ICs commensurate with the amount, concentrations, toxicity, and other characteristics of residual contamination) (EPA, 2012a). Layering ICs does not lessen the importance of a performing party's maintenance responsibilities (EPA, 2012a).

6.2.1 Institutional Control Registry Information Submittals

The IC Registry is a key element of the IC program for the PHSS. All performing parties must provide IC documents and geospatial data for inclusion in the IC Registry. All EPA approved documents described below will be housed on EPA's Superfund Enterprise Management System (SEMS) and linked to the IC Registry of the IMS and available for public access and review. Further information regarding data requirements is provided in the IMP.

- **Area-Specific IC Plans** –The IC Registry will provide access to EPA-approved area-specific IC Plans. These plans will include: the proposed IC locations; locations of contaminated media; current owner/occupant information; contact information for the performing party; and other information described in Section 6.1 (EPA, 2012a) and outlined in Appendix E. Subsequent area-specific IC Plan updates will also be accessible on the IC Registry.
- **IC Implementation Report** – Once the remedy is constructed and the ICs are implemented, the performing parties will prepare an IC Implementation Report. This report will include much of the information constituting the IC Registry for that specific area. The elements to be included in the IC Implementation Report are provided in Section 6.4.1.
- **IC Geospatial Data** – The geospatial data required to populate the IC Registry will be included in the IC Implementation Report. Performing parties will submit a complete GIS representation of their area-specific ICs based on their IC implementation Report. Data requirements and specifications are detailed in the IMP. Submittals must be provided in accordance with an IC GIS data submittal template that will be accessible on the IMS.
- **IC Inspection Reports** – IC Inspection Reports will be available via links on the IC Registry. The content for these reports is described in Section 6.4.2. If the report includes changes to area features (e.g., IC boundaries, upland features, sign locations), the revised geospatial data will also be provided by the performing party.
- **Updated Information** – Changes to area contact information, the Oregon 811 communications plan, the entity responsible for maintaining ICs, or transfers of business or liability should be reported within 30 days to EPA and other entities as described in the area-specific IC Plan.

6.2.2 Annual Informational Letters

At properties where the performing party does not occupy the property, is not the current owner, or has tenants with leaseholds or rights of use for IC areas, these landowners and tenants could impact ICs or seek permits or authorizations within IC areas (see Section 5.2). Annual information letters should be sent by the performing parties to notify property owners and tenants of the ICs. As described in Section 2.3.3, written notification was included by the Port as part of its IC program. Annual informational letters remind landowners or tenants of the existing IC requirements and limitations, and the activities that the requirements and limitations may impact.

The area-specific IC Plan should identify any owners and tenants effected by ICs and require that information be updated annually. If applicable owners or tenants cannot be identified or provided with an annual informational letter, this should be reported to EPA and included in the IC Inspection Report (see Section 6.4.2).

Performing parties should include a draft version of the informational letter in the area-specific IC Plan for EPA review and approval. To notify entities outside their organization, the performing parties would send these letters annually by U.S. Postal Service certified mail (return receipt required) or equivalent method and provide documentation confirming receipt as well as a copy of the letter in the IC Inspection Report. If the

property ownership or occupant changes, the new owners/tenants would be provided with the informational letter within 30 days of the day that the performing party receives the information about the change in ownership.

6.2.3 Property Signage and Buoy Management

Property signage and buoys may be necessary to notify the public, workers, and tenants of potential hazards or requirements, such as the following:

- Riverbank areas that should not be disturbed due to the presence of contamination.
- Locations of underground utilities or structures that may require future ground disturbance (e.g., for repairs and replacement) in areas of impact.
- The presence of remedy areas, such as caps, if RNAs or Oregon boating regulation buoys are not warranted.
- Compensatory mitigation sites.

EPA will coordinate the development of guidance for signage to enable consistency harbor-wide. If the performing party's IC necessitates the use of signage, the area-specific IC Plan would provide information on the signage to be installed and proposed locations. If signage is required on private property, approval by the property owner should be included in the 60% design document.

Participating parties may include visual indicators in their remedial design such as those described in Section 4.4.1. Although a part of the design process, if these informational devices are utilized, their presence should be noted in the area-specific IC Plan as well.

As described in Sections 4.1.1 and 4.1.2, performing parties are responsible for obtaining and maintaining buoys and signs required for RNA and boating regulation ICs. Information on buoy design, deployment, signage, maintenance, inspection, and replacement should be included in the area-specific IC Plan. Additional information regarding buoy requirements is provided in Appendix C.

It is the responsibility of the performing party to ensure that the RNA is present and updated on NOAA electronic and paper navigational charts, and boating regulations are on Boat Oregon online maps. In addition, performing parties are to ensure that buoys are present, in good condition, and have not dislodged. The Coast Guard and the River Patrol will not provide this service. Buoys should be inspected: (1) quarterly; and (2) in the event of an emergency or major disturbance in the vicinity of the remedy as further described in the area-specific IC Plan. Buoy inspection frequency may be reduced if the performing party can demonstrate to EPA that a reduced inspection frequency will still be protective. Contact information should be provided on each buoy in the event that the buoy becomes dislodged.

If the regulated river area experiences extensive large vessel traffic, the use of shoreline or on-structure signage, rather than buoys, may be warranted. The justification to use shoreline signage should be provided to the USACE, Coast Guard, and Marine Board for approval and included in the area-specific IC Plan. The performing party will be required to provide a brief analysis regarding the potential distances at which the signs must be legible, and how the design meets this need. The performing party will submit sign location data for inclusion in the IC Registry.

As described in Section 3, the Fish Advisory is a Harbor-wide IC that protects the public and is instrumental in protecting human health across the PHSS. If the performing party determines that Fish Advisory signage is warranted in their area, this should be included in their area-specific IC Plan. Signage language and specifications will be provided by MCHD and available on the IC Registry. The performing party will be

responsible for ongoing signage monitoring and maintenance. The performing party will include documentation regarding sign monitoring and maintenance activities in its IC Inspection Report.

6.2.4 Oregon 811 Notifications

All performing parties with ICs established to prevent the disturbance of residual contamination are required to participate in the Oregon 811 System (also known as Call Before You Dig). Oregon 811 notifies the performing party of a proposed excavation within its remedy area.[133] The performing party has two full business days following the day an excavator notifies Oregon 811 of a planned ground disturbance to mark the IC in the proposed excavation area.[134] Due to this short time frame and the importance of this IC in potentially preventing damage to the engineered remedy, the area-specific IC Plan must include an Oregon 811 communications plan to ensure that the Oregon 811 notification is handled promptly and within the two-day time frame to prevent the intrusive work. This communications plan must be included in the area--specific IC Plan and available through the IC Registry. The performing party is responsible for the following:

- Notifying the 811 One-Call System within two weeks of a change in contact information.
- Marking areas of soil or sediment impact that may be in conflict with proposed dig locations.
- Notifying EPA of potential conflicts.
- Communicating with the party that made the Oregon 811 notification.
- Determining the following if the proposed work conflicts with ICs:
  - Why the work is to be conducted
  - The entity that authorized it
  - The permits that were obtained
  - The potential modifications, education, or communication needed to prevent a recurrence

The IC Inspection Report must include a list of all Oregon 811 notifications obtained during the previous year. For Oregon 811 notifications within an IC area, the performing party must provide information regarding the planned excavation, proposed excavating party, purpose of the excavation, the outcome, and a plan to prevent a recurrence. If an excavation does occur and the remedy is breached, it should be addressed in accordance with the contingency planning each performing party is required to include in its remedy Operation and Maintenance Plan (see Section 6.5).

[133] ORS 757.552; see link in Appendix A-2.
[134] OAR 952-011-0070; see link in Appendix A-2.

6.3 Institutional Control Inspection and Maintenance Procedures

During periodic IC inspections, the performing party should critically evaluate the effectiveness of the ICs in protecting human health and the environment (EPA, 2012a). This includes examining and photographing required signage and buoys, reviewing updated property title work to confirm that proprietary controls have not been modified or terminated, and additional tasks as warranted based on the ICs and as specified in Section 8.3 of the 2012 EPA guidance (EPA, 2012a).

The goal of the inspection, maintenance, and reporting on these activities is to "*help evaluate whether IC instruments remain in place, operate in the manner envisioned during response action selection, and continue to be effective in preventing unacceptable exposure or protecting the integrity of the response action components*" (EPA, 2012a). At a minimum, the area-specific IC Plan describes the following:

- Monitoring activities and inspection schedules
- Responsibilities for performing each task
- Documentation requirements
- Processes for addressing potential IC issues that may arise
- The time frame and process for reporting IC issues to EPA and other necessary entities
- A communications plan for addressing Oregon 811 calls should they be received, as described in Section 6.2.4

6.4 Institutional Control Reporting Requirements

The following subsections describe the reporting requirements for area-specific ICs. The reporting information and frequency may be modified by EPA as needed to support Five-Year Review requirements. Performing parties will initially prepare an IC Implementation Report (Section 6.4.1) and subsequent IC Inspection Reports (Section 6.4.2). EPA will evaluate the performance of each IC and determine whether the remedy and associated ICs are protective. This determination will be included in EPA's Five-Year Review document (Section 6.4.3). If conditions change, performing parties should outline the process for modifying or terminating the area-specific ICs in the area-specific IC Plans (Section 6.4.4).

6.4.1 Institutional Control Implementation Report

Once the remedy is constructed, performing parties will prepare an IC Implementation Report. In lieu of including IC implementation in a Remedy Construction Completion Report, the IC information will be provided under separate cover for inclusion in the IC Registry. The IC Implementation Report will be provided to EPA for review and approval and submitted concurrent with the Remedy Construction Completion Report. The IC Implementation Report will describe the IC implementation activities conducted, include copies of key documents (e.g., proprietary control documents, RNA documentation), documentation of signage and buoys employed, confirmation that RNAs are included on the appropriate navigation charts, legal descriptions and survey maps certified by a licensed surveyor, locations and geospatial data of recorded real property interests (e.g., easements, liens) and resource interests, and any other elements described in the area-specific IC Plan. The geospatial data required for the IC Registry will be provided with the IC Implementation Report. Data requirements and specifications are detailed in the IMP.

Any existing ICs (e.g., previously implemented ICs as part of earlier response actions) should be included in the IC Implementation Report for inclusion in the IC Registry.

6.4.2 Institutional Control Inspection Report

EPA states that, "*ICs are generally most effective when they are maintained over time. IC maintenance activities, such as monitoring and reporting, typically help ensure that ICs are in place and functioning as intended at the site so that response actions remain protective*" (EPA, 2012a). EPA recognizes that IC monitoring is an important element in preventing unacceptable exposures and protecting the remedy (EPA, 2012a). Based on EPA guidance and the reporting required in other states and sites, the Programmatic IC Plan requires the performing parties to prepare an annual IC Inspection Report that details the IC inspection, maintenance, and compliance work completed for the reporting period for each IC identified in the area-specific IC Plan, as well as any proposed corrective actions. The annual reports will contribute to EPA's Five-Year Review. The annual report will be submitted for review and approval to EPA and to any additional entities specified in the area-specific IC Plan. The IC Inspection Reports will be housed in the EPA's SEMS and linked to the IC Registry of the IMS, and available for public access and review. The frequency of reporting may be reduced from annual submittals, with EPA approval and a demonstration that this reduction in reporting will still be protective of human health, the environment, and the remedy.

All IC Inspection Reports describing activities completed in the prior calendar year are due to EPA no later than February 28 each year. Similar to other state IC registry programs, a common date for submittal by responsible parties in the first quarter of the year will help ensure timely submittals, make tracking these reports simpler for EPA, and provide for full EPA approval and submittal to the IC Registry in the year following the reporting period. IC monitoring may be aligned with the long-term project monitoring schedule and reported under a single deliverable document to ease the administrative review and management needs. However, the IC inspection component should be segregable from the overall monitoring of the engineering controls to allow the status of ICs to be easily reported and incorporated into the IC Registry.

As part of the annual IC review process, performing parties will review the compliance and enforcement history of the ICs (e.g., "*determine whether any potential IC deficiencies have been identified and are being addressed in a timely manner*" and verify that the property use has conformed with applicable restrictions) (EPA, 2012a). If compliance and enforcement have not been effective, the performing party would provide a plan to address the issues. If area conditions change (e.g., property ownership changes or there are new property encumbrances), the annual report would also include the results of a new title search and any additional legal checks required to confirm that ICs are still in place as designed. Similar to the requirements implemented in other regions, the annual report will include a certification that ICs are in place, effective, and operating as designed in the area-specific IC Plan.

Other necessary elements of the annual IC Inspection Report include the following:

- Up-to-date contact information (e.g., for the property owner, entity responsible for IC monitoring and maintenance, etc.).
- Summary of changes in zoning or property use and/or property ownership over the prior year (for either land or in-water uses).
- Transfer of liabilities.
- If EPA approved, changes to the size and location of restricted areas along with revised legal description, geospatial data, and map (as warranted).
- Summary of IC maintenance activities performed (e.g., signage and buoy inspection records).
- Details regarding non-routine inspections and their purpose.
- Description of IC incidents and/or deficiencies identified during the year for all remedy areas tracked by the performing party, including documentation of the incidents or deficiencies identified, how and when the deficiency was corrected, and any enforcement actions taken.

- Information on using the Oregon 811 notification system, including updates to the Oregon 811 communications plan (as warranted), Oregon 811 calls received, how calls were addressed, whether the proposed ground disturbance occurred, and the plan and/or actions taken to strengthen the ICs.
- Activities or actions that occurred during the reporting period with the potential to compromise the integrity of the remedial action (e.g., a rupture to the cap, any ground disturbance of contaminated sediments or riverbank soil).
- Copies of annual informational letters to landowners and/or tenants (if different from the performing party) regarding the existence of the ICs and their provisions, and an accounting of all tenants and/or owners that could not be identified or notified.
- If changes to ICs are recommended, a schedule for submittal of a revised area-specific IC Plan to EPA for review and approval.

Information provided in the IC Inspection Report will be used to update the IC Registry. During the development of the IC Registry, the IMS Administrator will develop a geospatial data submittal procedure and templates that stipulate the data submittal requirements. The submittal procedure specifications and templates will be available to performing parties on the IC Registry.

6.4.3 U.S. Environmental Protection Agency Five-Year Reviews

When ICs are operating as designed and protecting human health and the environment (as described in EPA decision documents) they are considered effective. Utilizing an adaptive management approach, as part of the EPA Five-Year Review process, EPA will conduct a comprehensive review of the remedy in each sediment management area and riverbank, including an evaluation of the effectiveness of the ICs. The purpose of the Five-Year Review is to evaluate the performance of each IC and determine whether the remedy and associated ICs are protective of human health, the environment, and the remedy. As stated in the ROD (EPA, 2017), Five-Year Reviews are expected to be required as long as contamination is left in place at the remedy area.

The collection of additional cleanup data (as warranted) and the IC monitoring and maintenance records included in the annual IC Inspection Reports will be an integral part of this evaluation. Elements to be considered as part of this evaluation are outlined in the EPA guidance developed in 2011 (EPA, 2011). EPA may require that the performing party make changes or modifications to an IC if it is determined that the IC is not protective in the short or long term. In addition, EPA may modify reporting requirements and frequency as needed to support the Five-Year Review process.

6.4.4 Termination or Modifications to Area-Specific Institutional Controls

As described in Section 2.2.4, termination of area-specific ICs in most portions of the PHSS is not anticipated. The remedy provided in the ROD allows for contaminated sediments and soil to be left in place in both in-water areas and along riverbanks. Therefore, some ICs will likely be required in perpetuity.

If conditions change significantly over time, it may be necessary to modify the ICs through a decision document consistent with EPA guidance (EPA, 2012a). If changes to ICs are warranted based on area-specific conditions (e.g., removal of an RNA or deed notice), EPA may evaluate these potential changes as part of the EPA Five-Year Review process. If EPA concurs that the IC needs to be modified, it will determine the regulatory procedure and decision documents required based on the area-specific conditions.

The area-specific IC Plan should include information related to modifications and termination for each IC instrument, such as the following (EPA, 2012a):

- Entity responsible for deciding whether modification may occur

- Entity responsible for deciding whether termination may occur
- Modification process
- Conditions for termination
- Termination process

If the approved area-specific IC Plan does not address the proposed changes, EPA may require an amended area-specific IC Plan that describes: the ICs to be terminated; proposed IC layering; and how the remaining ICs will be protective of human health, the environment, and the remedy. Termination procedures for the specific ICs for use at the PHSS are described in Section 4.

6.5 Remedy Operation and Maintenance Plans

EPA guidance (EPA, 2012a) states that area-specific IC Plans include a discussion on topics such as financial assurance for ICs and emergency action and repair. For the PHSS, these topics will be addressed in the area-specific remedy Operation and Maintenance Plans. The area-specific IC Plans should be comprehensive, but the following items may instead be addressed in the remedy Operation and Maintenance Plan:

- **Financial Assurance** –Financial assurance cost estimates must include tasks such as IC monitoring and annual reporting. Financial assurance for IC project costs must be provided to EPA as part of the overall remedy. The area-specific IC Plan should identify the specific legal entity of the performing party that is responsible for costs to implement the ICs and address requirements should ICs fail. Changes to this entity must be reported to EPA, updated in the IC Registry, and included in the IC Inspection Report.
- **Emergency Action and Repair** – Most ICs are not subject to emergency action, which is more closely associated with engineered structures. Addressing emergency issues, however, should be detailed in the Operation and Maintenance Plan. Performing parties should also address how RNA violations and/or vessel damage to the remedy will be managed in the Operation and Maintenance Plan.
- **Reopeners for Cleanup** – As part of the remedial design, performing parties will evaluate the potential actions required if a flood, earthquake, destruction by outside forces, or other destructive event were to occur. If modifications to ICs are necessary as a result of such an event, they should be addressed as part of the remedy repair.

SECTION 7: **Information Management System and Institutional Control Registry**

Due to the complex nature of the PHSS, development and maintenance of an IC Registry is required to ensure that human health, the environment, and the remedy are protected. This section describes the objectives of the IC Registry, data requirements, and recommendations for increased effectiveness. Performing parties implementing ICs at all stages of the cleanup must provide all required information for the establishment and maintenance of the IMS and IC Registry. Deliverables submitted to and approved by EPA will be housed in Special Collections on EPA's SEMS and will be directly accessible with a link to the IC Registry and IMS.

7.1 Description and Objectives

The PHSS IMS will include PHSS cleanup data and an IC Registry available online in an online format accessible to performing parties, permitting agencies, and the public. The IMS will be developed based on the requirements and specifications in the PHSS IMP, which was issued on March 18, 2022 (GeoEngineers, 2022). The IC Registry portion of the IMS is relevant to this Programmatic IC Plan, as it will provide access to PHSS IC information.

EPA describes registries as follows (EPA, 2012b):

> "*Registries can include database listings, web-based maps, document-based inventories, or all of these. Registries are sometimes established under state law registry acts and may impose other requirements, such as: annual reporting to the state legislature summarizing the status of sites on the registry; recording a notice in the local land records that the property is contaminated; or disclosing to potential purchasers that the property is on the registry. Some registry acts also require state approval of any substantial change in the use of the property*."

EPA notes that a potential limitation of an IC Registry is that the procedures for listing and removing sites and the information provided about sites is often discretionary (EPA, 2012a).

The PHSS consists of remedial design project areas currently being addressed by different performing parties. During remediation, numerous performing parties may implement and maintain ICs and collect IC information. These parties may collect and manage IC information in different ways. A key step to establishing consistency in the IC Registry is to standardize the reporting and digital format for IC information.

As stated in the IMP, the key objectives of the IMS that houses the IC Registry are as follows (GeoEngineers, 2022):

- Provide transparent Harbor-wide information for public agencies, performing parties, and the public.
- Maintain information to facilitate long-term comparability and effectiveness in evaluating progress on the cleanup and consistent public information during the cleanup.
- Serve as a centralized access point for area-specific IC information for all types of ICs, including proprietary controls, government controls, enforcement tools, and informational devices.

The PHSS IMS will include the IC Registry as the centralized online access point for PHSS IC information. The IC Registry will include geospatial data regarding ICs. Other EPA approved IC Registry documents will be linked on the IMS via EPA's SEMS and may include IC inspection and maintenance data, Fish Advisory documents, and information related to Fish Advisory Education and Outreach Program activities. The benefits of the IC Registry include increased coordination among public agencies, data comparability for future evaluations of remedy effectiveness, and facilitating information transfer between the various stakeholders, including performing parties.

