Question	EPA Response	ROD Excerpts and ROD Responsiveness Summary Reference(s)
Decision Tree Technology Selection and Flexibility		
Will the FS decision trees be used moving forward? Or were they superseded by the ROD decision tree (Figure 28)?	The ROD decision tree (ROD Appendix I, Figure 28) supersedes the FS decision trees.	ROD Sections 11 and 14, pages 85-87 and 103: A revised decision tree has been developed for the Selected Remedy that provides more clarity in how design data will influence design and construction (Figure 28 in Appendix I). ROD Section 14.2, pages 105-106: The final technology assignment will be identified in the remedial design, after collection of additional sampling data in all areas and segments of the river. The technology assignment will be identified as indicated in the decision tree in Figure 28 in Appendix I.
Where is the flexibility in the ROD decision tree to consider site-specific characteristics in assigning an appropriate technology?	Capping and/or dredging will be used in areas that exceed the RALs for the focused COCs or PTW thresholds (Appendix II, Table 21). The flexibilities related to capping and dredging design requirements are described in ROD Section 14.2.9. Site-specific conditions, such as but not limited to, navigation and land use information, whether structures are present, and what type of slope exists or may result from cleanup will inform technology selection and remedial design in the SMAs.	ROD Section 11, pages 85-87: In response to comments on the Proposed Plan, EPA has revised, simplified, and clarified the decision tree (Figure 28 in Appendix I) to show how design data will be incorporated into remedial design decisions. In addition, the decision tree is accompanied by specific design requirements, presented in Section 14.2.9. ROD Section 14.2, pages 105-106: The final technology assignment will be identified in the remedial design, after collection of additional sampling data in all areas and segments of the river. The technology assignment will be identified as indicated in the decision tree in Figure 28, Appendix 1. . . In addition, reasonably anticipated future navigation and land use information and other data will be collected at a much greater level of detail than information collected as part of the RI to support the Remedial Design. . . When applying the decision tree logic with newly gathered information, the design and constructed remedy will reflect the newer information. . . . After identifying appropriate cap or dredge technologies through this process, further modifications may be necessary during design to ensure the final constructed remedy is appropriate for actual Site conditions. ROD RS: Sections 2.8.4, 2.21.2, 3.1.53, and 4.1.7
Remedial Action Areas		
If the SMAs outlined in the ROD will be revised based on newly collected data, where will remediation occur?	As specified in the ROD and ROD decision tree (Appendix I, Figure 28), capping and/or dredging will occur in SMAs, which are areas exceeding the RALs for the focused COCs or the PTW thresholds (Appendix II, Table 21) as determined with the PDI/BL data, the relevant RI/FS data, and through updated sampling and analysis during RD. ENR will occur in areas of Swan Island Lagoon not addressed by dredging or capping, unless those areas have recovered naturally. MNR will be used to achieve the final cleanup levels outside of actively remediated areas. See Section 1.4 of *Remedial Design Guidelines and Considerations* for additional discussion on historical data replacement strategies.	ROD Section 14.2, pages 104-105: Areas to be capped or dredged will be defined by RALs for the Selected Remedy (Table 21, in Appendix II). RALs are contaminant-specific sediment concentrations of focused COCs used to define areas of more active cleanup and will reduce contaminant concentrations and risks more effectively than ENR or MNR from current Site-wide average concentrations.
If newly collected data indicate that SMAs are different than those presented in the ROD, is an ESD required to complete RD/RA?	An ESD would not be necessary because the ROD anticipated that the horizontal and vertical extent of the SMAs (defined by RAL and PTW exceedances) would be refined based on the PDI/BL data and additional data collected during RD.	ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111: Significant remedial design sampling to determine existing baseline levels of contamination and to design the cleanup will be conducted before construction begins. Baseline sampling will be done to identify existing conditions at the Site and will include a statistically valid data set for sediment, river banks, surface water, groundwater, pore water, and fish tissue samples. This will include a statistically valid number of samples and use of the 95% UCL for both surface and subsurface sediment concentrations in and near where contamination was identified in the RI/FS to determine SWAC(s) and for the purposes of applying the decision tree, as well as in proceeding with the design of active remediation throughout the Site. Data will be collected consistent with EPA-approved RI/FS decision rules on data collection (e.g., treatment of a non-detect value) and will be evaluated on spatial and temporal scales appropriate for the RAOs.