7.2 Data Requirements and Training

Various sections of this Programmatic IC Plan identify the IC data and information to be provided by performing parties for each remedial area. The IC Registry will include an IC data submittal template to inform performing parties on submittal procedures for data and IC information. The IC Registry will be regularly updated in accordance with a schedule to be approved by EPA. Further detail is provided in the PHSS IMP (GeoEngineers, 2022).

Stakeholders may not be familiar with how to access information on the IC Registry and may need additional training. To address stakeholder needs, the IMP outlines training materials to be developed (Section 13 of the IMP) (GeoEngineers, 2022). The training will address the needs of agency personnel, performing parties, Tribal Governments, and the public.

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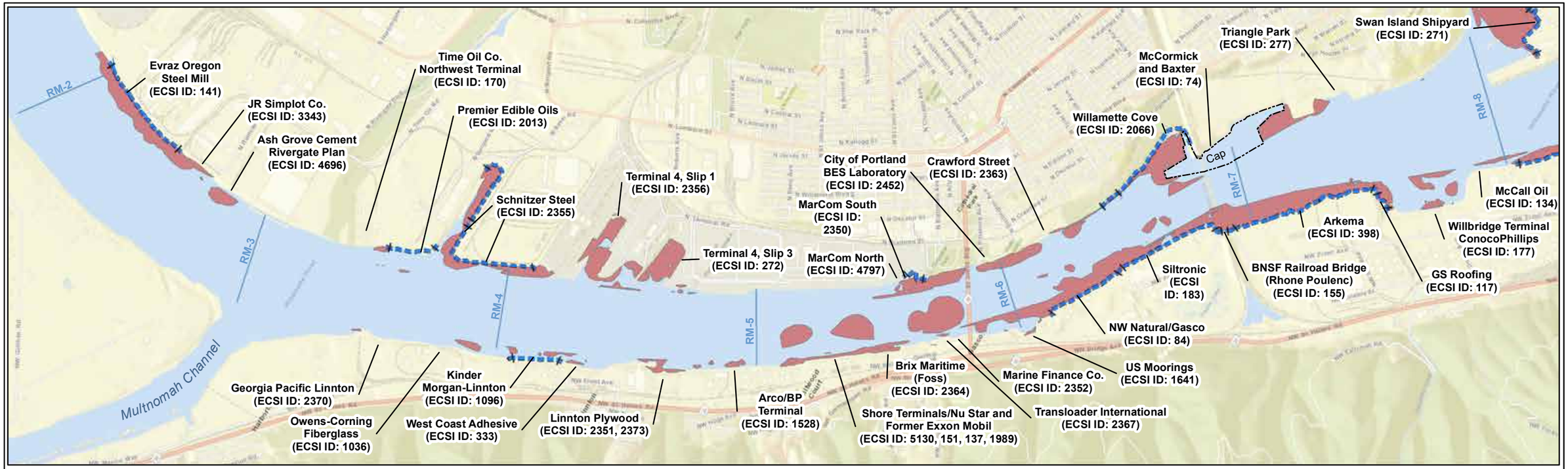

NOTES

1 - Contaminated river banks were designated in the ROD Section 6.6.6, and on Figure 9 and Figure 30. Post-ROD data may be used to refine riverbank contamination.

2 - ROD SMA delineations may change after post-ROD data are evaluated.

ECSI - Environmental Cleanup Site Information
ID - Identification
ROD - Record of Decision, Portland Harbor Superfund Site (EPA, 2017)
SMA - sediment management area

LEGEND

Properties with known contaminated riverbanks[1]

SMA[2]

Date: June 16, 2021
Data Sources: City of Portland, ESRI,
U.S. Environmental Protection Agency Region 10
Map from the EPA Remedial Design Guidance (EPA, 2021)

FIGURE 1
Portland Harbor Superfund Site Riverbanks and Sediment Management Areas

Portland Harbor Site Programmatic Institutional Control Plan

0 2,000 4,000
Feet

GSI Water Solutions, Inc.

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PLANNING

- EPA and ODEQ provided OHA with fish tissue data from 2002 and 2003. EPA and ODEQ conducted oversight of fish and shellfish tissue data collection in 2005, 2007, and 2009. Additional data on smallmouth bass were collected in 2011 and 2012. Results reported in:
  - Portland Harbor RI/FS Remedial Investigation Report, Final (EPA, 2016)
  - Baseline Human Health Risk Assessment (Appendix F of the Final Remedial Investigation Report; Kennedy/Jenks, 2013)
  - Baseline Smallmouth Bass Tissue Study Field Sampling Report and Portland Harbor Fish Data Final Report (GSI, 2012)
- EPA issued the final ROD in 2017 that stated that fish advisories would be part of remedy.
- City, ODSL, Port of Portland, and MCHD entered into an intergovernmental agreement in 2017 for MCHD to conduct an Education and Outreach Program.

STAGE COMPLETED

IMPLEMENTATION

- OHA issued the Lower Willamette Fish Advisory in 2004 and updated the Fish Advisory in 2018.
- MCHD implemented Education and Outreach program with funding to continue program to 2023

STAGE COMPLETED

MAINTENANCE

- MCHD conducts the ongoing, long-term Education and Outreach Program per the work plan.
- MCHD documents efforts in annual reports. Effectiveness of the program is evaluated by EPA.
- Community and other stakeholders are informed on the status of the Education and Outreach Program via the IC Registry in the IMS and direct engagement with MCHD.
- MCHD updates Education and Outreach Program based on community input, self evaluations, and EPA's effectiveness review.
- EPA anticipates that MCHD will install and maintain advisory signs at public access locations.

CURRENT STAGE

MODIFICATION OR TERMINATION

- OHA, in cooperation with the Agency for Toxic Substances and Disease Registry, uses long-term monitoring data from EPA to determine whether modification or termination of the Fish Advisory is needed to ensure the IC is meeting remedial action goals (see ROD).
  - If modified, MCHD notifies the public and the IC returns to the maintenance stage.
  - Once sediment cleanup levels are met at appropriate spatial scales, the responsibility for this program may revert to OHA.

END POINT

PUBLIC OUTREACH ACTIVITIES (AS NEEDED)

TRIBAL GOVERNMENT CONSULTATION (AS NEEDED)

NOTES

1. End Point: While the PHSS-related Fish Advisory will someday be terminated, it is unlikely that consumption of unlimited fish meals will be without elevated risk due to anthropogenic background concentrations of PCBs. The ROD Table 22 indicates that upon achievement of RAO 2, it will be considered safe to consume up to 16 adult meals per month of resident fish.

ABBREVIATIONS AND ACRONYMS

CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
City:	City of Portland
EPA:	U.S. Environmental Protection Agency
IC:	Institutional Control
MCHD:	Multnomah County Health Department
ODEQ:	Oregon Department of Environmental Quality
OHA:	Oregon Health Authority
ODSL:	Oregon Department of State Lands
RAO:	remedial action objective
ROD:	Record of Decision, Portland Harbor Superfund Site (EPA, 2017)

FIGURE 2

Lower Willamette River Fish Advisory Education and Outreach IC Flow Chart

Portland Harbor Site Programmatic Institutional Control Plan

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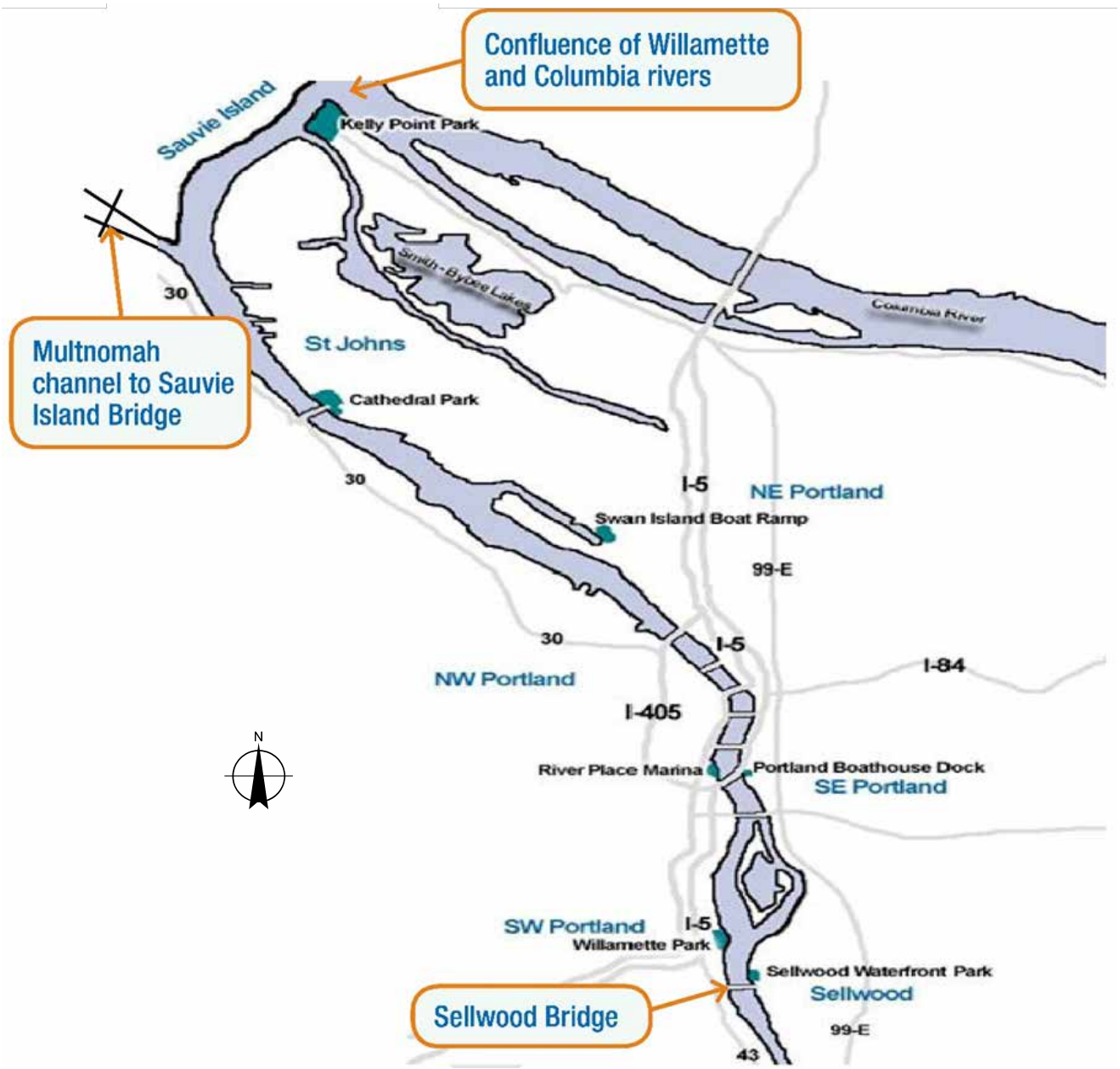

FIGURE 3

Lower Willamette River Fish Advisory Boundaries

Portland Harbor Site Programmatic Institutional Control Plan

Date: August 6, 2021
Data Sources: Oregon Health Authority Lower Willamette Fish Advisory Fact Sheet (OHA, 2018a)

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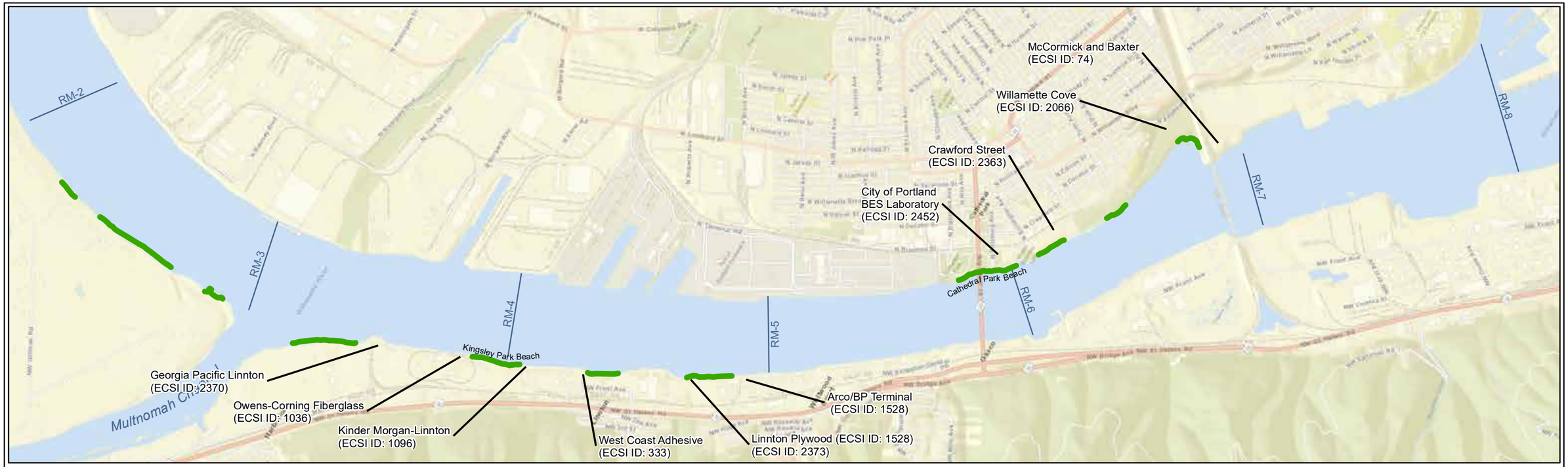

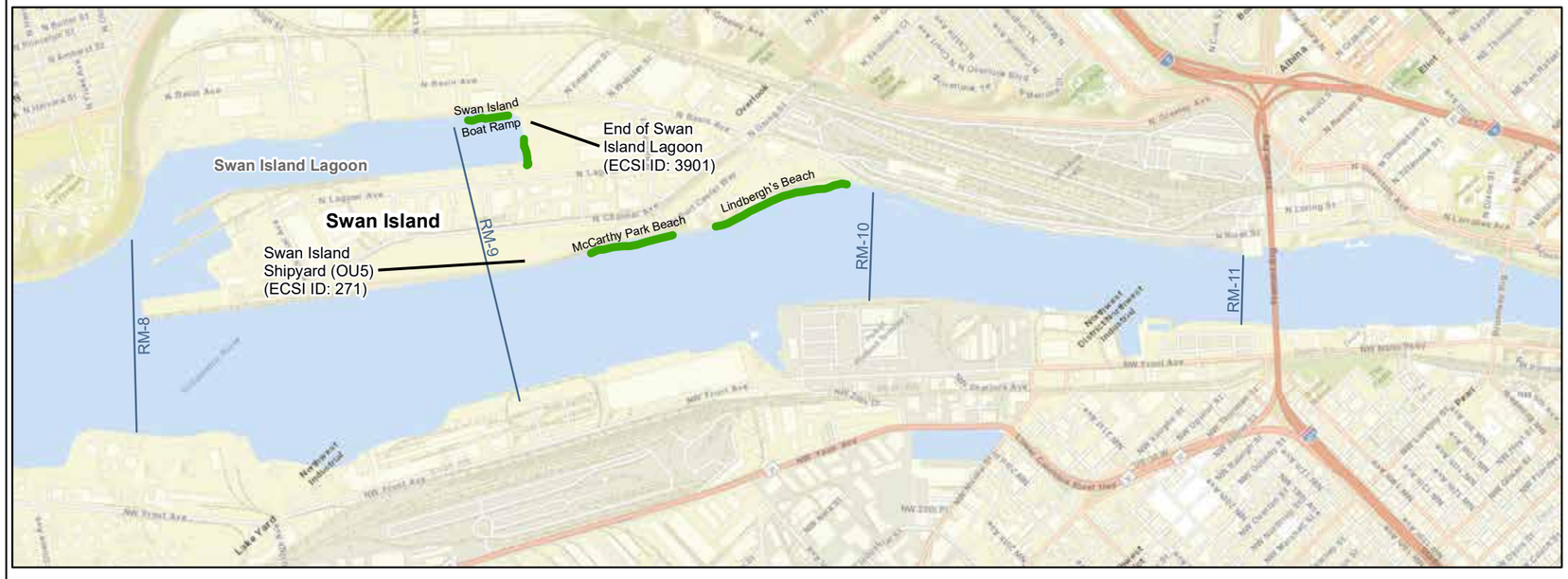

NOTES

1 – Known recreational beach locations are taken from the baseline human health risk assessment (EPA 2016a).

Source: Portland Harbor RI/FS, Remedial Investigation Report, Final. Prepared by U.S. Environmental Protection Agency (EPA), February 8, 2016. (EPA, 2016)

LEGEND

Locations of Known Recreational Beaches

Date: June 16, 2021
Data Sources: City of Portland, ESRI,
U.S. Environmental Protection Agency Region 10
Map from the EPA Remedial Design Guidance (EPA, 2021)

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FIGURE 4

Portland Harbor Superfund Site
Recreational Beaches

Portland Harbor Site Programmatic Institutional Control Plan

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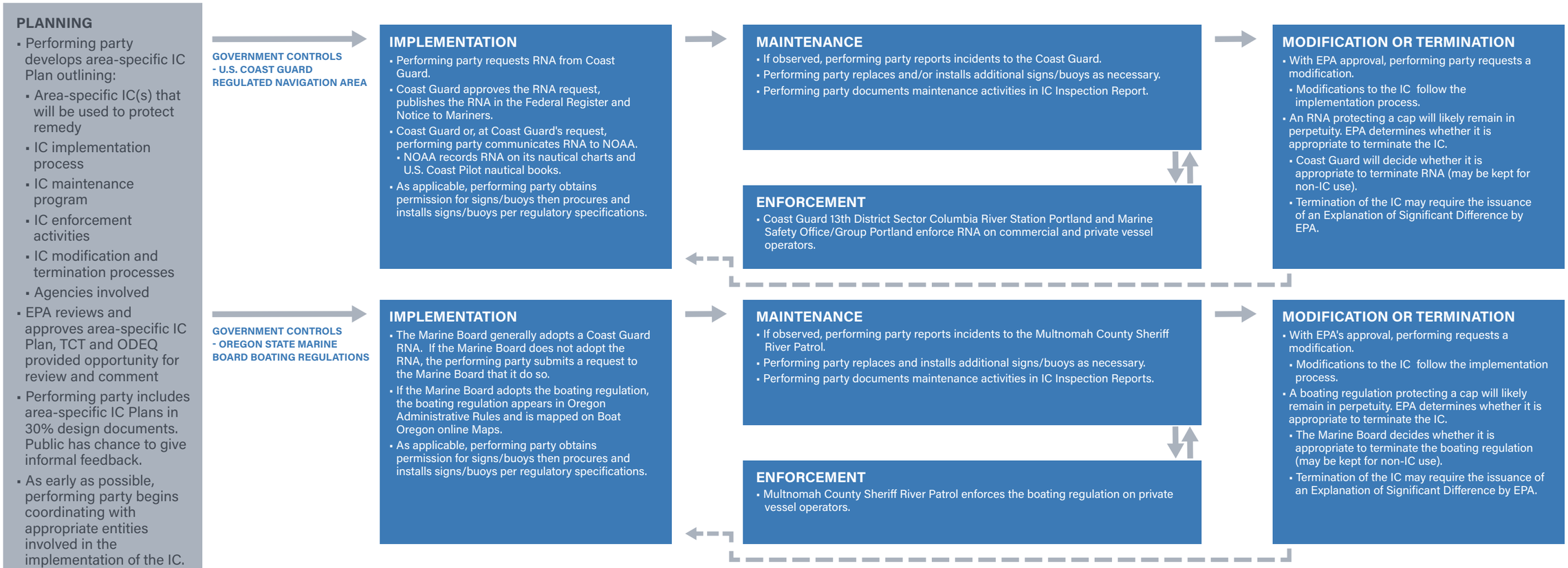

NOTES

1. This figure is a visual summary of information from Section 4 of the PICIAP report. Refer to the report text for specifics and details. Project Area ICs that are relatively less complex (e.g., USACE Waterway Use Restriction, Oregon 811) are described in the text but not included in this figure. Proprietary controls are not shown as they have not yet been developed.
2. Waterway use restrictions and land use/access restrictions are required in remedial design and as remedial action, as outlined in the Record of Decision.
3. End point: An IC will be terminated only if the IC is no longer necessary to protect human health and the environment or a different control is implemented in its place.

ABBREVIATIONS AND ACRONYMS

EPA:	Environmental Protection Agency
IC:	Institutional controls
IC Plan:	Institutional Control Implementation and Assurance Plan
ODEQ:	Oregon Department of Environmental Quality Marine Board: Oregon State Marine Board
NOAA:	National Oceanic and Atmospheric Administration
RNA:	Regulated navigation area
TCT:	Technical Coordination Team
Coast Guard:	U.S. Coast Guard

FIGURE 5

Project Area-Specific ICs Flow Chart

Portland Harbor Site Programmatic Institutional Control Plan

GSI Water Solutions, Inc.

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Appendices

APPENDIX A-1

Additional Institutional Control Data, Contact Information, and Reference Material

Appendix A-1. Additional Institutional Control Data, Contact Information, and Reference Material

Institutional Controls Contact List

As a resource to performing parties and/or property owners, below please find the contact information for agencies/entities involved in the planning, implementation, maintenance, enforcement, and/or modification of ICs. Contacts are organized by the ICs to which they apply.

Fish Advisory

Oregon Health Authority (OHA) Webpage on the Lower Willamette Fish Advisory *Fish Advisory meal recommendations and updates*	Website: www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Pages/Lower-Willamette-Fish-Advisory.aspx
Multnomah County Health Department *Updates on current education and outreach efforts for the Fish Advisory*	Website: www.multco.us/health/staying-healthy/eating-fish-river Phone: 503-988-3676 Email: hd.directorsoffice@multco.us

U.S. Coast Guard Regulated Navigation Areas (RNAs)

District Commander of United States Coast Guard (USCG) 13th District *Coordinate the implementation of an RNA*	Phone: 800-982-8813 Website: www.pacificarea.uscg.mil/Our-Organization/District-13/
United States Coast Guard (USCG) 13th District Local Notices to Mariners Webpage *Announcements for newly implemented RNAs*	Website: www.navcen.uscg.gov/?pageName=lnmDistrict&region=13
National Oceanic and Atmospheric Administration (NOAA) Nautical Chart Interactive Catalog *Maps of active RNAs*	Website: www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
National Oceanic and Atmospheric Administration (NOAA) United States Coast Pilot Books *Descriptions of active RNAs*	Website: nauticalcharts.noaa.gov/publications/coast-pilot/index.html
National Oceanic and Atmospheric Administration (NOAA) ASSIST application *Report an error in NOAA records, e.g., RNA missing from nautical chart*	Website: www.nauticalcharts.noaa.gov/customer-service/assist/index.html Phone: 1-888-990-6622
United States Coast Guard (USCG) Station Portland *Report vessel not following an RNA*	Phone: 503-240-9365

Oregon State Marine Board Boating Regulations

Oregon State Marine Board *Submit request for a Boating Regulation*	Email: marine.board@oregon.gov Mail: Oregon State Marine Board P.O. Box 14145, Salem, OR 97309
Multnomah County Sheriff River Patrol *Report private vessels not following Boating Regulations*	Phone: 503-988-6788
Oregon Administrative Rules Database *See descriptions of active Boating Regulations*	Website: secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=763
Boat Oregon Maps and GIS *Maps of active Boating Regulations*	Website: boatoregon-geo.hub.arcgis.com/

Buoys and Signs

United States Coast Guard (USCG) 13th District Private Aids to Navigation (PATON) Manager *Find out information about buoys and/or signs and report discrepancies*	Phone: 206-220-7285 Email: D13-SMB-D13-PATON@uscg.mil
Multnomah County Sheriff River Patrol *Report un-anchored buoys and damaged/missing signs or buoys*	Phone: 503-988-6788

Oregon One-Call System (811)

Oregon Utility Notification Center (Notification Center) Contact *[For performing parties] Submit location(s) of cap and/or remedial area*	Phone: 877-668-4001 Email: ordatabase@occinc.com Online mapping application: http://www.callbeforeyoudig.org/oregon/download-archive.asp
Oregon Utility Notification Center (Notification Center) Locate Request *[For Excavators] Submit a locate prior to excavating*	Phone: 811 or 800-332-2344 Website: digsafelyoregon.com/resources/locate-requests/ Online mapping application: http://www.callbeforeyoudig.org/oregon/download-archive.asp
Oregon Utility Notification Center (Notification Center) Request for Administrative Action *Report a probable violation to Oregon Excavation Laws*	Phone: 877-668-4001

Enforcement Tools

EPA Region 10 Office *Get questions on enforcement tools answered*	Phone: 206-553-1200 or 1-800-424-4372 Email: epa-seattle@epa.gov Website: https://www.epa.gov/aboutepa/forms/contact-epas-region-10-office-seattle Mail: U.S. EPA, Region 10 1200 Sixth Avenue, Suite 155 Seattle, WA 98101

Proprietary Controls for State-Owned Submerged and Submersible Lands

Oregon Department of State Lands (ODSL) Contact Information *[For performing parties] Contact ODSL to begin proprietary control coordination*	Phone: 503-986-5200 Website: www.oregon.gov/DSL/Pages/Comment.aspx

Deed Notices

Multnomah County Division of Assessment, Recording, and Taxation *Submit a deed notice*	Mail: Multnomah County Recorder P.O. Box 5007 Portland, OR 97208-5007 In person: 501 SE Hawthorne Blvd #175 Portland OR 97214
Multnomah County Recording and Customer Service *Check records for deed notices and contact if deed notice record is missing*	Phone: 503-988-3326 option 4 Email: dartcs@multco.us

Permitting and Agency Coordination

Portland Sediment Evaluation Team (PSET) *Request sediment quality data near a planned project (if any) and technical reports*	Phone: 503-808-4963 Email: PSET.Lead@usace.army.mil
US Army Corps of Engineers (USACE) Regulatory (Front desk)	503-808-4373

Resources for Understanding Institutional Controls

To increase understanding of ICs and IC related responsibilities, below are a list of IC information resources.

- Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, December 2012
  EPA guidance that identifies and addresses many of the common issues when using ICs pursuant to cleanup programs. It also provides an overview of the EPA's policy regarding the roles and responsibilities of stakeholders involved in various aspects of the IC life cycle, namely the planning, implementing, maintaining, and enforcing of ICs.

- Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites, December 2012
  EPA guidance that provides a template for developing area-specific IC Plans. An area-specific IC Plan is a document designed to systematically (1) establish and document the activities associated with implementing and ensuring the long-term stewardship of ICs and (2) specify the persons and/or entities that will be responsible for conducting these activities.

- Recommended Evaluation of Institutional Controls: Supplement to the Comprehensive Five-Year Review Guidance, September 2011
  EPA guidance that provides recommendations for conducting Five-Year reviews for the IC component of remedies in a manner similar to the review of engineering or other remedy components.

- Institutional Controls: A Citizen's Guide to Understanding Institutional Controls at Superfund, Brownfields, Federal Facilities, Underground Storage Tank, and Resource Conservation and Recovery Act Cleanups, February 2005
  EPA guidance that provides community members with general information about the role of ICs in EPA cleanups. This guide discusses the community's role in providing input for the selection of ICs and helping to monitor ICs to ensure that human health and the environment remain protected in the future.

- Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls Memorandum, April 2004
  EPA document that provides information on designating third-party beneficiaries in proprietary institutional controls to ensure more effective controls by affording an additional means of enforcement.

- Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups, September 2000
  EPA guidance that provides an overview of the types of institutional controls that are commonly available, including their relative strengths and weaknesses and discusses the key factors to consider when evaluating and selecting ICs in Superfund and RCRA Corrective Action cleanups.

- ITRC Long-Term Contaminant Management Using Institutional Controls Fact Sheet, January 2016
  Interstate Technology Regulatory Council (ITRC) fact sheet provides a brief overview on institutional controls that provide protection from exposure to contaminants on a site.

- ITRC Long-Term Contaminant Management Using Institutional Controls Website
  Interstate Technology Regulatory Council (ITRC) website on institutional controls assists those who are responsible for stewardship of institutional controls by describing critical elements and best practices for an institutional control management program. Much of this guidance is based on the successes and lessons learned from established state and federal agency programs.

APPENDIX A-2

Links to Laws, Rules, Codes, and Guidance in the Programmatic Institutional Control Implementation and Assurance Plan Footnotes

Appendix A-2. Links to Laws, Rules, Codes, and Guidance in the Programmatic Institutional Control Implementation and Assurance Plan Footnotes

Section	Footnote Number(s)	Law, Rule, Code, or Guidance		Website Link
		Number/Organization	Title	
ES	2	U.S. Environmental Protection Agency, CERCLA Docket No. 10-2019-0151	Administrative Settlement Agreement and Order on Consent for Remedial Design of Site-wide Institutional Controls Implementation and Assurance Plan and Information Management Plan	https://semspub.epa.gov/work/10/1566107.pdf
ES	4	Title 33 USC § 1341	Certification	https://www.govinfo.gov/app/details/USCODE-2000-title33/USCODE-2000-title33-chap26-subchapIV-sec1341
ES	4	Title 33 USC § 1344	Permits for dredged or fill material	https://www.govinfo.gov/app/details/USCODE-2011-title33/USCODE-2011-title33-chap26-subchapIV-sec1344
ES	6	Title 33 USC § 401	Construction of bridges, causeways, dams or dikes generally; exemptions	https://www.govinfo.gov/app/details/USCODE-2004-title33/USCODE-2004-title33-chap9-subchapI-sec401
ES	6	Title 33 USC § 403	Obstruction of navigable waters generally; wharves; piers, etc.; excavations and filling in	https://www.govinfo.gov/app/details/USCODE-2020-title33/USCODE-2020-title33-chap9-subchapI-sec403
1	7	U.S. Environmental Protection Agency, CERCLA Docket No. 10-2019-0151	Administrative Settlement Agreement and Order on Consent for Remedial Design of Site-wide Institutional Controls Implementation and Assurance Plan and Information Management Plan	https://semspub.epa.gov/work/10/1566107.pdf
2.3.1	23	USCG Docket No. USCG-2008-0121	“McCormick & Baxter” Regulated Navigation Area, Willamette River, Portland, OR	https://www.federalregister.gov/documents/2009/02/04/E9-2308/mccormick-and-baxter-regulated-navigation-area-willamette-river-portland-or
2.3.2	24	USCG Docket No. USCG-2008-0112	“Gasco” Regulated Navigation Area, Willamette River, Portland, OR	https://www.federalregister.gov/documents/2009/02/04/E9-2310/gasco-regulated-navigation-area-willamette-river-portland-or

Section	Footnote Number(s)	Law, Rule, Code, or Guidance		Website Link
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2.3.3	25	USCG Docket No. USCG-2009-0370	Regulated Navigation Areas; Port of Portland Terminal 4, Willamette River, Portland, OR	https://www.federalregister.gov/documents/2009/12/30/E9-30935/regulated-navigation-areas-port-of-portland-terminal-4-willamette-river-portland-or
3.1	27	Oregon Health Authority	*Updated Fish Advisory for Resident Fish and Shellfish, Lower Willamette River*	https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Documents/LowerWillametteFishAdvisoryTechnicalReport.pdf
3.1	27	ORS 431.110	General powers and duties of Oregon Health Authority	https://oregon.public.law/statutes/ors_431.110
3.1	28	Oregon Health Authority	*Updated Fish Advisory for Resident Fish and Shellfish, Lower Willamette River*	https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Documents/LowerWillametteFishAdvisoryTechnicalReport.pdf
3.1	29	42 U.S.C. 9604(i)(6)	Response authorities	https://www.govinfo.gov/app/details/USCODE-2010-title42/USCODE-2010-title42-chap103-subchapI-sec9604
3.1	29	42 CFR Part 90	Administrative Functions, Practices, and Procedures	https://www.ecfr.gov/cgi-bin/text-idx?node=pt42.1.90&rgn=div5
3.1	31	U.S. Environmental Protection Agency	*Portland Harbor Superfund Site Community Involvement Plan (CIP)*	https://semspub.epa.gov/work/10/100261772.pdf
3.1.1.1	32	U.S. Environmental Protection Agency	*Portland Harbor RI/FS Remedial Investigation Report, Final*	https://semspub.epa.gov/work/10/100002995.pdf
3.1.1.1	33	U.S. Environmental Protection Agency	*Portland Harbor RI/FS Final Remedial Investigation Report*, Appendix F. Baseline Human Health Risk Assessment, Final	https://semspub.epa.gov/work/10/100017312.pdf
3.1.1.1	34	Portland Harbor Environmental Data Portal	*Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study, Field Sampling Report* and *Portland Harbor Sample Receipt, Analysis, and Results Report*	http://ph-public-data.com/document/GSI_2012/

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3.1.4.1	37	Oregon Health Authority	*Fish Consumption Advisory Standard Operating Guidance (SOG) Oregon Health Authority (OHA) Fish Advisory Program*	https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/RECREATION/FISHCONSUMPTION/Documents/Fish-Consumption-Advisory-SOG.pdf
4.1.1	39	33 CFR Part 165	Regulation Navigation Areas and Limited Access Areas	https://www.ecfr.gov/current/title-33/chapter-I/subchapter-P/part-165
4.1.1.2	41	33 CFR § 3.65-1	Thirteenth Coast Guard District	https://ecfr.federalregister.gov/current/title-33/chapter-I/subchapter-A/part-3#3.65-1
4.1.1.2	42	National Oceanic and Atmospheric Administration	Office of Coast Survey Electronic Charts	https://nauticalcharts.noaa.gov/publications/coast-pilot/index.html
4.1.1.2	43	National Oceanic and Atmospheric Administration	United States Coast Pilot Nautical Book	https://nauticalcharts.noaa.gov/publications/coast-pilot/index.html
4.1.1.4	44	33 CFR § 165.13	Regulation Navigation Areas and Limited Access Areas	https://www.ecfr.gov/cgi-bin/text-idx?node=pt33.2.165&rgn=div5
4.1.2	45	ORS Title 61, Chapter 830 (830.110)	Small Watercraft Powers and duties of board	https://oregon.public.law/statutes/ors_chapter_830
4.1.2	46	ORS 830.175 (1)	Regulations for Specific Areas	https://oregon.public.law/statutes/ors_830.175
4.1.2	47, 48	ORS 830.175 (4)	Regulations for Specific Areas	https://oregon.public.law/statutes/ors_830.175
4.1.2	49	ORS 830.015	Application of ORS 830.005, 830.015 to 830.050, 830.175, 830.210 to 830.420 and 830.475 to 830.490	https://oregon.public.law/statutes/ors_830.015
4.1.2.1	50, 51, 52	OAR 137-001-0070, OAR 137-001-0070 (1)	Petition to Promulgate, Amend, or Repeal Rule	https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=9849
4.1.2.2	53	ORS 830.110	Powers and duties of board	https://oregon.public.law/statutes/ors_830.110
4.1.2.2	54	Oregon Secretary of State	Oregon Administrative Rules Database	https://secure.sos.state.or.us/oard/processLogin.action
4.1.2.2	55	Oregon State Marine Board	Boat Oregon Online Maps	https://boatoregon-geo.hub.arcgis.com/

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4.1.2.2	56	OAR 250-010-0201	Oregon State Marine Board	https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=31243
4.1.2.2	57	33 CFR Part 62 Subpart B	U.S. Aids to Navigation System	https://www.ecfr.gov/current/title-33/chapter-I/subchapter-C/part-62/subpart-B
4.1.2.4	58	ORS 190.110	Authority of units of local government and state agencies to cooperate	https://oregon.public.law/statutes/ors_190.110
4.1.2.4	58	ORS 830.110	Powers and duties of board; rules	https://oregon.public.law/statutes/ors_830.110
4.1.2.4	59	ORS 830.175 (4)	Regulations for Specific Areas	https://oregon.public.law/statutes/ors_830.175
4.1.2.5	60, 61, 62, 63	OAR 137-001-0070, OAR 137-001-0070 (1)(a), and OAR 137-001-0070 (2)	Petition to Promulgate, Amend, or Repeal Rule	https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=9849
4.1.3	64	OAR 952-001-0010	Definitions	https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=252829v
4.1.3	65	ORS 757.557	Underground utility facility operators required to subscribe to center	https://oregon.public.law/statutes/ors_757.557
4.1.3	66	OAR 952-001-0070	Oregon Utility Notification Center	https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=252832
4.1.3	67	OAR 952-001-0050	Excavator to Give Notice of Proposed Work; Exemption	https://oregon.public.law/rules/oar_952-001-0050
4.1.3.1	68	Call Before You Dig	*Submitting Digital Mapping Files: Guidelines*	http://www.callbeforeyoudig.org/oregon/downloads/Digital%20File%20Submitting%20Guidelines.pdf
4.1.3.3	70	ORS 757.557	Underground utility facility operators required to subscribe to center	https://oregon.public.law/statutes/ors_757.557
4.1.3.3	71	OAR 952-001-0070	Oregon Utility Notification Center	https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=252832
4.2	72	ORS 274.005 (7) and (8)	Definitions	https://oregon.public.law/statutes/ors_274.005
5.1.1	73	33 USC § 413	Duty of United States attorneys and other Federal officers in enforcement of provisions; arrest of offenders	https://www.govinfo.gov/app/details/USCODE-2011-title33/USCODE-2011-title33-chap9-subchapI-sec413

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5.1.2	74	33 USC §§ 1251–1387, § 1344	Navigation and Navigable Waters, Water Pollution Prevention and Control	https://www.govinfo.gov/content/pkg/USCODE-2011-title33/pdf/USCODE-2011-title33-chap26.pdf
5.1.2	75	40 CFR §§ 230.1–230.98	Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material	https://www.epa.gov/sites/default/files/2015-03/documents/cwa_section404b1_guidelines_40cfr230_july2010.pdf
5.1.2	75	33 CFR Parts 320–332	General Regulatory Policies	https://www.ecfr.gov/current/title-33/chapter-II/part-320
5.1.2	76	50 CFR Part 402	Interagency Cooperation – Endangered Species Act of 1973, as Amended	https://www.govinfo.gov/app/details/CFR-2002-title50-vol3/CFR-2002-title50-vol3-part402
5.1.2.1	77	33 USC 403; Chapter 425, 30 Statute 1151	Rivers and Harbors Appropriation Act of 1899	https://www.epa.gov/cwa-404/section-10-rivers-and-harbors-appropriation-act-1899
5.1.2.1	78	40 CFR § 230.10(b)	Restrictions on discharge	https://www.govinfo.gov/app/details/CFR-2012-title40-vol26/CFR-2012-title40-vol26-sec230-10
5.1.2.2	79	OAR Chapter 340, Division 41	Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1458
5.1.2.2	79	OAR Chapter 340, Division 48	Certification of Compliance with Water Quality Requirements and Standards	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1465
5.1.3	81	ORS 196.795–196.990	Chapter 196, Columbia River Gorge; Ocean Resource Planning; Wetlands; Removal and Fill, from Streamlining process for administering state removal or fill permits (196.795) to Penalties (196.990)	https://oregon.public.law/statutes/ors_chapter_196
5.1.3	83	OAR 141-085-0520	Removal-Fill Jurisdiction by Volume of Material	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=350
5.1.3	84	ORS 196.921	Applicability	https://oregon.public.law/statutes/ors_196.921
5.1.3	84	OAR 141-085-0530	Exemptions for Certain Activities and Structures	https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=259392

Section	Footnote Number(s)	Law, Rule, Code, or Guidance		Website Link
		Number/Organization	Title	
5.1.4	85	OAR Chapter 141, Division 14	Rules for Authorizing Leases and Licenses for the Removal or Use of Rock, Sand, Gravel and Silt Derived From State-Owned Submerged and Submersible Land	https://oregon.public.law/rules/oar_chapter_141_division_14
5.1.4	85	OAR Chapter 141, Division 82	General Provisions	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=347
5.1.4	85	OAR Chapter 141, Division 123	Rules for Granting Easements on Non-Trust Lands	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=4854
5.1.4	85	OAR Chapter 141, Division 125	Administrative Rules for Authorizing Special Uses on State-Owned Land	https://oregon.public.law/rules/oar_chapter_141_division_125
5.1.4	86	Article 8, § 5 (2)	Constitution of Oregon, 2020 Edition	https://sos.oregon.gov/blue-book/Documents/oregon-constitution.pdf
5.1.4	87, 88	OAR 141-082-0260, -325; OAR 141-123-0020, -0110; OAR 141-014-0220 to -250 OAR 141-082-0260, -280; OAR 141-123-0020; OAR 141-125-0110; OAR 141-014-250	Department of State Lands	https://oregon.public.law/rules/oar_chapter_141
5.1.5	90	City of Portland	Bureau of Development Services (BDS) website	https://www.portland.gov/bds
5.1.5	92	Portland City Code Title 11	Trees	https://www.portland.gov/code/11
5.1.5	92, 93	Portland City Code Title 33	Planning and Zoning	https://www.portland.gov/code/33
5.1.5	94	Portland City Code Title 24	Building Regulations	https://www.portland.gov/code/24
5.2.1	95	Oregon Planning	Department of Land Conservation and Development, Goal 15: Willamette River Greenway	https://www.oregon.gov/lcd/OP/Pages/Goal-15.aspx