How many of the 1,774 acres that EPA is allowing to recover naturally are already below cleanup goals?	The 2018 Pre-RD Group PDI/BL data will provide an updated estimate of how many of the 1,774 acres designated for natural recovery are below ROD cleanup levels (Appendix II, Table 17). Future long-term monitoring data will be used to monitor the progress of the remedy toward achieving the RAOs established in the ROD.	ROD Section 14.2.7, *Long-Term Monitoring*, page 112: Data on contaminant levels will be used for multiple purposes, to determine if natural recovery is occurring as expected or if any additional actions are required to achieve the cleanup goals within the planned timeline. ROD RS: Sections 2.2.4, 2.10.1, 2.16.1 and 3.2.43
Sequencing of Site-Wide Remedial Design		
Do concerns regarding upstream to downstream migration of contaminants suggest that RD of downstream areas should occur after RD/RA of upstream areas?	Remedy sequencing will consider the potential for recontamination of remediated areas by upstream contamination or remedial activities. Areas most prone to potential recontamination are those with the highest degree of proximity and connectedness to un-remediated areas or remedial actions. For example, contaminant migration is more likely to affect neighboring downstream areas and less likely to affect areas across the river channel or of significant distance away. Generally, when areas are in close, direct communication, sequencing will be done in an upstream to downstream manner and/or prioritizing areas with the heaviest contamination. However, concurrent Site-wide RD will not be substantially affected by concerns regarding the migration and redeposition of contaminated sediments as many SMAs are significant distances from each other or located off the main stem of the river	ROD Section 14.2.11, page 116: Due to the size of the Site and the breadth of contamination, implementation of the Selected Remedy may need to be conducted in phases and/or work sequenced. To implement the remedy, EPA will consider, at a minimum, source control actions, recontamination potential, scope (size) of the actions across the Site, impacts to the river users and the community, seasonal weather impacts, fish windows, and implementation approaches the parties that agree to perform the cleanup may suggest. Sequencing of cleanup may consider factors such as potential impacts of upstream work on downstream areas, including but not limited to, the potential for resuspension of contaminants during construction, nature and extent of contamination, and integration of the cleanup actions into the overall Site remedy.

Question	EPA Response	ROD Excerpts and ROD Responsiveness Summary Reference(s)
	(where resuspended contaminants are subject to less downstream flow).	
Will areas of the Site exceeding RALs be able to delay RD until more contaminated upstream areas are successfully remediated?	EPA believes it is important for all areas to initiate the RD process and begin collecting the higher-density, site-specific remedial design data. While it is recognized that the dynamic character of the Willamette River may change surface sediment contaminant concentrations over time, it is less likely that the contamination at depth will change substantially. The completion of concurrent Site-wide RD will allow for effective sequencing of cap and dredge construction to minimize recontamination of these constructed areas.	See above response with excerpted text from ROD Section 14.2.11, page 116.
Will areas of the Site exceeding RALs be able to perform data gaps sampling to assess MNR without completing the full RD process?	As specified in the ROD and ROD decision tree (Appendix I, Figure 28), capping and/or dredging will occur in all areas exceeding RALs or PTW thresholds (Appendix II, Table 21). Generally, EPA expects these areas within the Site will need to undergo the full RD process. Natural recovery of surface sediment COCs will be monitored in the future by replicating the 2018 non-biased sediment sampling program.	ROD Section 14.2, pages 104-105: Areas to be capped or dredged will be defined by RALs for the Selected Remedy (Table 21, in Appendix II). RALs are contaminant-specific sediment concentrations of focused COCs used to define areas for more active cleanup and will reduce contaminant concentrations and risks more effectively than ENR or MNR from current Site-wide average concentrations.