Section	Footnote Number(s)	Law, Rule, Code, or Guidance		Website Link
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5.2.2	96	U.S. Army Corps of Engineers Portland District website	About nationwide and regional general permits	https://www.nwp.usace.army.mil/Missions/Regulatory/Nationwide/
5.2.2.1	97	40 CFR Part 230	Guidelines for Specification of Disposal Sites for Dredged or Fill Material	https://www.epa.gov/sites/default/files/2015-03/documents/cwa_section404b1_guidelines_40cfr230_july2010.pdf
5.2.3.1	98	OAR Chapter 141, Division 89	Administrative Rules Governing the Issuance and Enforcement of General Authorizations within Waters of this State	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=354
5.2.3.2	99	ORS 196.816	General permits allowing removal of certain amount of material for maintaining drainage	https://oregon.public.law/statutes/ors_196.816
5.2.3.2	99	ORS 196.817	General permits	https://oregon.public.law/statutes/ors_196.817
5.2.3.2	99	OAR Chapter 141, Division 93	Administrative Rules Governing the Issuance and Enforcement of General Permits within Waters of this State	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=358
5.2.3.4	100	ORS 196.810(4)	Permit required to remove material from bed or banks of waters	https://oregon.public.law/statutes/ors_196.810
5.2.3.4	100	OAR 141-085-0676	Emergency Authorizations	https://oregon.public.law/rules/oar_141-085-0676
5.2.3.4	101	ORS 465.315(3)	Standards for degree of cleanup required	https://oregon.public.law/statutes/ors_465.315
5.2.3.4	101	ORS 421.628	Effect of decision of Corrections Facilities Siting Authority	https://oregon.public.law/statutes/ors_421.628
5.2.3.4	101	ORS 459.047	Landfill assistance from department	https://oregon.public.law/statutes/ors_459.047
5.2.3.4	102	ORS Chapters 466, 459, 468, 468A and 468B	Hazardous Waste and Hazardous Materials II Solid Waste Management Environmental Quality Generally Air Quality Water Quality	https://oregon.public.law/statutes/ors_chapter_466 https://oregon.public.law/statutes/ors_chapter_459 https://oregon.public.law/statutes/ors_chapter_468 https://oregon.public.law/statutes/ors_chapter_468a https://oregon.public.law/statutes/ors_chapter_468b

Section	Footnote Number(s)	Law, Rule, Code, or Guidance		Website Link
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5.2.3.5	103	OAR 141-085-0550(5)	Application Requirements for Individual Permits	https://oregon.public.law/rules/oar_141-085-0550
5.2.3.5	104	Oregon Department of State Lands	Waterways & Wetlands, Permits & Authorizations	https://www.oregon.gov/dsl/WW/Pages/Permits.aspx
5.2.3.5	104	Oregon Department of State Lands	A Guide to the Removal-Fill Permit Process	https://www.oregon.gov/dsl/WW/Documents/Removal_Fill_Guide.pdf
5.2.3.7	106	ORS 196.800	Definitions	https://oregon.public.law/statutes/ors_196.800
5.2.3.7	106	ORS 196.805	Policy	https://oregon.public.law/statutes/ors_196.805
5.2.3.7	106	ORS 196.825	Criteria for issuance of permit	https://oregon.public.law/statutes/ors_196.825
5.2.3.7	107	OAR 141-085-0560	Public Review Process for Individual Removal - Fill Permit Applications	https://oregon.public.law/rules/oar_141-085-0560
5.2.3.7	108	ORS 465.315(3)	Standards for degree of cleanup required	https://oregon.public.law/statutes/ors_465.315
5.2.4	111	OAR Chapter 141, Division 123	Rules for Granting Easements on Non-Trust Lands	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=4854
5.2.4	112	OAR Chapter 141, Division 82	General Provisions	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=347
5.2.4	113	OAR Chapter 141, Division 14	Rules Governing the Management of State-Owned Submerged and Submersible Land Subject to Remediation and Habitat Restoration Activities	https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=371
5.2.4	114	OAR Chapter 141, Division 125	Administrative Rules for Authorizing Special Uses on State-Owned Land	https://oregon.public.law/rules/oar_chapter_141_division_125
5.2.4	115	OAR 141-082-0255(43)	Definitions	https://oregon.public.law/rules/oar_141-082-0255
5.2.4	115	OAR 141-082-0265(5)	Types of Uses and Required Authorizations	https://oregon.public.law/rules/oar_141-082-0265
5.2.4	116	OAR 141-014-0240(4)	Application Requirements for Removal of Material	https://oregon.public.law/rules/oar_141-014-0240
5.2.4.1	117	OAR 141-123-0050	Easement Application Review and Approval Process	https://oregon.public.law/rules/oar_141-123-0050

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5.2.4.1	119	OAR 141-14-0220(2), 141-082-280(8) and 141-123-0050(4)	Policies and General Provisions Lease and Public Facility License Application Review Process Easement Application Review and Approval Process	https://oregon.public.law/rules/oar_141-014-0220 https://oregon.public.law/rules/oar_141-082-0280 https://oregon.public.law/rules/oar_141-123-0050
5.2.4.1	120	OAR 141-0280(2)	Lease and Public Facility License Application Review Process	https://oregon.public.law/rules/oar_141-082-0280
5.2.4.1	122	OAR 141-082-0280(10)	Lease and Public Facility License Application Review Process	https://oregon.public.law/rules/oar_141-082-0280
5.2.4.1	122	OAR 141-123-0050(6)	Easement Application Review and Approval Process	https://oregon.public.law/rules/oar_141-123-0050
5.2.4.1	123	OAR 141-014-0350	General Lease and License Conditions	https://oregon.public.law/rules/oar_141-014-0350
5.2.4.1	123	OAR 141-082-0285	General Lease and Public Facility License Conditions and Form	https://oregon.public.law/rules/oar_141-082-0285
5.2.4.1	123	OAR 141-082-0325	Registration Requirements and Provisions	https://oregon.public.law/rules/oar_141-082-0325
5.2.4.1	124	OAR 141-123-0050	Easement Application Review and Approval Process	https://oregon.public.law/rules/oar_141-123-0050
5.2.4.1	124	OAR 141-123-0070	General Easement Terms and Conditions	https://oregon.public.law/rules/oar_141-123-0070
5.2.5	125	Portland City Code Chapter 19.04.065	Harbor Line	https://www.portland.gov/code/19/04/065
5.2.5.1	127	City of Portland	Bureau of Development Services (BDS) website	https://www.portland.gov/bds
5.2.5.1	128	City of Portland	Land Use Review Fees and Land Use Review Types	https://www.portland.gov/bds/zoning-land-use/land-use-review-fees-and-types
5.2.5.2	129	Metro Code 3.07.340.B (Title 3)	Chapter 3.07, Urban Growth Management Functional Plan	https://www.oregonmetro.gov/sites/default/files/2018/03/19/Metro-Code-chapter-3-07-updated-03192018.pdf

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6	130	U.S. Environmental Protection Agency	*Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites*	https://www.epa.gov/sites/default/files/documents/icip_guidance_final_-_12.04.2012.pdf

Notes

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

EPA = U.S. Environmental Protection Agency

OAR = Oregon Administrative Rule

OHA = Oregon Health Authority

ORS = Oregon Revised Statute

USC = United States Code

USCG = United States Coast Guard

APPENDIX B

Multnomah County Health Department Recommendations for an Education and Outreach Program in Support of the Portland Harbor Lower Willamette River Harbor-Wide Fish Advisory Institutional Control

Appendix B. Multnomah County Health Department Recommendations for an Education and Outreach Program in Support of the Portland Harbor Lower Willamette River Harbor-Wide Fish Advisory Institutional Control

Introduction

Informational Institutional Controls (ICs) such as fish advisories typically ineffectually focus on restricting or influencing behaviors. Affected communities must have the ability to determine how to effectively and appropriately address the consumption of fish that is contaminated based on their respective cultural context.

Public involvement through multiple channels and at all stages is key to the success of the Lower Willamette River Fish Advisory (Fish Advisory) (Attachment B-1, Oregon Health Authority Lower Willamette River Fish Advisory) Education and Outreach Program. A multi-faceted approach results in reaching communities most vulnerable to the health risks posed by eating contaminated fish. These communities include women, groups historically impacted by environmental injustice, and subsistence fishers. Easy to understand communications that connect the risk of eating certain fish for vulnerable people in the fishers' lives, such as pregnant people and children, are an essential component.

The long-term goals of an effective fish advisory education and outreach program are to:

1. Reduce people's toxics exposures from resident fish and shellfish consumption.
2. Mitigate adverse health outcomes through timely, transparent, and effective environmental health risk communications.
3. Ensure that health and equity are given due weight in environmental policy decisions and actions.

The City of Portland, State of Oregon, and Port of Portland provided the Multnomah County Health Department (MCHD) with interim funding through an intergovernmental agreement to develop the Fish Advisory Education and Outreach Program. MCHD applied evidence-based methods (Hughes McDermott, 2003) for Fish Advisory health risk communication in planning and implementing the program (Attachment B-2, MCHD *Fish Advisory Report*).

These methods include the following:

1. Defining and characterizing the priority audience.
2. Determining the most effective outreach channels.
3. Determining the most effective format for outreach and education materials.
4. Composing culturally appropriate messages and outreach and education materials.
5. Pretesting and revising materials, then testing materials again.

Development of the Fish Advisory Education and Outreach Program

MCHD's adoption of an environmental justice resolution in November 2018 (Multnomah County, 2018) guided its programmatic work, including that related to the Fish Advisory Education and Outreach Program. This resolution emphasizes meaningful public participation by creating a space for community members to provide input, ask questions, and raise concerns about their environment. Previous MCHD education and outreach brought in community members most impacted by the Fish Advisory, ensured that information about the IC was easily understood, offered ways to participate that removed barriers, and recognized community members' lived experiences as expertise.

MCHD built relationships with community organizations by holding workshops; appearing on a local Slavic radio show; attending numerous cultural and neighborhood events; engaging with fishers through social media; co-teaching classes on healthy fish consumption to recipients of the Special Supplemental Nutrition Program for Women, Infants, and Children; developing the "Go Fish" educational game; creating a video for fishers; advertising in the *Portland Chinese Times*, on Slavic Family Radio, and in the *Phuong Dong News*; and many other efforts. MCHD collaborated with community members (focusing on the communities most impacted by the Fish Advisory), community organizations, and agencies to do the following:

1. Build and enhance community capacity to partner on programmatic work.
2. Design and implement culturally appropriate and effective IC strategies and tools.
3. Support inclusion of community voices in agency decision-making related to this issue.

MCHD held education and communications design workshops from September 2018 to June 2019 with community members to ensure materials and messages were informed by and for impacted communities.

Overview of Portland Harbor Communities that Eat Resident Fish

Subsistence fishing refers to fishing that provides an essential source of food for the fisher or the fisher's family. Fishing by members of Native American tribal members for both subsistence and ceremonial purposes has taken place in the Lower Willamette River since time immemorial and continues today. Diverse communities in Portland also use the river for subsistence fishing. Communities of color, including Black communities, as well as communities that are Spanish-speaking, Vietnamese, Hmong, Chinese, Ethiopian, Somali, and Russian/Slavic also fish and eat resident fish from Portland Harbor (EPA and ODEQ, 2016). Eating Portland Harbor resident fish—such as bass, catfish, and carp—is a long-term health risk, especially for subsistence fishers and their families. In the community surrounding the Portland Harbor Superfund Site (PHSS) (i.e., within a 2.5-mile radius), approximately 24% of people are people of color and English is not the primary language for 15% of the people in this area (EPA, 2020). The varying needs of different communities fishing in the Lower Willamette River require multi-faceted, community-centered Fish Advisory education that is both culturally and linguistically appropriate.

Environmental Justice

The U.S. Environmental Protection Agency's (EPA's) Office of Environmental Justice works to address disproportionately adverse human health and environmental impacts in overburdened communities. In 1994, President Clinton signed Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The order directs agencies addressing environmental and human health conditions in communities of color and low-income communities to avoid placing disproportionate burdens from the effects of these actions on those communities. Additionally, EPA's PHSS Record of Decision emphasizes the need for using an environmental justice lens in the Portland Harbor cleanup (EPA, 2017). The application of an environmental justice lens requires the meaningful involvement of impacted communities in decisions, efforts, and programs that affect them.

EPA and the Oregon Department of Environmental Quality developed the PHSS *Community Involvement Plan* in 2016 (EPA and ODEQ, 2016) and released an updated *Community Involvement Plan* in 2020 (EPA, 2020). As part of the 2020 plan update, EPA sought community input on its Portland Harbor website and added more guidance on environmental justice issues and actions to the plan to help address some of these issues. In the *Community Involvement Plan* update, EPA states that the Fish Advisory should be implemented using environmental justice principles (EPA, 2020).

Key Strategies

MCHD will work with performing parties, Native American tribes, community groups, appropriate state agencies (such as the OHA), and other parties to develop and maintain an education and outreach program tailored to the Portland Harbor fishing community. The strategy for the Fish Advisory will draw on experiences at other Superfund sites and MCHD's foundational work at Portland Harbor, including its application of environmental justice principles. Likewise, feedback from the tribal governments and communities will inform adaptations and improvements to the Education and Outreach Program.

Components of the Fish Advisory Education and Outreach Program are as follows:

1. Provide information about the nature and extent of the contamination and its adverse health effects (e.g., the Fish Advisory's extent on the Lower Willamette River, the fish and shellfish species, contaminants of concern, the adverse health effects from these contaminants).
2. Encourage avoidance by one or more of several means (e.g., refraining from eating fish altogether, reducing the number of fish consumed).
3. Suggest alternative means to continue eating fish (e.g., altering the frequency of fish meals, altering preparation methods, fishing at other sites, fishing for and eating other species).
4. Where possible, foster capacity-building or leadership of the affected group (i.e., Portland Harbor fishing community).
5. Support policies that promote environmental justice and reduce health impacts of the PHSS.

These components are informed by the National Environmental Justice Advisory Council's *Fish Consumption and Environmental Justice Report* (NEJAC, 2002). MCHD designed the Education and Outreach Program to address these components using a socioecological model based on MCHD's knowledge of public health training best practices. The socioecological model conceptualizes health broadly and focuses on multiple factors that might affect health. There are five levels to this model: individual, interpersonal, organizational, community, and public policy. The socioecological model emphasizes the need for interventions at multiple levels for maximum effectiveness. The four core concepts from the socioecological model applicable to the outreach program are the following:

- An individual's practices are influenced by the physical, social, and cultural dimensions of their or their community's environment and attributes.
- The same environment may have different effects on different individuals' practices, depending on a variety of factors.
- Individuals and groups operate in multiple environments (e.g., workplace, neighborhood, larger geographic communities) that influence each other.
- There are personal and environmental leverage points, such as the physical environment, available resources, and social norms that exert vital influences on healthy practices.

Direct Engagement, Education, and Relationship Building

Direct engagement is an important aspect of gaining and sustaining public awareness of the Fish Advisory. Essential to effective engagement is the provision of information in multiple languages, formats (e.g., using videos and illustrations), and input collection methods (e.g., in-person, online, etc.).

Building trusting relationships with community members requires ongoing communication and transparency. Maintaining regular and open dialogue to respond to questions and concerns as they arise engenders trust. The trust and understanding that come with an established relationship support more in-depth and effective conversations with community members about the Fish Advisory. This level of deep engagement is central to the theory of change underlying effective IC implementation and the MCHD's approach to maintaining the Fish Advisory will reflect that.

Meeting communities where they are is essential to sharing information about the Fish Advisory. Locations and venues to reach communities include community centers, houses of worship, schools, youth programs, and community health centers. Attending community meetings, celebrations, cultural events, and festivals as well as providing presentations allows MCHD to build relationships, grow trust, and educate communities about the Fish Advisory.

MCHD will work with community-based organizations, community groups, and public agencies to build their capacities to engage, build trust, and carry out health education activities in communities affected by site-related contamination.

The groups that the MCHD will engage include, but are not limited to:

- Asian Health & Services Center
- Asian Pacific American Network of Oregon (APANO)
- Black Educational Achievement Movement Village
- Brown Folks Fishing
- Community Engagement Liaison Services (CELS)
- East European Coalition
- Familias en Accion
- Get Hooked Foundation
- Healthy Birth Initiative (MCHD)
- Human Access Project
- Immigrant & Refugee Community Organization (IRCO)
- Latino Network
- Multnomah County Libraries (Gresham/Russian-Speaking and Holgate/Chinese/Vietnamese-Speaking)
- National Association for the Advancement of Colored People (NAACP)
- Native American Youth and Family Center (NAYA)
- Northeast Coalition of Neighborhoods
- Northwest Council of Water Protectors
- Northwest Somali Community Organization
- Oregon Bass and Panfish Club
- Oregon Department of Fish and Wildlife
- Oregon Community Health Workers Association (ORCHWA)
- Pacific Islander Coalition
- Portland Audubon
- Portland Harbor Community Advisory Group
- Portland Harbor Community Coalition
- Portland State University
- Rosewood Family Health Center
- Slavic Family Radio
- Vietnamese Community of Oregon
- Wisdom of the Elders
- Women, Infants and Children (WIC) Program (MCHD)
- Utopia PDX

The Fish Advisory Education and Outreach Program should engage American Indians living within the PHSS. MCHD will continue to share information about this program with the six federally recognized Tribes involved in the PHSS through the Portland Harbor Natural Resources Trustee Council and the Technical Coordination Team.[1] MCHD will tailor outreach with the understanding that: (1) fish provide sustenance and subsistence to their tribal communities; (2) culturally significant species include salmonids, lamprey (eels), eulachon (smelt), and sturgeon; and (3) tribal members prepare fish and shellfish differently and utilize fish at various stages in life based on their culture, livelihood, and history. The timing of fish and shellfish advisory updates and coordination with tribal members and representatives for the PHSS is critical. Further, tribal members should be involved with trainings and employed/included in the workforce for the Fish Advisory Education and Outreach Program as opportunities arise. Tabling and direct outreach at urban Native American-led functions are key for communication. This includes work and school fairs, the Columbia Inter-Tribal Fish Commission (CRITFC), Affiliated Tribes of Northwest Indians (ATNI), social functions (e.g., powwows and canoe journeys), and other social, economic, and political gatherings. Outreach to trade organizations that employ Native people is critical.

Recommended outreach and education activities include, but are not limited to:

1. Regularly attending public events (e.g., Salmon Celebration, Delta Park Pow Wow and Encampment, REACH events, the *Explorando el Colombia Slough* Festival, Portland Sunday Parkways, and the Laura Media Health Fair).
2. Sponsoring priority community events (e.g., Jade International Night Market, Slavic Festival).
3. Co-leading WIC nutrition classes to teach about healthy fish options for those pregnant and parenting.
4. Collaboration with local fishers, Oregon Department of Fish and Wildlife, OHA, and Human Access Project to design videos, signs, and events to educate about safer fish to consume.

Communication

MCHD will work with impacted communities to develop and implement community-informed messages. Messages shaped by impacted communities for members of impacted communities will result in greater acceptance of these messages. Additionally, MCHD will use various communication methods to inform community stakeholders of the Fish Advisory. Applying a multi-faceted approach is critical to effectively reach women, groups historically impacted by environmental injustice, and subsistence fishers. Relying on signage alone is not sufficient to reach these populations.

Effective communication requires that information be conveyed in a language, via a medium, in accordance with cultural considerations, and generally in a way that will enable it to reach and be understood by those affected by the Fish Advisory. Communications will be translated into multiple languages. As part of the communications, MCHD will hire an artist(s) to convey culturally specific messages in a variety of visual media. As recommended in the *Community Involvement Plan*, artists hired for Fish Advisory communications are encouraged to be members of the local communities affected by the cleanup (EPA, 2020). Community members will review and approve educational outreach materials prior to launching. Educational outreach will evolve and adapt to meet the needs

[1] The six federally recognized Tribes involved on the PHSS are the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Grand Ronde Community of Oregon, Confederated Tribes of the Siletz Indians, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, and Nez Perce Tribe.

of the community. A public education campaign must be multi-pronged and include a combination of diverse approaches for maximum effectiveness.

The messages about the Fish Advisory should be delivered in multiple languages and varied ways, such as:

1. **Branding:** Use the logo and tagline in promotional materials for the IC to be recognizable and memorable.
2. **Social and Digital Media:** Post current and engaging information on platforms including, but not limited to, Facebook, Twitter, Snapchat, Instagram, and/or Nextdoor.
3. **Fact Sheets and Flyers:** Create and distribute information in an understandable, scientifically accurate and succinct manner through events, community health workers, recreational venues, email, and websites.
4. **Interactive Activities:** Design a Go Fish! Game, online quiz, quick response (QR) codes, fishing events, cooking classes, and calendar to attract a wide audience.
5. **Print Advertisements:** Post advertising on public transit and in community publications such as *El Hispanic*, *Phuong Dong News*, and *Asian Reporter* newspapers and *Afisha* magazine.
6. **Television and Radio:** Develop public notices and submit them to existing local newspapers, newsletters, diverse media channels, radio stations, and television to provide Fish Advisory information and updates or announce public meetings and other community involvement opportunities (e.g., local Spanish radio channels). Provide public service announcements in multiple languages.
7. **Yard Signs:** Free yard signs are a popular way in Portland to increase awareness of public health issues. For example, there was a high demand in 2018 for the Portland Bureau of Transportation's vehicle speed reduction "20 is Plenty" campaign yard signs, which urge drivers not to exceed 20 miles per hour. Multnomah County recently offered "Skip the Fire, Love Your Lungs" yard signs advising residents not to use fireplaces, woodstoves, chimineas when air quality is bad or during COVID.
8. **Signage:** Install replacement signage as needed and install additional signage along the Portland Harbor where shoreline fishing occurs and in places to notify fishers using boats. Updates will address community needs, be written in multiple languages, be readable to the visually impaired, and provide information on where and how to get additional information, such as QR codes.

There are currently fours signs for the Fish Advisory posted along the Portland Harbor (two at Cathedral Park, one on Swan Island, and one at Kevin Duckworth Dock). EPA has identified several recreational beaches that may be used by the public (see Figure 2 in the Programmatic Institutional Controls Implementation and Assurance Plan).

MCHD shall regularly monitor signage to ensure they are still in place, in good condition, have up-to-date information, and determine whether additional signage would be beneficial for advancing program goals. The community can also play a role in sign monitoring by voluntarily reporting damaged or missing signs. A point of contact or hotline for reporting on missing signs will be available to community members on the Fish Advisory websites and/or on future signage. Once developed, the IC Registry will serve as a mechanism for the community to report missing or damaged signs using an online format.

Fish Advisory signage design should be updated to provide additional information and address community needs. Updated Fish Advisory signs should be in multiple languages, be readable to visually impaired community members, and convey more practical information. Fish Advisory signs should also describe a means to get additional information, e.g., by providing contact information, a website link, or a QR code. The template for the redesigned Fish Advisory signs will be made available to performing parties for use as an IC, if applicable.

Capacity Building of Communities Affected by the Clean-Up

The World Health Organization (WHO) defines capacity building as "the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion…" (Smith et al., 2006). These efforts will be focused on the communities identified through reviews of the EPA Portland Harbor *Community Involvement Plan* (2020), The Brattle Group's fish consumption study (Sunding and Buck, 2012), Portland State University's *Community Perspectives on the Future of the Portland Harbor and Willamette River* (Rome and Bell, 2012), the Eastern European Coalition & Impact NW Slavic Community *Needs Assessment* (2013), the OHA (SHINE) survey of fish consumption practices (SHINE, 2005), and the 2001–2002 Willamette Riverkeeper's anglers survey (Willamette Riverkeeper, n.d.). MCHD will ensure they have the information they need to inform leaders and develop systems to improve health outcomes in their communities.

The goal is to increase the capacity of stakeholders of the Portland Harbor to work on issues related to the Fish Advisory. Four elements of building optimal capacity are (1) leadership, (2) a learning climate that "fosters open communication, critical self-evaluation and new ideas," (3) resources, and (4) support (Suarez-Balcazar et al., 2010). Capacity building is a participatory process for all stakeholders. Action steps are taken together at the individual, community, and institutional levels.

Recommended capacity building activities include, but are not limited to:

1. Networking with community-based groups that have trusted, established connections (e.g., Asian Health & Services Center, East European Coalition, Familias en Accion, Native American Youth and Family Center) and integrating their interests with the science and policy aspects of the fish advisory.
2. Creating and/or supporting educational opportunities from diverse perspectives (e.g., murals that integrate art into infrastructure to provide long-term messaging).
3. Training Community Health Workers through OHA Office of Equity and Inclusion approved curriculum focusing on cultural values, beliefs, and practices around enjoying the outdoors and fishing. Content should also include information on contamination of the river and the cleanup process, health risks of consuming resident fish and shellfish from the Lower Willamette River, the safest fish species to eat, key health messages, and discussions of what participants want to share with their community.
4. Co-developing/facilitating interactive nutritional classes and materials for women of childbearing age and their children (e.g., Special Supplemental Nutrition Program for Women, Infants and Children).
5. Engaging leaders in the fishing community to spearhead initiatives related to the Fish Advisory.
6. Maintaining membership in the Portland Harbor Collaborative with other public agencies and community partners and cross-sharing information.

Continuous Program Evaluation

Program evaluation enables MCHD to assess the effectiveness of the program and make necessary adaptations based on lessons learned, community feedback, and new and emerging research findings. A key strategy of the Fish Advisory Education and Outreach Program is to operate by continuously receiving and adapting based on community feedback. Using this strategy, the community supports the program by providing a range of real-time performance feedback. MCHD and others involved in the program will use the feedback to inform ongoing adaptions and improvements to the program. By encouraging all types of feedback and implementing real program changes in a timely manner based on feedback received, the Education and Outreach Program strengthens its relationship with the community. Further, this strategy creates an environment in which the community can feel comfortable giving feedback.

MCHD will acknowledge and accommodate different types of feedback based on what works for different community stakeholders. The agency will use the Plan-Do-Check-Act Cycle for carrying out this process. This continuous quality improvement model begins with planning in the community, testing the plan by implementing the work, assessing the work, and acting on lessons learned. Where possible, MCHD will use strength-based language to actively engage and solicit feedback, instead of presenting predeveloped solutions. Additionally, MCHD will assess the effectiveness of the Fish Advisory Education and Outreach Program by working with its Program Development and Evaluation Services to do the following:

1. Conduct post-training surveys and key informant interviews to determine changes in knowledge and skills related to healthy fish consumption.
2. Evaluate the impact of Community Health Worker outreach by identifying ways this culturally appropriate information was shared accurately in the community.
3. Revise the program and engagement materials based on findings.
4. Share the findings through reports and presentations to disseminate outcomes, successes, challenges, and lessons learned.

An annual report will be prepared that includes the following information, at a minimum:

1. A summary of outreach and education activities completed during the year, including sign installation, maintenance, and replacement
2. Key fact sheets and public notification information produced during the year to support the program
3. An evaluation of education and outreach strategies and strategy changes to be implemented in the upcoming year
4. Activities planned for the upcoming year

The annual report will be submitted to the IC Registry.

Policy Recommendations

MCHD should continue to support policies that promote environmental justice ,as Multnomah County did with adopting its environmental justice resolution, and that reduce the health impacts of the PHSS. Recommended actions MCHD can take include the following:

1. Preparing and submitting letters of support/requests for comment on relevant policies at the local, state, and federal level.
2. Collaborating with OHA and Oregon Department of Environmental Quality around health risks associated with the cleanup (e.g., when OHA recommends eating zero resident fish during cleanup).
3. Coordinating policy development on environmental justice issues across programs and departments.

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Attachment B-1

Oregon Health Authority
Lower Willamette River Fish Advisory

Lower Willamette River Fish Advisory

Through public health assessments in 2002 and 2004, the Oregon Health Authority (OHA) and the Agency for Toxic Substances and Disease Registry (ATSDR) identified contaminated fish as the main way people can come into contact with contaminants in the Portland Harbor Superfund site. In 2004, OHA issued a fish advisory that included meal recommendations for fish caught in the Portland Harbor area. Since 2004, new data have been collected and an updated advisory with new meal recommendations has been released. The updated advisory applies to the area circled in orange on the map.

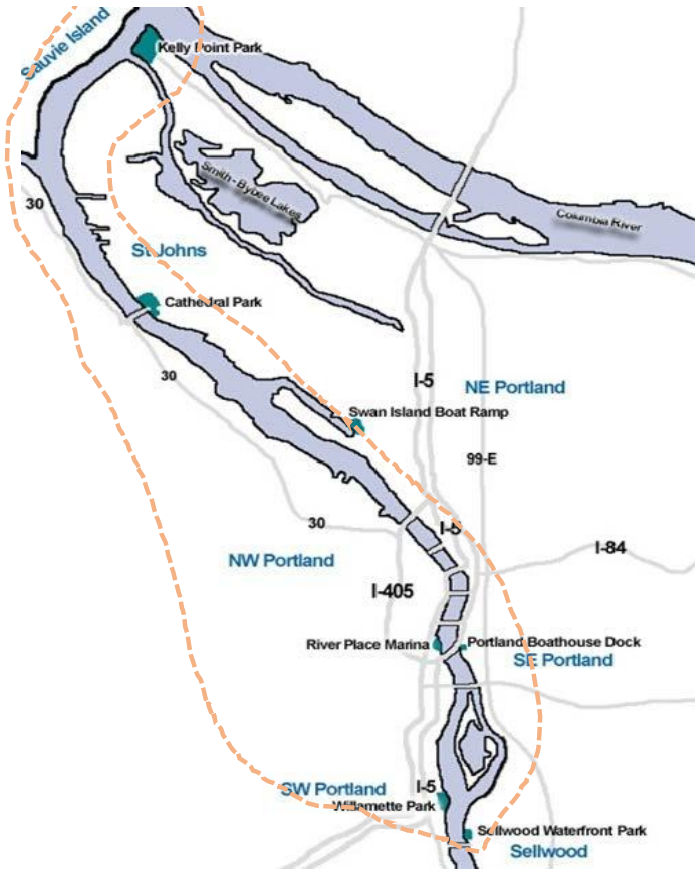


Figure 1. The fish advisory boundary covers a portion of the Lower Willamette River from the Sellwood Bridge to its confluence with the Columbia River. It also includes Multnomah Channel from its confluence with the Willamette River, to the Sauvie Island Bridge.

Oregon health officials recommend limiting the amount of resident fish species eaten from the Lower Willamette River. Resident fish stay within a defined territory on the river and do not migrate out to the ocean.

Recommended maximum meals*, per month, for resident fish:

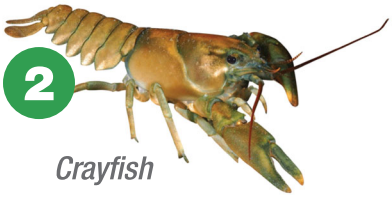
Black Crappie (or 4 meals, if fillet only)

Carp

Brown Bullhead

Bass

Recommended maximum meals*, per month, for shellfish:



Crayfish

Note: Harvesting freshwater clams and mussels in the Willamette River is ILLEGAL.

Mussels

Clams

**All recommended meals will be 0 (zero) when Superfund clean-up activities (for example, dredging) begin and soils are disturbed.*

Eat Fish.

Be Smart. Choose Wisely.

Fish and seafood are good for your heart and brain. They are low in fat, high in protein, and rich in nutrients and omega-3s.

HEALTHY CHOICE
EAT FISH. BE SMART.

Migratory fish, including salmon, steelhead, and shad are NOT included in this fish advisory. Migratory fish from the Willamette River are healthy choices.

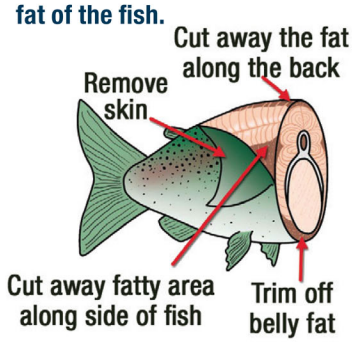
What is a meal?

A seafood serving or "meal" is about the size and thickness of your hand, or 1 oz. uncooked fish for every 20 lbs. of body weight.

160 lb. adult = 8 oz. / 80 lb. child = 4 oz.

Follow these cooking and cleaning tips to reduce your exposure to PCBs*:

- Throw away the skin, fat and organs. PCBs collect in the fat of the fish.
- Bake or broil the fish so fats can drain off.



*Mercury cannot be removed through cooking and cleaning.

Contaminants of concern in fish from the Lower Willamette River

The contaminants of concern in fish from the Lower Willamette River are polychlorinated biphenyls (PCBs). PCBs are known to cause developmental problems in infants and children. Mercury has also been found in the fish. Other contaminants include dioxins and furans, persistent pesticides like DDT, and arsenic.

PCBs and mercury in fish from the lower Willamette River

Mercury and PCBs enter rivers, lakes, and streams through rain or snow and are also directly released from industrial or natural sources. Mercury and PCBs settle into sediment (mud in the river bed and banks) where small organisms feed and take up contaminants. When fish eat smaller organisms, contaminants build up in the fish's muscle (fillet) and fat. The bigger and older a fish is, the more likely it is to have eaten lots of smaller, contaminated organisms. People are exposed to mercury and PCBs when they eat contaminated fish.

For more information and to view the technical report, visit

www.healthoregon.org/fishadv

For other health information on PCBs or mercury:

www.atsdr.cdc.gov/toxfaq.html
www.epa.gov/mercury
https://www.epa.gov/pcbs

For information about the Portland Harbor Superfund clean-up site:

https://www.epa.gov/superfund/portland-harbor

PUBLIC HEALTH DIVISION
Environmental Health Assessment Program

Oregon Health Authority

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OHA 8169 (03/2018)

Attachment B-2

Multnomah County Health Department
Fish Advisory Report

Know Your River, Know Your Food

Portland Harbor Fish Consumption Outreach Program

Multnomah County Health Department

Context

Multnomah County Health Department (MCHD) has the connections in the community to engage the public in a targeted way about the public health risk of eating contaminated fish from the Lower Willamette River. The Agency for Toxic Substances and Disease Registry's (ATSDR) Public Health Assessment for the Portland Harbor (2006) found people who eat resident fish from the harbor are at risk of being exposed to high levels of contamination. Our local health department focuses on the well-being of every person in our community and recognizes the most vulnerable populations are unlikely to get information about this risk in their language or in the modes they might typically receive information. In addition, the clean-up is expected to last for decades and will require risk communication messaging throughout that time span. MCHD is committed to collaborating with the community on this ongoing public health challenge.

Signs Aren't Enough

There are many stories of people fishing within sight of current fish advisory signage. In addition, research shows people don't change behavior around eating contaminated fish just by seeing a sign. They respond to messages that take into account their ethnicity, race, language, gender, and/or income level. (Burger, Stephens, et al., 1999) A general health education campaign is not likely to be effective. The situation calls for a more targeted approach. There needs to be a concerted effort to reach the people most likely to fish in the river and most likely to eat those fish.

An Environmental Justice Approach

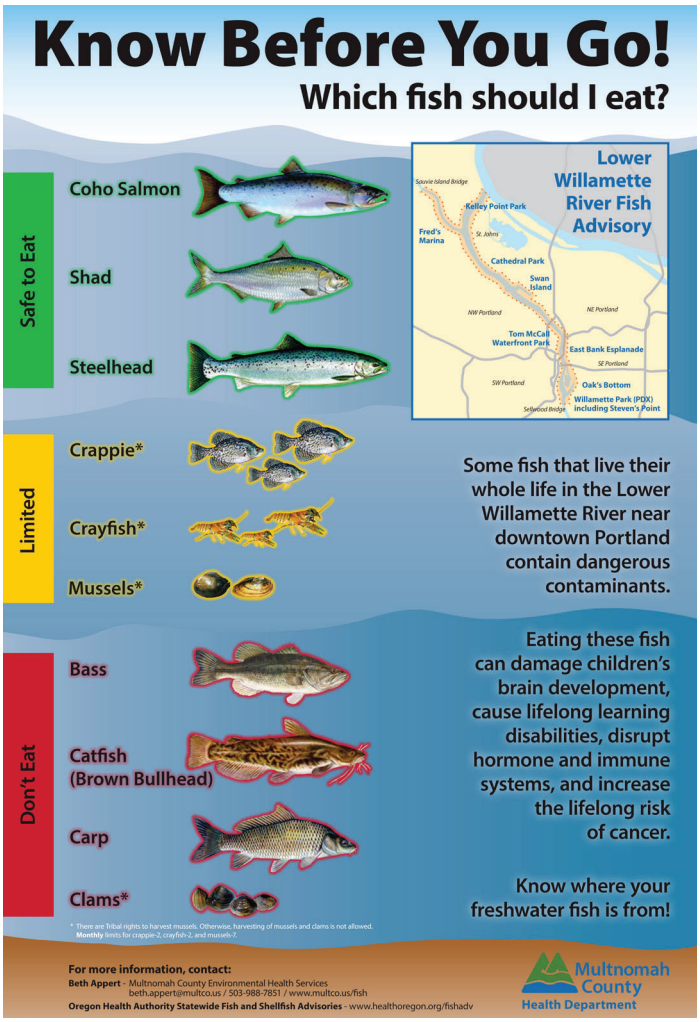
The Health Department's approach is an environmental justice-based approach. We recognize the many ways that decades of race-based exclusionary practices (e.g., redlining and gentrification) have unfairly impacted communities of color, particularly here on the Lower Willamette River. Historically, many displaced people have lived or traveled along this stretch of the river and now they are the ones most likely impacted by this advisory.

The Community Wrote the Message

We led 11 community workshops where people created language about the fish advisory that was grounded both in science and in participants' community and cultural expertise. Through these workshops, community members shaped the form and content of what is communicated about the Oregon Health Authority's fish advisory and how best to reach community members.

In the workshops, MCHD Environmental Health staff explained the advisory to make sure it was fully understood. Then participants were asked to apply their cultural traditions, community knowledge, and community strengths in thinking about ways to communicate effectively with their communities.

Workshops were focused on those communities most likely to be eating fish from the river and included the following: East European, Latino, Vietnamese, Somali, Native American, Pacific Islander, and others.



Where Do We Go from Here?

Moving forward, MCHD is using an ongoing, three-pronged strategy to educate and engage communities at risk, recognizing health behavior has multiple levels of influence:

Comprehensive mass media campaign - Multnomah County residents will receive a comprehensive health risk campaign once clean up begins, including:

- Transit advertising
- Direct mail postcard
- Targeted social media messaging

Targeted methods and materials - People most at risk for adverse health effects will receive targeted materials in their primary languages and in the ways they prefer to receive messages (identified in workshops), including:

- Flyers and brochures
- Radio broadcasts (earned and paid time)
- Public service announcements
- Community newspaper ads
- Online surveys
- Festivals and fairs
- Social media messaging
- Community training

Community training - Trusted community members affiliated with community-based organizations will convey the public health risk message in the language of the populations they serve after training about the Portland Harbor, the contamination in the harbor and the risk of eating fish from the harbor. The trainings are scheduled for the spring and fall of each year beginning in 2020.

Continual Improvement

All materials will be pretested with the target audiences in the context in which they will be distributed and revised based on community feedback. Additionally, community training participants will take surveys and participate in interviews to evaluate what they've learned and retained.

APPENDIX C

Buoy and Signage Design and Installation

Appendix C. Buoy and Signage Design and Installation

Buoys are waterway markers used to delineate the boundaries of U.S. Coast Guard Regulated Navigation Areas (RNAs) and/or Oregon State Marine Board (Marine Board) Boating Regulations to vessel operators. Signs along the riverbank can also be waterway markers and communicate vessel navigation information where the environment, boating conditions, and/or other conditions do not allow for a buoy. Signs can also communicate hazards or use restrictions beyond vessel use restrictions.

Both the U.S. Coast Guard and the Marine Board provide guidelines for waterway markers. Coast Guard signage requirements meet those of the Marine Board. If the U.S. Coast Guard approves a waterway marker design, the Marine Board will approve the design by default. This appendix does the following:

- Describes information summarized from federal and state rules on buoys and signs
- Provides additional usability information
- Includes guidance documents from the Marine Board

Performing parties obtain permission to install waterway markers from the U.S. Army Corps of Engineers (USACE), Marine Board, and Coast Guard. The U.S. Coast Guard gives final approval to the design of the buoy. Further information about buoy and sign are in Title 33 Code of Federal Regulations (CFR) Subchapter C and Oregon Administrative Rule (OAR) 250.10. Contact the U.S. Coast Guard or the Marine Board with questions about buoys and signs. Contact information for these agencies is in Appendix A-1 of the Programmatic IC Plan.

Buoy Standards

Buoys are to be moored to the riverbed by sinkers with chain or other moorings of various lengths.[1] Buoys are to be of a commercially available design, be self-righting, have a durable hard plastic shell, and have an internal foam floatation and a ballast system. Buoys in the Willamette River are considered “fast water buoys”, as such, a buoy’s height are recommended to be at least 36 inches above the waterline, circumference must be at least 10 inches in diameter, and the float collar base be at least 21 inches in diameter.