Remedial Design Investigations		
Will the 2018 Pre-RD Group PDI/BL data be considered during RD?	Yes, the 2018 Pre-RD Group PDI/BL data will be considered in RD and should be used to inform additional site-specific data collection needs during the full RD process.	ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111: Significant remedial design sampling to determine existing baseline levels of contamination and to design the cleanup will be conducted before construction begins. Baseline sampling will be done to identify existing conditions at the Site and will include a statistically valid data set for sediment, river banks, surface water, groundwater, pore water, and fish tissue samples. This will include a statistically valid number of samples and use of the 95% UCL for both surface and subsurface sediment concentrations in and near where contamination was identified in the RI/FS to determine SWAC(s) and for the purposes of applying the decision tree, as well as in proceeding with the design of active remediation throughout the Site. Data will be collected consistent with EPA-approved RI/FS decision rules on data collection (e.g., treatment of a non-detect value) and will be evaluated on spatial and temporal scales appropriate for the RAOs.
Will additional characterization be needed beyond the 2018 Pre-RD Group sampling?	Data needs in any given area are a site-specific determination. For example, areas may need higher resolution sampling of the horizontal and vertical extent of contamination, and additional information on current and anticipated future land/waterway use, structures, habitat, and flood storage.	See above response with excerpted text from ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111.
How will RD incorporate the source control status of an adjacent upland property?	EPA is working with Oregon DEQ to ensure that issues with source control are addressed prior to and during the RD process. During design, EPA will require a source control sufficiency assessment to evaluate whether potential sources of recontamination have been adequately investigated and controlled or considered such that the remedial action can proceed. The sufficiency assessment will include an upland evaluation of pathways to the river through direct discharges, groundwater, river bank, and overwater to ensure that upland sources have been controlled. The assessment will also evaluate potential in-water sources of recontamination including the resuspension of bedded sediments.	ROD Section 9, page 55: It is EPA's expectations that DEQ's actions to address upland source control will adequately address contaminated soils, surface water, and especially groundwater contamination migrating to the river consistent with CERCLA. Response actions will address contamination within the in-river portion of the Site and associated river banks. There are known sources of contamination in the upland areas and known sources in locations in the downtown reach of the river (approximately RM 12 to RM 16.6). EPA is relying on the Oregon DEQ to use its authorities to address these sources. It is expected that controlling these sources will reduce or eliminate contamination in soil, groundwater, storm water, and surface water that migrates to the Willamette River.
Horizontal and Vertical Delineation of SMAs During Remedial Design		
The first decision box on Figure 28: Technology Application Decision Tree requires a determination of whether one is "Within SMA (See Note 1)". Note 1 states "Contamination is defined in three dimensions." In this context, what does it mean that contamination is defined in three dimensions?	The extent of sediment concentrations exceeding RALs for the ROD focused COCs must be defined laterally and vertically throughout the area of contamination. This three-dimensional information is used to define the extent of the SMAs and for application of the decision tree to guide the assignment of capping and dredging technologies. The PDI/BL data, along with future RD data and the relevant RI/FS data, will be used to define the lateral and vertical extent of contamination during design. Data gaps on the lateral and vertical extent of contamination will be addressed during site-specific design investigations.	See above response with excerpted text from ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111.
How will the vertical extent of contamination be determined?	The vertical extent of contamination will be determined by collecting subsurface sediment cores and sampling them in 1-foot intervals. Previously collected data and the conceptual site model will be used to determine the depth of sediment cores required. The 1-foot intervals will allow for finer resolution of the contamination that is present, which will reduce the uncertainty of the vertical extent of COCs above RALs, improving technology selection and design. The PDI/BL data contained 90 subsurface sediment cores in the SMAs that will be used during RD to inform the vertical extent of contamination.	ROD Section 14.2.9.2, page 114: Dredging designs will consider the lateral and vertical extent of contamination. The lateral extent of contamination will be based on the SMAs (RALs and PTW; see Section 14.2.7, Monitoring Requirements). The vertical extent of contamination will be based on the decision tree in Figure 28 in Appendix I.
If surface sediment concentrations are below RALs, but there are	Whether an area is within an SMA is dependent on the depth of RAL exceedances. Site-specific	See above response with excerpted text from ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111.