Buoys used as regulatory markers (i.e., Boating Regulation buoys) be white with horizontal bands of international orange placed completely around the buoy circumference. One band shall be at the top of the buoy body, with a second band placed just above the waterline of the buoy so that both international orange bands are clearly visible to approaching vessels. The area of the buoy body visible between the two bands shall be white. Further, the regulatory symbols and messages, as described in the sign standards section below, is to be placed in the center of the display area, between the horizontal bands.[2]

Sign Standards

Signs shall be made of materials that will retain, despite weather and other exposure, the characteristics essential to their basic significance, such as color, shape, legibility, and position. Acceptable materials include 0.080” aluminum, fluted twin-wall corrugated plastic sheet, or other materials as approved by request to the Marine Board. Signs need to be at least 24 inches in height and 18 inches in width.

[1] 33 CFR § 62.23
[2] OAR 250-010-0245

Signs used as informational (warning) or regulatory (RNA or boating restriction) markers shall be rectangular, have a white background,[3] and contain the symbols and messages described in the Design section below, placed in the center of the display area.[4]

The 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design[5] state that signs are more legible for persons with low vision when signs have a non-glare finish and characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

Informational signs that communicate a message other than navigation regulations, can reach a larger public audience if the text is written in multiple languages.

Symbology

Waterway markers are to contain symbols and messages as follows:

- **Orange diamond shape with a cross inside of it and a white center** – Indicates a water zone where vessels may not enter. Any words or well-known abbreviations must be in black letters above and/or below the shape on a white background. Common messages include "Exclusion Zone," "No Entry," "Swim Area," and "No Boats".
- **Orange circle with a white center** – Indicates the area has an RNA or Boating Regulation and/or is a zoned area. The nature of the control is indicated by words, numerals, or well-known abbreviations in black letters inside the circular shape, or above and/or below it. Common messages include "Slow No Wake," speed restrictions, and motor type restrictions.
- **Orange rectangular with a white center** – Indicates other information of an official nature that will contribute to the health, safety, and well-being of vessel operators. The message will be written within the rectangle in black letters. Common messages include "Marina Entrance," "Wildlife Refuge," services, and other general information.

Letters, numerals, or figures used with the marker symbol shall be black, in block characters of good proportion, and spaced in a manner that will provide maximum legibility.[6] The 2010 ADA Standards for Accessible Design do not include requirements specific to the types of signs that may be used in the Portland Harbor Site. The ADA standards state that sign pictographs (symbols) be at least 6 inches in height and have text descriptions directly below the pictograph. Using pictographs to communicate helps non-English readers understand the message of the sign.

Aligned with the guidelines described above, the symbol and message for buoys marking "no anchoring" areas, i.e., for cap protection, is the following:

[3] Aligned with the 2010 ADA Standards for Accessible Design where it state "Signs are more legible for persons with low vision when characters contrast as much as possible with their background."
[4] OAR 250-010-0255
[5] Available at the ADA.gov website: https://www.ada.gov/regs2010/2010ADAStandards/2010ADAstandards.htm (Accessed September 17, 2021.)
[6] OAR 250-010-0240

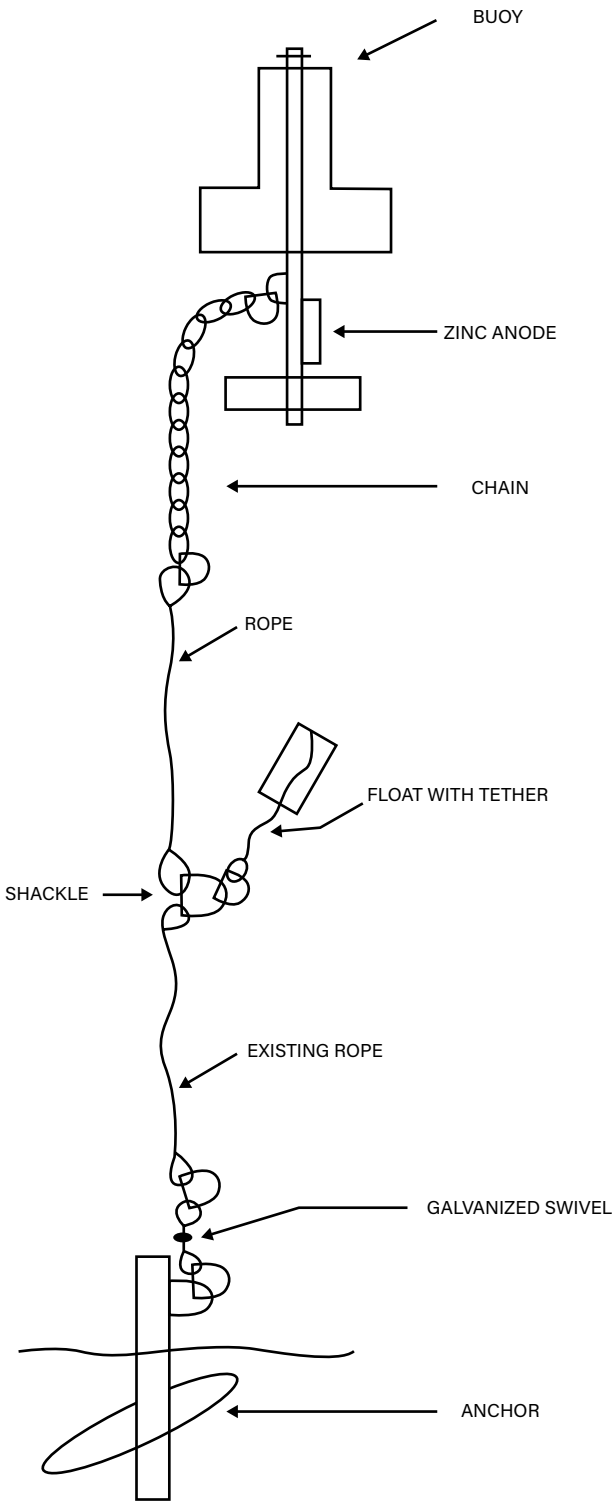
Installation

The performing party installs any waterway markers. The placement of the markers must match the locations approved by the USACE, Marine Board and Coast Guard. The performing party must attach a coding device, provided by the Marine Board, to the waterway marker.[7] Since the buoys can often become dislodged, it is recommended that contact information be on the buoy.

All equipment, new and re-used, will need to comply with the federal and state rules that are summarized under Buoy Standards referenced above. To keep buoys in compliance and in place at their designated locations, buoys must be well anchored and ground tackle must be in good working order.

[7] OAR 250-010-0225

BUOY GROUND TACKLE



Y:\0110_BES\Source_Figures\161_PICIAP

Waterway Marker Standards

Colors and Shapes

Regulatory markers shall contain the symbols and messages as follows:

A diamond shape of international orange with a cross of the same color within it against a white center shall be used to indicate a water zone where vessels may not enter. Any words or well-known abbreviations must be in black letters above and/or below the shape on white background.
Common messages include: Exclusion Zone, No Entry, Swim Area, and No Boats.

A circle of international orange with white center shall be used to indicate water zone within which a control or restriction is imposed upon operation of vessels and/or use of the zoned area. The nature of the control shall be indicated by words, numerals, or well-known abbreviations in black letters inside the circular shape, or above and/or below it.
Common messages include: Slow No Wake, Speed Restrictions, and Motor Type Restrictions.

Informational markers shall contain the symbols and messages as follows:

A diamond shape of international orange with white center shall be used to indicate danger from natural or man-made hazard. The nature of the hazard may be indicated by words or well-known abbreviations in black letters inside the diamond shape, or above and/or below it on white background.
Common messages include: Danger, Rocks, and Low Water.

A rectangular shape of international orange with white center may be used to convey other information of an official nature which will contribute to the health, safety, and well-being of boaters using the state's waters. The message will be presented within the shape in black letters.
Common messages include: Marina Entrance, Wildlife Refuge, Services, and other General Information.

Buoys

Buoys must be white with bands of international orange placed completely around the buoy circumference. One band shall be at the top of the buoy body, with a second band placed just above the water line of the buoy so that both orange bands are clearly visible to approaching vessels. The display area of the buoy body between the two bands shall be white. The symbols and messages described above must be placed in the display area.

- Must be a commercial available design approved by the Marine Board;
- Must be self-righting;
- Must have a durable hard plastic shell;
- Must have internal foam floatation and a ballast system.

Calm water buoys must conform to the following minimum dimensions:

a. The minimum height above the waterline must be 34 inches;
b. The minimum diameter must be 8 inches.

Examples: *CAL 410, Rolyan B961R*

Fast water buoys must conform to the following minimum dimensions:

a. The minimum height above the waterline must be 36 inches;
b. The minimum body diameter must be 10 inches;
c. The minimum float collar base diameter must be 21inches

Examples: CAL 427 River, Rolyan B1428 SW

Signs
Signs must be rectangular in shape, no smaller than 24" in height and 18" in width; with a white background and have the symbols and messages placed in the center of the display area. Signs shall be made of materials which will retain, despite weather and other exposure, the characteristics essential to their basic significance, such as color, shape, legibility, and position.

Acceptable materials include: 0.080" aluminum minimum; fluted twin wall corrugated plastic sheet; or other materials as approved by request to the Marine Board.

Waterway Marker Placement Conditions
After obtaining the requested waterway marker permit, the applicant must install, inspect, maintain, and remove the permitted marker(s) at their own expense and as directed by the Marine Board.

1. All markers must comply with the characteristics and standards prescribed by the Marine Board and all permits issued are subject to the following conditions:
   a. Placement of these markers must be as requested in the application. Any deviation will require the applicant to apply to have the permit amended.
   b. The applicant must attach the Marine Board issued permit number on the buoy marker(s) top.
   c. All markers must be maintained in proper condition at all times. A discrepancy exists whenever a marker is not as described in the approved application or is destroyed, damaged, moved, or is otherwise unserviceable.
   d. Authorization by the Marine Board for the placement of a marker does not authorize any invasion of private rights, nor grant any exclusive privileges, nor does it preclude the necessity of complying with any other federal, state or local laws or regulations.

Transfer of Ownership of Waterway Markers
When any waterway marker(s) authorized under permit by the Marine Board, or the facility with which the marker(s) are associated, is sold or transferred, the Marine Board must be notified within 30 days.

Discontinuance and Removal of Waterway Markers
1. Any permitted waterway marker may be discontinued and removed by the permittee. Upon completion of the removal of the marker, the permitee shall notify the Marine Board in writing within 30 days.

2. The Marine Board or any peace officer charged with the enforcement of OAR Chapter 250 may remove, or cause the removal of, any marker found in violation of OAR Chapter 250, or that does not conform to the permit authorizing the placement of the marker, if the violation is not corrected within 30 days following notification of the permittee of the violation. Waterway markers that create an unreasonable hazard to navigation may be removed immediately.

3. Non-conforming or non-permitted waterway markers removed from the waterway remain the property of the owner. Reoccurring removals of non-conforming or non-permitted markers may result in permanent seizure and will be disposed of in accordance with ORS 98.245.

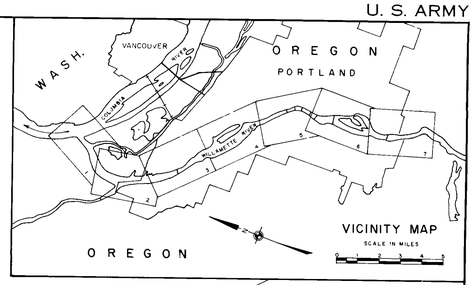
4. The permittee may appeal the decision to remove non-conforming or non-permitted waterway markers to the Board. Requests for Board review must be in writing within 30 days of the removal action. Any person aggrieved by a decision of the Board regarding the issuance or denial of a waterway marker permit is entitled to judicial review of the decision in accordance with the procedure for contested cases provided by ORS Chapter 183.

APPENDIX D

Harbor Line Maps

CORPS OF ENGINEERS

U. S. ARMY



Y 735,000

X 1,425,000

Y 730,000

X 1,423,200

X 1,420,000

X 1,415,000

Y 725,000

BEACH

DREDGE

TRUE NORTH

GRID NORTH

K E L L E Y

P O I N T

KELLEY

HLM-69 USE 1963

COLUMBIA SLOUGH

COMET

Gp. Occ. W.

Fl.G.

28°05'52.7"

3042.59'

CUPID

50°48'24.2"

3019.28'

13-3

Fl.G.

17-2

39°50'42.3"

1857.30'

23°31'34.4"

2430.00'

9

Combined Pierhead & Bulkhead Lines

3-3

C O L U M B I A

WASHINGTON

OREGON

Fl.R.

Fl.W.

4-2

DASHER

HLM-70 USE 1963

DANCER

Fl.R.

PRANCER

PRANG

HLM-68 USE 1963

VIXEN

ABEL-2

Fl.W.

HLM-67 USE 1963

RUDOLPH

E.INT.W.

HLM-65 USE 1963

REDNOSE

Fl.W.

Fl.R.

SAUVIE R.M. 2

APT

S A U V I E I S L A N D

LEGEND OF COORDINATES

REFERENCE CONTROL STATIONS			HARBOR LINE POINTS		
NAME	X	Y	NUMBER	X	Y
ABEL-2	1,416,151.35	728,867.81	1	1,421,319.00	731,865.00
APT	1,418,885.73	738,490.03	3	1,419,885.00	729,181.00
BEACH	1,423,747.82	728,662.95	5	1,419,610.00	728,829.00
COMET	1,420,328.05	728,761.45	7	1,417,270.00	726,921.00
CUPID	1,418,902.43	727,946.76	9	1,416,080.00	725,495.00
DANCER	1,418,484.09	729,786.09			
DASHER	1,419,116.83	730,582.08			
DREDGE	1,424,258.67	733,229.08			
4-2	1,420,636.14	734,005.61			
HLM-65 1963	1,413,341.24	724,496.91			
" 67 "	1,414,715.35	727,143.94			
" 68 "	1,416,641.07	728,358.88			
" 69 "	1,420,372.64	728,923.22			
" 70 "	1,418,989.83	730,380.65			
KELLEY	1,421,548.53	731,245.60			
PRANCER	1,417,509.24	728,896.62			
PRANG	1,418,119.91	730,925.28			
REDNOSE	1,413,750.12	725,717.89			
RUDOLPH	1,414,537.31	726,882.52			
SAUVIE RM 2	1,419,264.71	736,788.05			
17-2	1,416,459.60	715,569.30			
13-3	1,417,264.62	726,523.70			
3-3	1,423,520.45	735,985.63			
VIXEN	1,416,216.93	728,109.16			

NOTES

Control is by USACE and USC&GS.
Coordinates are based on the Lambert Projection for Oregon, North Zone.
Reference Control Stations are shown thus: △
The Harbor Lines are shown thus: o——————o
The bulkhead line defines the limit of solid filling, the pierhead line the limit to which open-pile structures may be built.
Planimetry is taken from USC&GS Special Purpose Manuscripts of 1963.
Distance in miles from mouth is shown thus: (12)

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

WASHINGTON, 9 FEB. 1968

It is recommended that the harbor lines shown on this map in seven sheets be established by the Secretary of the Army, by his approval thereof, subject to the provisions of Section 11 of the River and Harbor Act approved on March 3, 1899, and that this map supersede all other harbor line maps for these shores previously approved by the Secretaries of War and of the Army.

Deputy Chief of Engineers

DEPARTMENT OF THE ARMY

WASHINGTON, 23 FEB. 1968

Approved:

Secretary of the Army

WILLAMETTE RIVER
HARBOR LINES
AT PORTLAND, OREGON

SCALE IN FEET

500 0 500 1000 1500 2000

U. S. ARMY ENGINEER DISTRICT, PORTLAND

SUPERVISED:

CHIEF, PERMITS SECTION

RECOMMENDED:

George E. Hyde

CHIEF, NAVIGATION DIVISION

SUBMITTED:

CHIEF, WATERWAYS MAINTENANCE BRANCH

APPROVED:

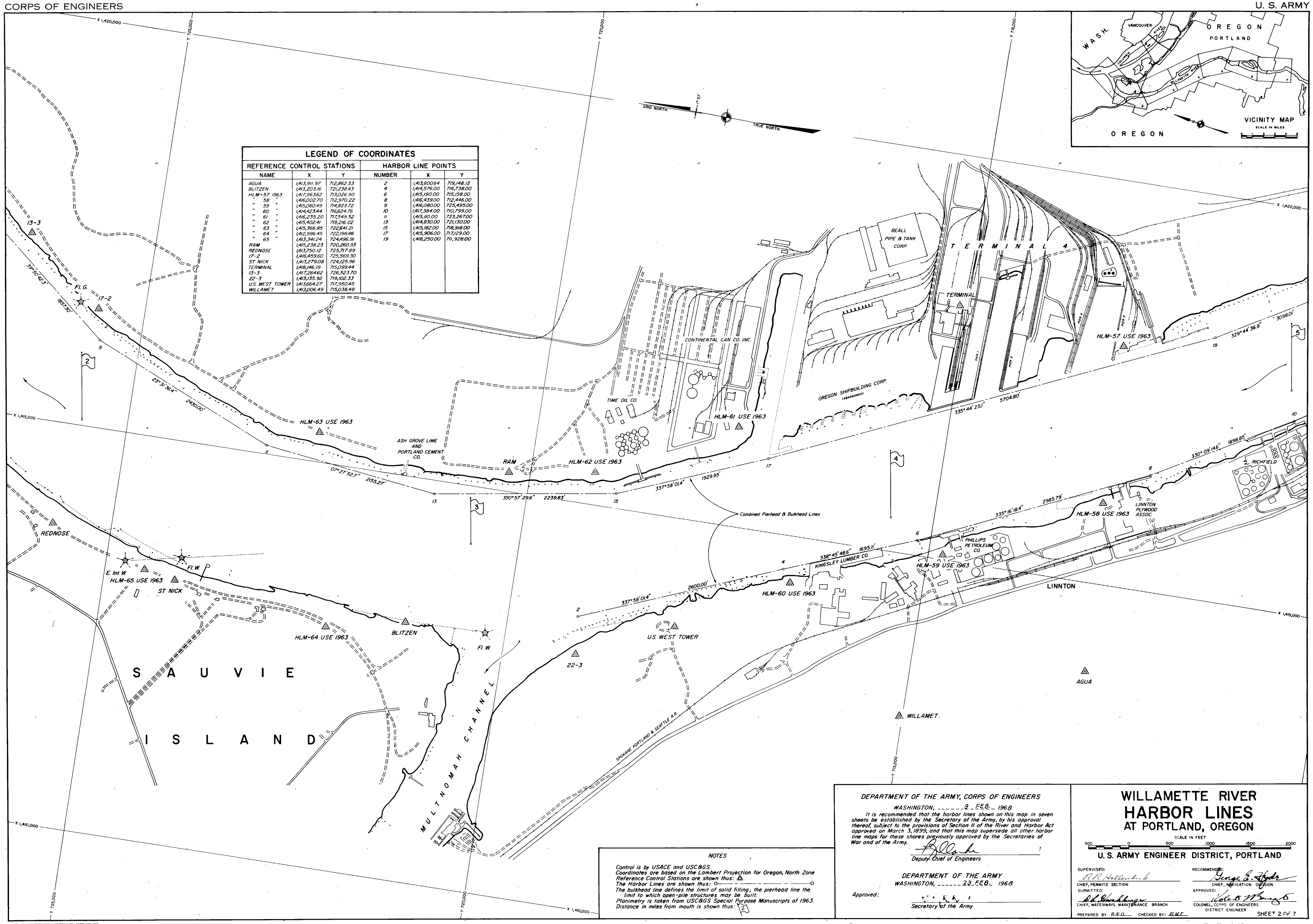
COLONEL, CORPS OF ENGINEERS
DISTRICT ENGINEER

PREPARED BY: R.N.O. CHECKED BY: W.M.F.

SHEET 1 OF 7

ARMY—KILHAM STATIONERY & PRINTING CO., PORTLAND, ORE.

WR-3-5/1



LEGEND OF COORDINATES

REFERENCE CONTROL STATIONS			HARBOR LINE POINTS		
NAME	X	Y	NUMBER	X	Y
AGUA	1,413,911.97	712,862.53	2	1,413,600.64	719,148.12
BLITZEN	1,413,203.16	721,238.43	4	1,414,576.00	716,738.00
HLM-57 1963	1,417,963.62	713,026.90	6	1,415,190.00	715,158.00
" 58 "	1,416,002.70	712,970.22	8	1,416,439.00	712,446.00
" 59 "	1,415,060.49	714,823.72	9	1,416,080.00	725,495.00
" 60 "	1,414,423.44	716,624.76	10	1,417,384.00	710,799.00
" 61 "	1,416,235.20	717,549.52	11	1,415,110.00	723,267.00
" 62 "	1,415,402.41	719,216.02	13	1,414,830.00	721,130.00
" 63 "	1,415,366.85	722,641.21	15	1,415,182.00	718,918.00
" 64 "	1,412,996.45	722,198.46	17	1,415,906.00	717,129.00
" 65 "	1,413,341.24	724,496.91	19	1,418,250.00	711,928.00
RAM	1,415,238.23	720,260.93			
REDNOSE	1,413,750.12	725,717.89			
17-2	1,416,459.60	725,569.30			
ST NICK	1,413,279.08	724,125.96			
TERMINAL	1,418,146.19	715,099.44			
13-3	1,417,264.62	726,523.70			
22-3	1,413,135.92	719,102.33			
U.S. WEST TOWER	1,413,664.27	717,950.45			
WILLAMET	1,413,006.49	715,038.48			

NOTES

Control is by USACE and USC&GS.
Coordinates are based on the Lambert Projection for Oregon, North Zone
Reference Control Stations are shown thus:
The Harbor Lines are shown thus:
The bulkhead line defines the limit of solid filling; the pierhead line the limit to which open-pile structures may be built.
Planimetry is taken from USC&GS Special Purpose Manuscripts of 1963.
Distance in miles from mouth is shown thus: 2

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

WASHINGTON, 9 FEB. 1968

It is recommended that the harbor lines shown on this map in seven sheets be established by the Secretary of the Army, by his approval thereof, subject to the provisions of Section II of the River and Harbor Act approved on March 3, 1899, and that this map supersede all other harbor line maps for these shores previously approved by the Secretaries of War and of the Army.

Deputy Chief of Engineers

DEPARTMENT OF THE ARMY

WASHINGTON, 23 FEB. 1968

Approved:

Secretary of the Army

WILLAMETTE RIVER
HARBOR LINES
AT PORTLAND, OREGON

SCALE IN FEET
500 0 500 1000 1500 2000

U. S. ARMY ENGINEER DISTRICT, PORTLAND

SUPERVISED: R R Hallenbeck
CHIEF, PERMITS SECTION

RECOMMENDED: George E. Hyde
CHIEF, NAVIGATION DIVISION

SUBMITTED:
CHIEF, WATERWAYS MAINTENANCE BRANCH

APPROVED:
COLONEL, CORPS OF ENGINEERS
DISTRICT ENGINEER

PREPARED BY: R.N.O. CHECKED BY: W.M.F.

SHEET 2 OF 7

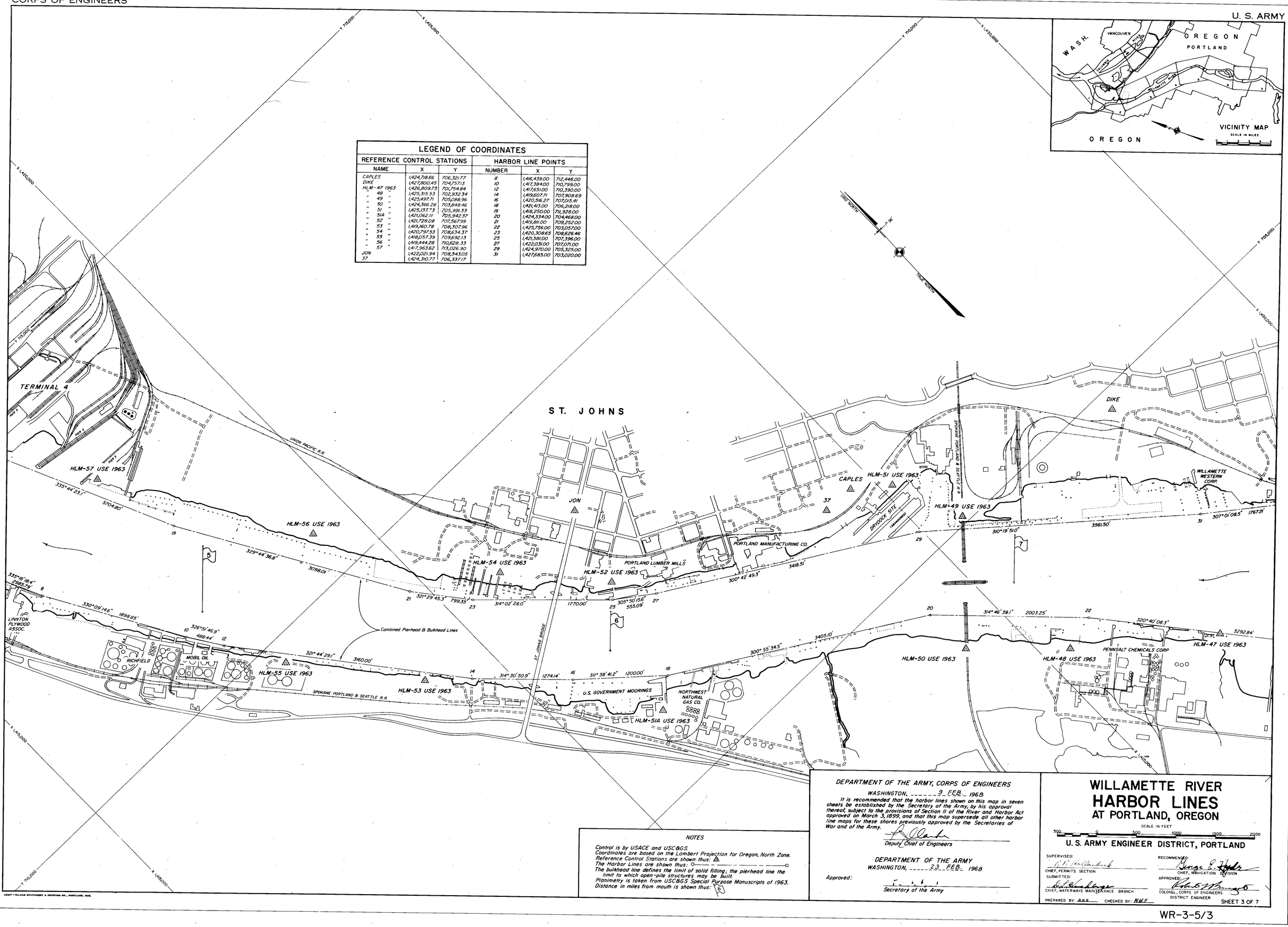
WR-3-5/2A

CORPS OF ENGINEERS

U. S. ARMY

LEGEND OF COORDINATES

REFERENCE CONTROL STATIONS			HARBOR LINE POINTS		
NAME	X	Y	NUMBER	X	Y
CAPLES	1,424,718.66	706,321.77	8	1,416,439.00	712,446.00
DIKE	1,427,800.45	704,757.13	10	1,417,384.00	710,799.00
HLM-47 1963	1,426,809.73	701,754.84	12	1,417,651.00	710,390.00
" 48 "	1,425,315.53	702,932.34	14	1,419,607.71	707,908.69
" 49 "	1,425,497.71	705,088.96	16	1,420,516.27	707,015.41
" 50 "	1,424,366.28	703,848.46	18	1,421,413.00	706,218.00
" 51 "	1,425,137.73	705,991.33	19	1,416,250.00	711,928.00
" 51A "	1,421,062.11	705,942.37	20	1,424,334.00	704,468.00
" 52 "	1,421,728.08	707,567.99	21	1,419,811.00	709,252.00
" 53 "	1,419,160.78	706,307.96	22	1,425,786.00	703,057.00
" 54 "	1,420,797.53	708,634.37	23	1,420,308.65	708,626.46
" 55 "	1,418,057.39	709,692.13	25	1,421,581.00	707,396.00
" 56 "	1,419,444.28	710,628.33	27	1,422,031.00	707,071.00
" 57 "	1,417,963.62	713,026.90	29	1,424,970.00	705,325.00
JON	1,422,021.94	708,543.05	31	1,427,685.00	703,020.00
37	1,424,310.77	706,337.17			



NOTES

Control is by USACE and USC&GS.
Coordinates are based on the Lambert Projection for Oregon, North Zone.
Reference Control Stations are shown thus: △
The Harbor Lines are shown thus: O——————O
The bulkhead line defines the limit of solid filling; the pierhead line the limit to which open-pile structures may be built.
Planimetry is taken from USC&GS Special Purpose Manuscripts of 1963.
Distance in miles from mouth is shown thus: (6)

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS
WASHINGTON, 9 FEB. 1968

It is recommended that the harbor lines shown on this map in seven sheets be established by the Secretary of the Army, by his approval thereof, subject to the provisions of Section 11 of the River and Harbor Act approved on March 3, 1899, and that this map supersede all other harbor line maps for these shores previously approved by the Secretaries of War and of the Army.

Deputy Chief of Engineers

DEPARTMENT OF THE ARMY
WASHINGTON, 23 FEB. 1968

Approved:

Secretary of the Army

WILLAMETTE RIVER
HARBOR LINES
AT PORTLAND, OREGON

SCALE IN FEET
500 0 500 1000 1500 2000

U. S. ARMY ENGINEER DISTRICT, PORTLAND

SUPERVISED:
CHIEF, PERMITS SECTION
SUBMITTED:
CHIEF, WATERWAYS MAINTENANCE BRANCH
RECOMMENDED:
CHIEF, NAVIGATION DIVISION
APPROVED:
COLONEL, CORPS OF ENGINEERS
DISTRICT ENGINEER

PREPARED BY: BWG CHECKED BY: W.M.F.

SHEET 3 OF 7

WR-3-5/3

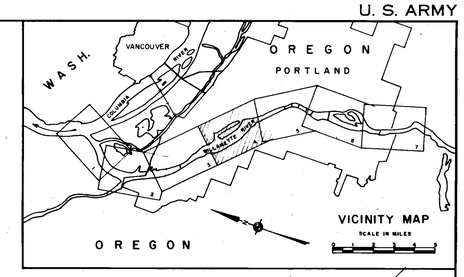
ARMY—KILHAM STATIONERY & PRINTING CO., PORTLAND, ORE.

CORPS OF ENGINEERS

U. S. ARMY

LEGEND OF COORDINATES

REFERENCE CONTROL STATIONS			HARBOR LINE POINTS		
NAME	X	Y	NUMBER	X	Y
C.P. MON. B	1,434,782.46	694,159.84	24	1,427,843.00	700,510.00
C.P. MON. C	1,430,817.48	696,365.59	26	1,429,640.00	698,612.00
C.P. MON. D	1,429,780.13	696,942.67	28	1,431,132.00	697,193.00
C.P. MON. E	1,428,927.27	697,417.12	30	1,435,600.00	694,467.00
COLUMBIA	1,430,696.14	702,176.02	32	1,436,714.00	693,907.00
HLM-35 1963	1,438,359.43	694,302.85	33	1,429,096.00	701,956.00
" 36 "	1,438,034.96	693,051.12	34	1,437,695.00	692,980.00
" 37 "	1,436,307.91	696,637.28	35	1,429,829.00	701,615.00
" 37A "	1,436,156.14	698,381.96	37	1,430,331.00	701,658.00
" 38 "	1,435,188.49	694,554.15	39	1,431,209.00	701,962.00
" 39 "	1,433,878.62	697,465.70	41	1,431,718.00	701,813.00
" 39A "	1,435,372.79	697,877.31	43	1,435,603.00	698,621.00
" 40 "	1,430,970.16	696,903.85	45	1,436,258.00	697,832.00
" 41 "	1,431,293.57	699,864.46	47	1,436,890.00	697,059.00
" 42 "	1,428,636.03	698,963.43	49	1,436,688.18	697,068.80
" 43 "	1,436,367.66	697,039.20	51	1,433,524.35	699,645.23
" 43A "	1,431,701.89	701,088.21	53	1,433,325.62	699781.27
" 44 "	1,431,239.80	702,092.85	55	1,431,705.00	701,101.00
" 44A "	1,430,872.80	701,310.34	57	1,430,899.00	701,332.00
" 45 "	1,430,196.87	701,774.60	59	1,430,241.00	701,168.00
" 46 "	1,429,067.70	702,200.47	61	1,429,682.91	700,539.65
OVERLOOK	1,440,991.02	693,452.88	63	1,431,538.00	698,892.00
SCOTT	1,427,574.20	696,832.82	65	1,434,295.00	696,889.00
U.P.	1,439,233.60	693,025.74	67	1,436,329.16	695,662.12
WALL	1,433,509.16	703,615.49	69	1,437,860.00	694,926.00
			71	1,438,715.00	693,427.00



GRID NORTH
1° 54'
TRUE NORTH

WALL

UNION PACIFIC R.R.

SEA-LAND SERVICE INC.

HLM-37A USE 1963

OVERLOOK

UNIVERSITY OF PORTLAND

HLM-44 USE 1963

COLUMBIA

HLM-45 USE 1963

HLM-46 USE 1963

HLM-43A USE 1963

HLM-44A USE 1963

PORT OF PORTLAND REPAIR FACILITIES

Occ. R.

HLM-39A USE 1963

HLM-43 USE 1963

HLM-37 USE 1963

CONTINENTAL GRAIN CO.

HLM-36 USE 1963

HLM-35 USE 1963

UNION PACIFIC R.R. YARDS

U.P.

GENERAL ORE

I S L A N D

S W A N

HLM-39 USE 1963

HLM-41 USE 1963

Fl. G.

Fl. G.

Combined Pierhead & Bulkhead Lines

HLM-38 USE 1963

WATERWAY TERMINALS CO.

C.P. MON. B

T E R M I N A L 2

TERMINAL 1

WILLAMETTE IRON & STEEL

SCHNITZER STEEL PRODUCTS CO.

TEXACO INC.

SHELL OIL

STANDARD OIL

UNION OIL

DOUGLAS OIL

SHAVER TRANSPORTATION CO.

HLM-42 USE 1963

HLM-40 USE 1963

GUNDERSON BROS. ENGINEERING

GENERAL CONSTRUCTION CO.

C.P. MON. C

C.P. MON. D

C.P. MON. E

SCOTT

X 1,430,000

X 1,435,000

X 1,440,000

Y 705,000

Y 700,000

Y 695,000

Y 690,000

NOTES

Control is by USACE and USC&GS.
Coordinates are based on the Lambert Projection for Oregon, North Zone.
Reference Control Stations are shown thus: △
The Harbor Lines are shown thus: O——— — — ——— — — ———O
The bulkhead line defines the limit of solid filling; the pierhead line the limit to which open-pile structures may be built.
Planimetry is taken from USC&GS Special Purpose Manuscripts of 1963.
Distance in miles from mouth is shown thus: (9)

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

WASHINGTON, 9 FEB. 1968

It is recommended that the harbor lines shown on this map in seven sheets be established by the Secretary of the Army, by his approval thereof, subject to the provisions of Section 11 of the River and Harbor Act approved on March 3, 1899, and that this map supersede all other harbor line maps for these shores previously approved by the Secretaries of War and of the Army.

Deputy Chief of Engineers

DEPARTMENT OF THE ARMY
WASHINGTON, 23 FEB. 1968

Approved:

Secretary of the Army

WILLAMETTE RIVER
HARBOR LINES
AT PORTLAND, OREGON

SCALE IN FEET
500 0 500 1000 1500 2000

U. S. ARMY ENGINEER DISTRICT, PORTLAND

SUPERVISED: CHIEF, PERMITS SECTION
SUBMITTED: CHIEF, WATERWAYS MAINTENANCE BRANCH
RECOMMENDED: CHIEF, NAVIGATION DIVISION
APPROVED: COLONEL, CORPS OF ENGINEERS DISTRICT ENGINEER

PREPARED BY: R.N.O. CHECKED BY: W.M.F.

SHEET 4 OF 7

WR-3-5/4

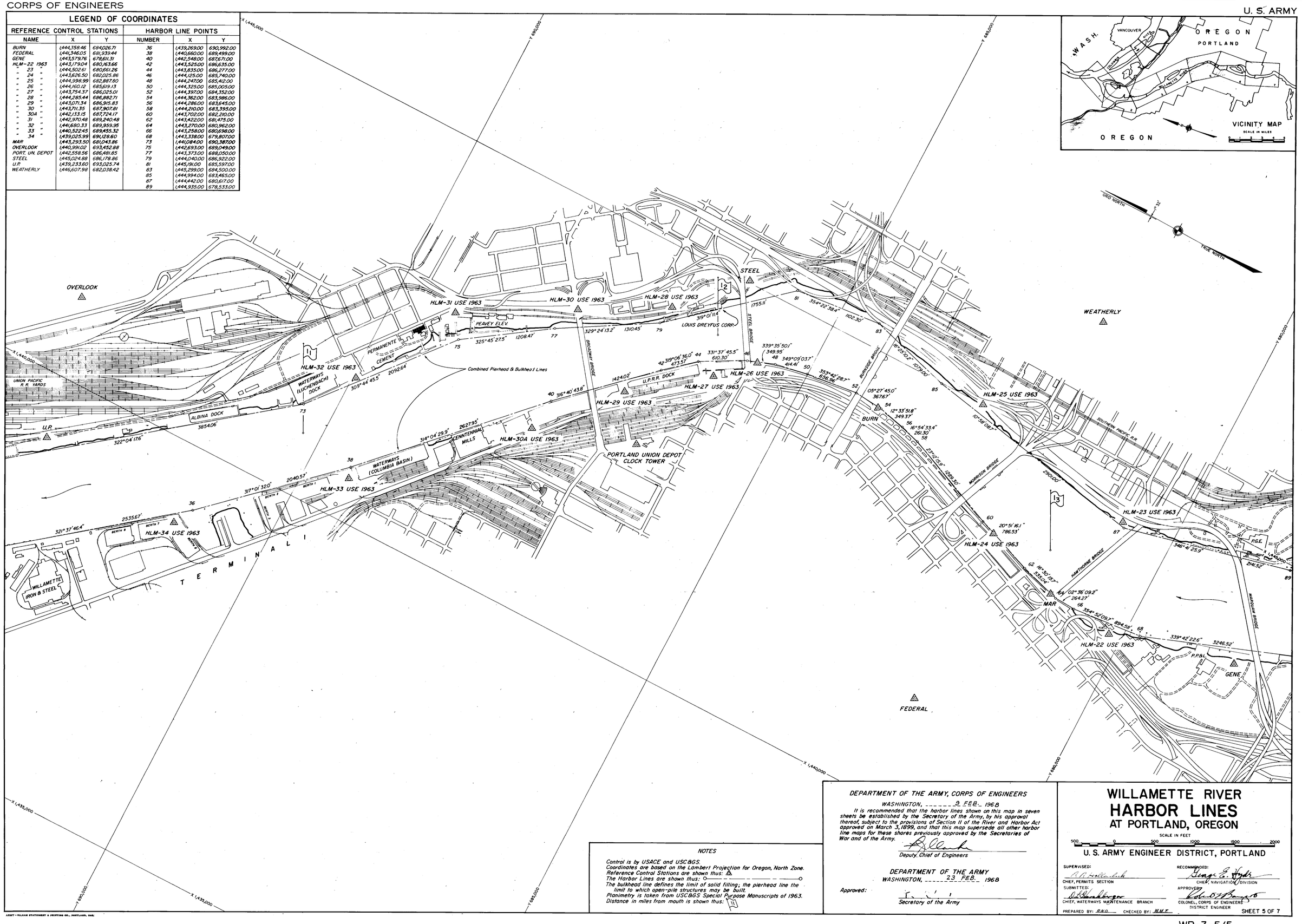
ARMY—ELMER STATIONERY & PRINTING CO., PORTLAND, ORE.