Question	EPA Response	ROD Excerpts and ROD Responsiveness Summary Reference(s)
RAL exceedances at depth, is one within an SMA or not?	conditions based on the PDI/BL data and additional data collected during RD will be considered to refine dredging and cap design. For a protective cleanup, this determination must consider the long-term potential for exposure to subsurface sediment contamination. See Section 1.4 of *Remedial Design Guidelines and Considerations* for additional discussion on buried contamination.	ROD RS: Sections 2.1.2, 2.13.2, 3.1.68 and 4.1.13
Is there a minimum depth of sediment with concentrations below RALs which would make exceedances at depth irrelevant? For example, if there are two feet of clean sediment over sediment exceeding RALs, is dredging still prescribed? Five feet?	Site-specific information from the PDI/BL data, the relevant RI/FS data, and additional information developed during RD will be required to determine whether it is reasonable to anticipate that contamination at depth will not be exposed in the future and therefore, can be left in place.	ROD Section 14.2.9.2, page 114: Dredging designs will consider the lateral and vertical extent of contamination. The lateral extent of contamination will be based on the SMAs (RALs and PTW; see Section 14.2.7, Monitoring Requirements). The vertical extent of contamination will be based on the decision tree in Figure 28 in Appendix I.
Remedial Design Issues		
Dredging may generate slope failure. Do the design requirements in Section 14.2.9 allow for consideration of the slope of the sediment bed in dredging design?	Slope stability analyses will need to be performed to address these site-specific conditions.	ROD Section 14.2.9.1, page 114: Cap design will consider the slope of the sediment bed. Sediment caps will be designed to remain in place. This may require removal of material [i.e., dredging] to lessen the slope angle or incorporation of buttresses at the base of the slope to maintain stability and promote establishing habitats. ROD RS: Sections 2.21.3, 3.1.53, and 3.1.71
Do the design requirements in Section 14.2.9 allow for consideration of whether an area is depositional in assigning an appropriate technology? Will deposition be considered in RD?	As specified in the ROD and ROD decision tree (Appendix I, Figure 28), capping and/or dredging will occur in all areas exceeding RALs or PTW thresholds (Appendix II, Table 21). However, sediment deposition as well as but not limited to impacts from propwash scour, extreme flood events, and wind- and vessel-generated waves will be considered during RD. These data will inform cap design and future cap monitoring.	ROD Section 14.2, *Post-ROD Data Gathering and Other Information Verification*, page 106: For purposes of the FS, several assumptions were made about what the Selected Remedy would look like in the river after applying the decision tree based on existing data. Post-ROD sampling will be conducted to support remedial design and to refine the CSM. This updated information will be used for design/construction. Post-ROD sampling will include, in addition to other relevant data, surface and subsurface sediment contaminant concentrations, surface water, sediment pore water and groundwater data, bathymetry, flood-rise modeling, fish/shellfish tissue, and NAPL delineation.
Do the design requirements in Section 14.2.9 allow for consideration of the presence of rock/cobble/bedrock in assigning an appropriate technology? Will the presence of hard substrate bottoms be considered in RD?	Physical characteristics of the sediment bed, including the presence of rock/cobble/bedrock, will be considered in technology selection and RD.	See above response with excerpted text from ROD Section 14.2, *Post-ROD Data Gathering and Other Information Verification*, page 106.
Do the design requirements in Section 14.2.9 allow for consideration of the impact of dredging on habitat areas?	As stated in ROD Section 14.2.9.1, additional requirements may be determined during RD and in coordination with NMFS and USFWS to comply with ARARs.	ROD Section 14.2.9.1, page 113: In habitat areas, currently defined by NMFS as those areas above -15 feet CRD, post-remedy surfaces will be maintained at their current depth and backfilled or capped with suitable habitat materials. ROD Section 14.2.9.2, *General Dredging, Residuals Management*, page 114: In the shallow region, residual management will consist of capping or backfilling to grade to prevent exposure above cleanup levels and to minimize adverse effects on in-river and riparian habitat, including the loss of shallow water habitat. ROD Section 14.2.9.2, *Water Quality Controls*, page 115: Water quality controls, including silt curtains and/or rigid containment (e.g., sheet pile wall enclosures) may be required to minimize releases to the water column associated with the presence of contaminated sediments, NAPL, debris, and other chemical or physical conditions to comply with water quality standards. Additional requirements may be determined during remedial design and in coordination with NMFS and USFWS to comply with ARARs. ROD Section 15.2.3, page 129: The Selected Remedy will be designed to avoid or minimize adverse impacts to aquatic resources and waters of the United States. ROD RS: Sections 2.8 (and subsections) and 2.13.1 provide clarifications on habitat questions.