CORPS OF ENGINEERS

U. S. ARMY

LEGEND OF COORDINATES

REFERENCE CONTROL STATIONS			HARBOR LINE POINTS		
NAME	X	Y	NUMBER	X	Y
BURN	1,444,358.46	684,026.71	36	1,439,269.00	690,992.00
FEDERAL	1,441,346.05	681,939.44	38	1,440,660.00	689,499.00
GENE	1,443,579.76	678,611.31	40	1,442,548.00	687,671.00
HLM-22 1963	1,443,179.04	680,163.66	42	1,443,525.00	686,635.00
" 23 "	1,444,502.61	680,661.26	44	1,443,835.00	686,277.00
" 24 "	1,443,626.50	682,025.86	46	1,444,125.00	685,740.00
" 25 "	1,444,998.99	682,887.80	48	1,444,247.00	685,412.00
" 26 "	1,444,160.12	685,619.13	50	1,444,325.00	685,005.00
" 27 "	1,443,754.37	686,025.01	52	1,444,397.00	684,352.00
" 28 "	1,444,285.44	686,882.71	54	1,444,362.00	683,986.00
" 29 "	1,443,071.34	686,915.83	56	1,444,286.00	683,645.00
" 30 "	1,443,711.35	687,907.81	58	1,444,210.00	683,395.00
" 30A "	1,442,133.15	687,724.17	60	1,443,702.00	682,210.00
" 31 "	1,442,970.48	689,240.48	62	1,443,422.00	681,475.00
" 32 "	1,441,680.33	689,959.95	64	1,443,270.00	680,962.00
" 33 "	1,440,522.45	689,455.32	66	1,443,258.00	680,698.00
" 34 "	1,439,025.99	691,128.60	68	1,443,338.00	679,807.00
MAR	1,443,293.50	681,043.86	73	1,441,084.00	690,387.00
OVERLOOK	1,440,991.02	693,452.88	75	1,442,693.00	689,049.00
PORT. UN. DEPOT	1,442,558.56	686,481.85	77	1,443,373.00	688,050.00
STEEL	1,445,024.88	686,178.86	79	1,444,040.00	686,922.00
U.P.	1,439,233.60	693,025.74	81	1,445,191.00	685,597.00
WEATHERLY	1,446,607.98	682,038.42	83	1,445,299.00	684,500.00
			85	1,444,994.00	683,465.00
			87	1,444,442.00	680,617.00
			89	1,444,935.00	678,533.00



NOTES

Control is by USACE and USC&GS.
Coordinates are based on the Lambert Projection for Oregon, North Zone.
Reference Control Stations are shown thus: ◬
The Harbor Lines are shown thus: ○— — — — — —○
The bulkhead line defines the limit of solid filling; the pierhead line the limit to which open-pile structures may be built.
Planimetry is taken from USC&GS Special Purpose Manuscripts of 1963.
Distance in miles from mouth is shown thus: 11

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

WASHINGTON, 9 FEB. 1968

It is recommended that the harbor lines shown on this map in seven sheets be established by the Secretary of the Army, by his approval thereof, subject to the provisions of Section 11 of the River and Harbor Act approved on March 3, 1899, and that this map supersede all other harbor line maps for these shores previously approved by the Secretaries of War and of the Army.

Clarke
Deputy Chief of Engineers

DEPARTMENT OF THE ARMY

WASHINGTON, 23 FEB. 1968

Approved:

Secretary of the Army

WILLAMETTE RIVER
HARBOR LINES
AT PORTLAND, OREGON

SCALE IN FEET
500 0 500 1000 1500 2000

U. S. ARMY ENGINEER DISTRICT, PORTLAND

SUPERVISED: R. R. Hollenbeck
CHIEF, PERMITS SECTION

RECOMMENDED: George E. Hyde
CHIEF, NAVIGATION DIVISION

SUBMITTED: D. L. Hamberger
CHIEF, WATERWAYS MAINTENANCE BRANCH

APPROVED: Robert T. Bangert
COLONEL, CORPS OF ENGINEERS
DISTRICT ENGINEER

PREPARED BY: R.N.O. CHECKED BY: W.M.F.

SHEET 5 OF 7

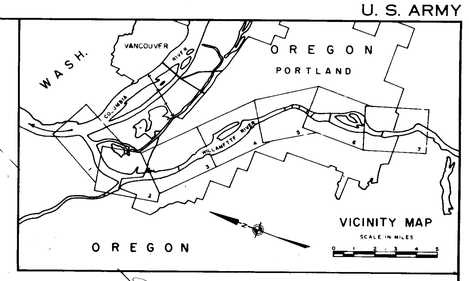
ARMY — KILHAM STATIONERY & PRINTING CO., PORTLAND, ORE.

CORPS OF ENGINEERS

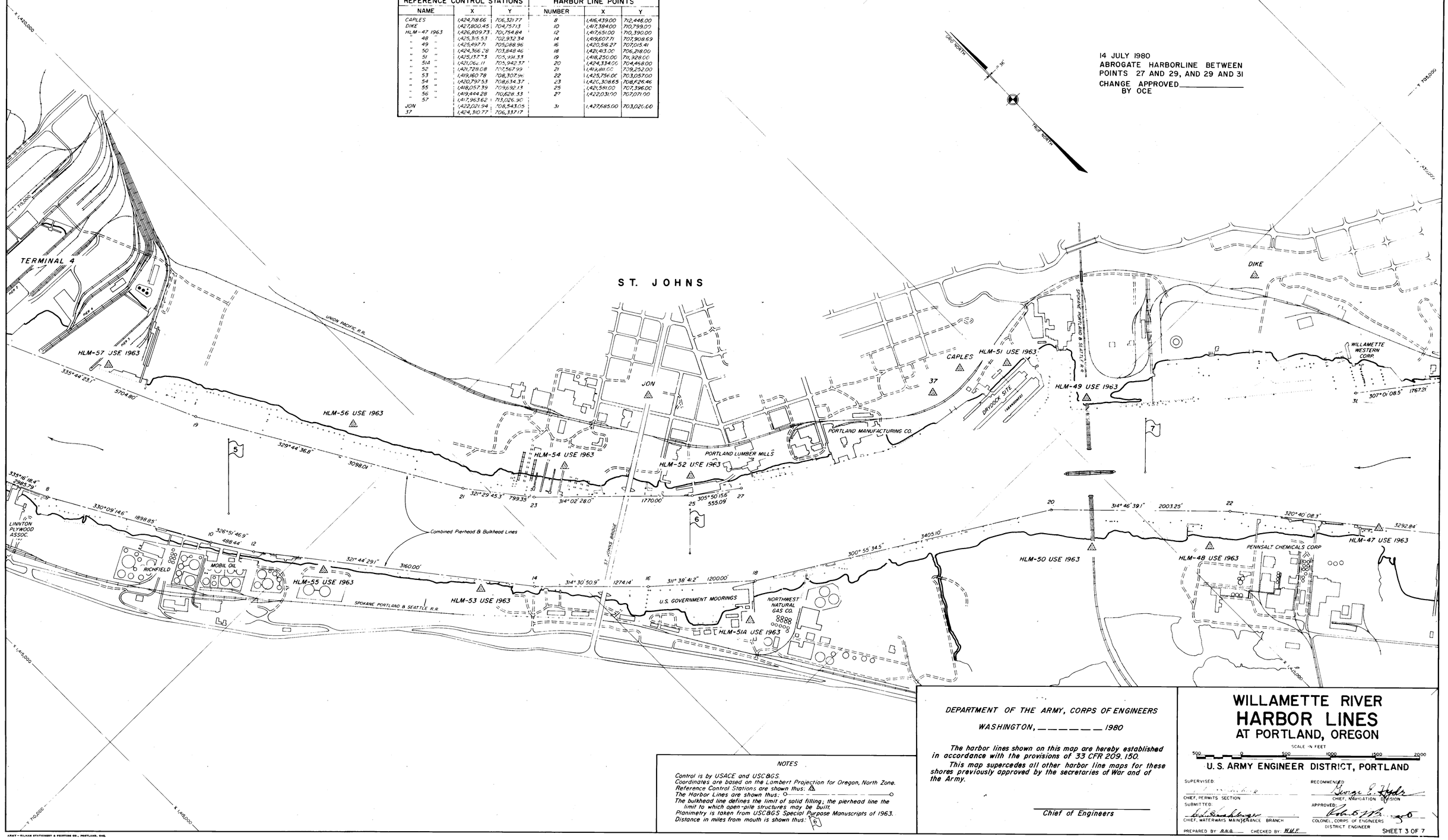
U. S. ARMY

LEGEND OF COORDINATES

REFERENCE CONTROL STATIONS			HARBOR LINE POINTS		
NAME	X	Y	NUMBER	X	Y
CAPLES	1,424,718.66	706,321.77	8	1,416,439.00	712,446.00
DIKE	1,427,800.45	704,757.13	10	1,417,384.00	710,799.00
HLM-47 1963	1,426,809.73	701,754.84	12	1,417,651.00	710,390.00
" 48 "	1,425,315.53	702,932.34	14	1,419,607.71	707,918.69
" 49 "	1,425,497.71	705,288.96	16	1,420,516.27	707,015.41
" 50 "	1,424,366.28	703,848.46	18	1,421,413.00	706,218.00
" 51 "	1,425,137.53	705,931.33	19	1,418,250.00	711,328.00
" 51A "	1,421,062.11	705,942.37	20	1,424,334.00	704,468.00
" 52 "	1,421,728.08	707,567.99	21	1,413,211.00	709,252.00
" 53 "	1,419,160.78	708,307.96	22	1,425,756.00	703,057.00
" 54 "	1,420,797.53	708,634.37	23	1,421,318.65	708,526.46
" 55 "	1,418,057.39	709,692.13	25	1,421,581.00	707,396.00
" 56 "	1,419,444.28	710,628.33	27	1,422,031.00	707,071.00
" 57 "	1,417,963.62	713,026.90			
JON	1,422,521.94	708,543.05	31	1,427,685.00	703,020.00
37	1,424,310.77	706,337.17			



14 JULY 1980
ABROGATE HARBORLINE BETWEEN POINTS 27 AND 29, AND 29 AND 31
CHANGE APPROVED_____
BY OCE



NOTES

Control is by USACE and USCB&GS.
Coordinates are based on the Lambert Projection for Oregon, North Zone.
Reference Control Stations are shown thus: △
The Harbor Lines are shown thus: O———O———O
The bulkhead line defines the limit of solid filling; the pierhead line the limit to which open-pile structures may be built.
Planimetry is taken from USC&GS Special Purpose Manuscripts of 1963.
Distance in miles from mouth is shown thus: 6

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

WASHINGTON, _____ 1980

The harbor lines shown on this map are hereby established in accordance with the provisions of 33 CFR 209.150.

This map supercedes all other harbor line maps for these shores previously approved by the secretaries of War and of the Army.

Chief of Engineers

WILLAMETTE RIVER
HARBOR LINES
AT PORTLAND, OREGON

SCALE IN FEET
500 0 500 1000 1500 2000

U. S. ARMY ENGINEER DISTRICT, PORTLAND

SUPERVISED: _____ CHIEF, PERMITS SECTION

SUBMITTED: _____ CHIEF, WATERWAYS MAINTENANCE BRANCH

RECOMMENDED: _____ CHIEF, NAVIGATION DIVISION

APPROVED: _____ COLONEL, CORPS OF ENGINEERS DISTRICT ENGINEER

PREPARED BY: R.N.Q. CHECKED BY: W.M.F.

SHEET 3 OF 7

WR-3-5/3A PLATE 2

ARNY-KILHAM STATIONERY & PRINTING CO., PORTLAND, ORE.

APPENDIX E

Example Area-Specific Institutional Control Plan Outline

Appendix E. Example Area-Specific Institutional Control Plan Outline

The following outline is intended to be used in conjunction with applicable U.S. Environmental Protection Agency (EPA) Guidance[1] and the Portland Harbor Superfund Site Programmatic Institutional Control Implementation and Assurance Plan (Programmatic IC Plan). Elements outlined in the Programmatic IC Plan are to be included in addition to the items shown below.

1 Introduction

- Entity that prepared the area-specific institutional control (IC) plan
- Name and location of site requiring ICs (including any site aliases)
- Agency responsible for IC oversight

2 Site Details

2.1 Site Description

- Site identification: the name of the site and any site descriptors
- Location: the parcel number(s), coordinates, and/or street address of the site.
- Site area and affected resources:
  - Size (e.g., in acres) of the remedial area
  - Area or volume of each medium that contains contamination at concentrations requiring an IC. Provide this information separately for in-water and riverbank areas.
  - Description of necessary restrictions designed to help ensure protectiveness.

2.2 Brief Site History

- Previous site uses: a brief description and history of previous site operations and land uses
- Contaminants of concern for each contaminated medium
- Risk exposure pathways
- Response action summary: a summary of all response actions already conducted or planned in the future at the site, including the implementation status of ICs
- Cleanup objectives as defined in the Portland Harbor Superfund Site Record of Decision (ROD)
- Substantive use restrictions identified in the ROD
- Current and reasonably anticipated future land use

[1] Please also refer to EPA guidance: *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites.* OSWER 9200.0-77, EPA-540-R-09-002. U.S. Environmental Protection Agency (EPA) (2012).

2.3 Property Information and Institutional Control Stakeholder Contacts

- Parcel ownership/occupancy information for each impacted parcel and current lessees/sub-lessees.
- Property interest and resource ownership: identity of any recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights).
- Contact information for responsible parties and other stakeholders
- Contact information of relevant governmental organizations, such as Tribal, state, and/or local governments, or health agencies
- Other relevant stakeholders: Persons or organizations that have IC responsibilities, are potentially impacted by their use, or are otherwise interested in their status (e.g., community organizations).

2.4 Accurate Mapping of Residual Contamination, IC Boundaries, and Other Site Features[2]

- Location of contamination as defined by Remedial Action Level exceedances
- Location of impacted parcels with the corresponding parcel or tax identification number
- Location of engineering controls that may require ICs
- Location of mitigation areas
- Location of restricted areas: the planned and/or implemented IC(s) selected in the decision document(s) that are intended to address the residual risks posed by any contaminated media and/or protect the engineering controls
- Other relevant features, such as environmentally sensitive areas (e.g., wetlands), underlying zoning, or existing infrastructure
- Refer to Information Management Plan for data requirements as well as agency specific requirements (e.g., Regulated Navigation Areas (RNAs), Marine Board Boating Regulations, Oregon 811 file submittals)

3 Key Elements for All Planned/Implemented Institutional Controls

3.1 General Elements

- This section provides a description of the ICs to be utilized by area (in-water and riverbanks). Performing party describes the IC layering to be utilized, and address items listed in Sections 6.2 and 6.3 of the Programmatic IC Plan. In addition to other controls proposed, each performing party must include Oregon 811 One-Call notification and use of the IC Registry as selected ICs.
- Instrument name and type
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Docket number of the remedial action order
- Contact information for the entity responsible for implementation

[2] It may be appropriate to include a disclaimer on all maps that notes that the map itself and any boundary lines within the map are approximate and subject to change. While the map does not purport to be a survey, it may be used for informational purposes regarding EPA's response actions at the site and is not intended for any other purpose.

- Implementation event and date: a schedule of events that are intended to effectuate implementation of the IC (e.g., recording of a covenant with the County Register of Deeds for a proprietary control) with planned or actual implementation dates and the location where the IC is recorded (if applicable)
- Substantive use restrictions achieved by this IC: the specific substantive use restrictions highlighted in the decision documents that are achieved by implementation of this specific IC.
- Legal description of restricted area(s)
- IC instrument lifespan—permanent or temporary. If temporary, the conditions for termination.
- Potential barriers to IC implementation—any legal, administrative, or procedural issues that may need to be addressed to implement the IC.

3.2 Elements Specific to Instrument Category

3.2.1 Proprietary Controls

- CERCLA Docket number of the relevant order
- Grantor
  - The person or entity conveying the property interest
  - A copy of the document provided to the Agency showing that the person or entity has title and authority to convey the proprietary control (a title commitment)
- Grantee:
  - The person or entity receiving the property interest, if required by the authorizing state statute
- Statement of intent: a statement of intent between the grantor and grantee if required by the authorizing state statute
- Signatories: persons or entities who have signed the proprietary control instrument other than the grantor and grantee
- Third party beneficiary: any person or entity who possesses a third party beneficiary right to enforce the proprietary control.
- Agency: the lead agency to the proprietary control
- Conflicting/coexisting property interests: any property interests, such as mortgages, liens, existing easements, existing covenants, uncooperative landowners who refuse to implement the proprietary control, inability to convey interest because of defunct property owners, or other interests
- Notice to conflicting property interest holders: any notices given to persons or entities that hold conflicting property interests.

3.2.2 Government Controls

- Government controls to be utilized, such as RNAs, Marine Board Boating Regulations, and/or Oregon 811 One-Call System.
- For use of RNAs and Marine Board Boating Regulations include the technical justification for the restrictions (anchoring, dragging, dredging, etc.) proposed.
- If other ICs are proposed beyond those outlined in the Programmatic IC Plan, include a summary of processes and authorities: as appropriate, the legal citation to the governmental control relied upon as an IC instrument (e.g., the relevant section of an ordinance, code, or regulation) and a description of applicable legal or administrative rules and procedures governing its application (e.g., building or water use permitting processes)

- State/local/tribal governmental department contact information for entities with authority and responsibility for the control

3.2.3 Enforcement and Permit Tools with Institutional Control Components

- Name and department of agency issuing enforcement document
- Parties legally bound by the enforcement document
- Summary of specific obligations in enforcement document: provisions that limit certain site activities or require the performance of specific activities.

3.2.4 Informational Devices

- General description: summary of the information conveyed within any informational devices and the anticipated behavioral modifications as a result.
- Tenant/Owner IC notification letters
- Riverbank signage
- Buoys and riverbank signage
- Fish Advisory signage (as applicable)
- IC Registry and Information Management System submittals
- Visual indicators
- Deed notices
- Approval of applicable property owners for the implementation of informational device (e.g. deed notices, signage)
- Informational device assurance: identify the entity responsible for ensuring that the informational device operates as planned (e.g., entity that ensures continued education, or maintain site registries).
- Population to be addressed: identify the group(s) that would benefit most from notification of residual contamination at a site (e.g., recreational fishermen in the case of fish advisory).
- Issues: describe any issues or evidence of breaches that may adversely impact the effective implementation or maintenance of the informational device (e.g., boaters ignoring waterway use restriction signage).

3.3 Institutional Control Relationship Matrix

To illustrate the properties of each IC identified for the sediment management area, an IC relationship matrix is to be included.

4 Institutional Control Maintenance Elements

The following elements should be addressed in the area-specific IC plan as well as items outlined in Sections 6.3 and 6.4 of the Programmatic IC Plan

4.1 Institutional Control Assurance Monitoring

The following IC assurance monitoring elements should be identified in an area-specific IC plan:

- Entity responsible for IC monitoring: contact information of the person(s) and/or organization responsible for monitoring ICs.
- Frequency of site inspections and IC monitoring: how often site inspections and/or IC monitoring events will be conducted.
- Activities that constitute monitoring: the discrete activities that would be considered IC monitoring (e.g., site inspections, title searches).
- Events and activities to be monitored: specific events that should be monitored, including changes in land use, property transfers, and breaches to implemented ICs[3]

4.2 Reporting

The area-specific IC plan describes the reporting process by including a number of items, such as:

- Annual IC Assurance Monitoring Reporting elements
- Entity responsible for reporting, IC Registry and IMS submissions: person or organization that should report IC information.
- Reporting procedures: how IC information will be provided and recorded, including media and format.
- Events and activities to be reported: specific events that should be reported, including changes in land use, property transfers, and breaches to implemented ICs.
- Confirm information is included on IC Registry

5 Institutional Control Enforcement Elements and Procedures

The area-specific IC plan may identify the following information:

- Enforcement triggering events: specific events that trigger enforcement actions to take place (e.g., breach/violation of IC, improper maintenance, failure to report, etc.)
- Responsible entity: the entity responsible for rectifying the breach/violation.
- Procedure and time frame: specific tasks and intended deadline for rectifying an IC breach/violation.
- Enforcing entity and notification procedures: the entity charged with enforcing each IC for each triggering event and the procedures for notifying that entity in the event of a breach
- Legal authority for enforcing ICs: the specific statutory or contractual authority (e.g., ODSL easement requirements, etc.) authorizing an entity to enforce implementation and maintenance of an IC.

[3] For purposes of this guidance, an IC breach means a violation of a use restriction or any other provision set forth within an IC instrument or any other situation that may interfere with the effectiveness of the IC.

- Contingency plans: the specific plans to prevent unacceptable exposures if ICs cannot be implemented or are otherwise not sufficient in protecting human health and the environment (e.g., need to modify the IC and/or amend the area-specific IC plan).
- Financial assurances: Outline anticipated costs for IC maintenance, enforcement and reporting throughout the life of the project. Financial assurance mechanisms are addressed in project operations and maintenance plans.

6 Institutional Control Modification and Termination Elements

The area-specific IC plan provides the following information on modification for each IC instrument including the following:

- Entity responsible for deciding whether modification may occur: the person or organization responsible for modifying ICs.
- Modification process: the process for modifying ICs and notifying the appropriate regulatory authorities if site conditions or other circumstances change.
- Conditions for termination: termination is unlikely since contamination will be left in place. If there are ICs which a performing party anticipates could be terminated (e.g., RNA), they outline those ICs, impacted media, and termination process.

7 Appendices

This section may provide copies and/or references to any relevant documents with information on ICs or that are discussed in the area-specific IC plan. For example, copies of proprietary control documents, deed notices, example annual informational letters, etc.