The definition of structures in Figure 28 does not appear to be very flexible and is not particularly consistent with dock ownership and uses at various properties. How are such site-specific uses to be addressed given the ROD Figure 28 decision tree's lack of recognition of such issues?	Additional factors regarding site structures may be considered in the RD information, as appropriate. Current and future land uses, ownership, flood storage/rise, habitat creation, and the vertical extent of contamination all need to be considered in the RD.	ROD Figure 28 and Section 14.2, *Post-ROD Data Gathering and Other Information Verification*, page 106: In addition, reasonably anticipated future navigation and land use information and other data will be collected at a much greater level of detail than information collected as part of the RI to support the Remedial Design. As part of the FS, observed current uses were assumed to continue in the river. During the public comment period, some parties identified that the potential future use(s) of a part of the river may be other than current uses or EPA's assumptions. To ensure that the correct reasonably anticipated future uses are used for the remedial design, these assumptions will be verified and will be altered, as appropriate. For example, eliminating the need for a more expensive dredge and armored cap remedy if a significant area will no longer to be used for marine terminal purposes.
Capping without Dredging		
Under what scenario would capping without pre-dredging be allowed in the intermediate depth region?	Current and future land uses, flood storage/rise, habitat creation, slope stability, and the vertical extent of contamination all need to be considered to determine whether capping without pre-dredging will be allowed in the intermediate depth region.	ROD Section 14.2, *Post-ROD Data Gathering and Other Information Verification*, page 106: During the public comment period, some parties identified that the potential future use(s) of a part of the river may be other than current uses or EPA's assumptions. To ensure that the correct reasonably anticipated future uses are used for the remedial design, these assumptions will be altered, as appropriate. For example, eliminating the need for a more

Question	EPA Response	ROD Excerpts and ROD Responsiveness Summary Reference(s)
		expensive dredge and armored cap remedy if a significant area will no longer be used for marine terminal purposes. ROD Section 14.2.9.1, Flood Rise and Navigation, page 114: Caps will be designed to avoid adverse impacts to the floodway, consistent with the Executive Orders for Floodplain Management (Executive Orders 11988 and 13690) and FEMA regulations. Additionally, caps will be designed to avoid adverse impacts to current and future navigation based on expected cap thickness, authorized channel depth, and appropriate buffer. This may limit cap construction in some locations or require removal of contaminated sediment prior to cap placement.
ROD Section 14.2.3 states that, "the elevation of the top of the cap or residual layer will be no higher than the pre-design elevation" which appears to preclude the option of increasing the valuable shallow water habitat as part of remedial action. Is that EPA's intent?	It is not EPA's intent to limit shallow water habitat; however, avoiding or minimizing impacts to the floodway need to be considered in conjunction with habitat creation. Furthermore, site-specific cap designs will require review by NMFS, USFWS, and others and may be modified to improve aquatic habitat.	ROD Section 14.2.3, page 108: Under any scenario, the elevation of the top of the cap or residual layer will be no higher than the pre-design elevation to avoid loss of submerged aquatic habitat, preserve slope stability, and negate adverse impacts to the floodway. If appropriate to protect sensitive species, a habitat layer will be incorporated into the constructed remedy. ROD RS: Sections 2.8 (and subsections) and 2.13.1 for clarifications on habitat questions.
Alternative/Other Remedial Technologies		
Why are alternative/other remedial technologies, such as in-situ treatment and ENR, not included for potential use within SMAs on the Technology Application Decision Tree (Figure 28)?	Capping and dredging were determined during the FS to achieve the greatest and most permanent risk reductions for the most contaminated sediments, which are in SMAs. Therefore, the use of alternative remedial technologies can only be applied in areas below RALs and PTW thresholds.	ROD Section 14.1, page 103: The Selected Remedy is protective of human health, complies with ARARs, and provides the best balance of tradeoffs among the balancing criteria, including addressing many of the Tribal community's concerns as well as community concerns raised through public comments. It reduces risk within a reasonable time frame, is practicable, provides for long-term reliability of the remedy, and minimizes reliance on institutional controls. It will achieve substantial risk reduction by dredging and capping areas with the most contaminated sediments, reduce remaining risks to the extent practicable through ENR and MNR, and manage remaining risks to human health through institutional controls.
If supported by available data, will EPA accept alternate technologies specified in the ROD design requirements for areas exceeding RALs but below PTW thresholds? If there is a lot of deposition, can one make the demonstration that partial dredge and cap, ENR, or MNR is appropriate for an area exceeding RALs – would this be acceptable?	As specified in the ROD and ROD decision tree (Appendix I, Figure 28), capping and/or dredging will occur in all areas exceeding RALs or PTW thresholds (Appendix II, Table 21). However, alternate technologies such as in-situ treatment and ENR may be considered for use in areas below RALs on a site-specific basis.	ROD Section 14.2, pages 104-105: Areas to be capped or dredged will be defined by RALs for the Selected Remedy (Table 21, in Appendix II). RALs are contaminant-specific sediment concentrations of focused COCs used to define areas of more active cleanup and will reduce contaminant concentrations and risks more effectively than ENR or MNR from current Site-wide average concentrations. ROD RS: Sections 3.1.3, 3.1.33, 3.1.66, 3.1.67, 3.2.2, 3.2.5, 3.5.2 for clarifications on ENR and MNR application.
River Banks		
How is the top of bank defined (elevation, abrupt change in slope angle, other)?	Defining the top of the bank is site-specific and is visually determined based on the angle of the slope towards the river. Additional guidance will be provided in a river bank guidance document that EPA is developing.	ROD Section 14.2.5, page 109: River banks are defined as areas from top of bank down to the river that may be contaminated along the shoreline next to contaminated in-river shallow areas. Remediation of contaminated river banks is included in the Selected Remedy where it is determined that it should be conducted in conjunction with the in-river actions and to protect the remedy (Figure 9 in Appendix I and Table 21 in Appendix II). Other river banks may be included in the remedial action if contamination contiguous with contaminated river sediment is found during remedial design sampling. ROD Section 14.2.9.5, page 116: In an SMA, contaminated river banks will be remediated through this cleanup where they are contiguous with in-river contamination or where they pose a risk of recontamination to the Selected Remedy. ROD: Sections 14.4, 15.1.3, 15.2.3 detail additional river bank requirements for the Selected Remedy. ROD RS: Sections 2.26.2, 3.1.15, and 4.2.10
Does the ROD allow flexibility for river bank capping with materials other than vegetation with beach mix?	Selection of river bank cap materials will be based on site-specific considerations addressed under design. River bank source control and containment to meet the RAOs will be considered on a site-specific basis during RD.	ROD Section 14.2.5, page 109: Engineered caps or vegetation with beach mix will be placed as the final cover based on area-specific designs, which will account for appropriate slope according to the programmatic or site-specific Biological Opinion, as appropriate. See above response with excerpted text from the following: • ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111 • ROD Section 14.2.9.5, page 116 ROD: Sections 14.4, 15.1.3, 15.2.3 detail additional river bank requirements for the Selected Remedy. ROD RS: Sections 2.26.2, 3.1.15 and 4.2.10
Does the ROD allow for flexibility to consider the net benefit to overall habitat and function resulting from combined river bank remediation and shallow region in-water remediation? For example, would EPA consider relaxing the shallow region	The question is hypothetical and needs to be supported by site-specific design data. Habitat elements of the design will be determined in coordination with NMFS, USFWS, and others. Based on site-specific factors, it may not be possible to obtain the optimal river bank. However, it might be possible to fill in some areas without affecting the floodway. Primary concerns include not affecting or	ROD Section 14.2.9.5, page 116: In an SMA, contaminated river banks will be remediated through this cleanup where they are contiguous with in-river contamination or where they pose a risk of recontamination to the Selected Remedy. These cleanups will be conducted in a manner that is compatible with the Selected Remedy and minimizes adverse impacts to riparian habitat including minimizing slope angle and the use of hardened banks to prevent erosion.

Question	EPA Response	ROD Excerpts and ROD Responsiveness Summary Reference(s)
requirement that "the elevation of the top of the cap or residual layer will be no higher than the pre-design elevation" if concurrent river bank remediation would result in a net benefit to habitat?	mitigating impacts to the floodway due to habitat creation.	ROD: Section 14.4, page 118: Implementation of the Selected Remedy will result in improvements in the overall river habitat, with positive impacts on all species that use the river, including freshwater rearing sites and migration corridors that are essential to the conservation of the listed salmonid species and species that have a role in Tribal lifestyles. ROD: Section 15.2.3, page 128: In addition, avoidances and minimization measures would be implemented on Site to restore substrate, slope, and natural cover to the extent possible to maintain habitats and functions that would be altered during implementation. Compensatory mitigation would be required to replace lost habitats and functions such that there would be "no net loss" of aquatic resource functions. ROD RS: Sections 2.26.2, 3.1.15 and 4.2.10
Is river bank remediation required throughout all river bank areas shown on Figure 9?	The need for river bank remediation will depend on design sampling data and site-specific conditions (e.g., nature of the bank, land and waterway use, etc.). Additional guidance will be provided in a river bank guidance document that EPA is developing.	ROD Section 14.2, *Post-ROD Data Gathering and Other Information Verification*, page 106: Post-ROD sampling will be conducted to support remedial design and to refine the CSM. This updated information will be used for design/construction. Post-ROD sampling will include, in addition to other relevant data, surface and subsurface sediment contaminant concentrations, surface water, sediment pore water and groundwater data, bathymetry, flood-rise modeling, fish/shellfish tissue, and NAPL delineation. See above response with excerpted text from the following: • ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111 • ROD Section 14.2.9.5, page 116 ROD: Sections 14.4, 15.1.3, 15.2.3 detail additional river bank requirements for the Selected Remedy. ROD RS: Sections 2.26.2, 3.1.15 and 4.2.10
Would river bank remediation be required if source control measures such as erosion and storm water control are in place?	This is a hypothetical question that depends on what is developed and presented in the design package for a specific area. The status of source control measures to address bank erosion and stormwater discharges relative to the RAOs will be considered during design. During design, EPA will require a source control sufficiency assessment to evaluate whether potential sources of recontamination have been adequately investigated and controlled or considered such that the remedial action can proceed.	See above response with excerpted text from the following: • ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111 • ROD Section 14.2.9.5, page 116 ROD: Sections 14.4, 15.1.3, 15.2.3 detail additional river bank requirements for the Selected Remedy. ROD RS: Sections 2.26.2, 3.1.15 and 4.2.10.
Can additional sampling and analysis (e.g., chemical testing, slope stability, etc.) be performed to modify the areas targeted for river bank remediation on ROD Figure 9?	Additional sampling and analysis are a component of design and would provide information as part of an overall design package that could possibly modify the area targeted for remediation on ROD Figure 9. Additional guidance will be provided in a river bank guidance document that EPA is developing.	See above response with excerpted text from the following: • ROD Section 14.2.7, *Baseline and Remedial Design Data Collection*, page 111 • ROD Section 14.2.9.5, page 116 ROD: Sections 14.4, 15.1.3, 15.2.3 detail additional river bank requirements for the Selected Remedy. ROD RS: Sections 2.26.2, 3.1.15 and 4.2.10.
Remedial Design Administrative Structure		
Is RD directly coupled with RA through a consent agreement with EPA?	Under the Superfund statute, when parties perform RA it must be done under a judicial consent decree or unilateral administrative order. RD can be done under one of these mechanisms also or under an administrative settlement and order on consent. Generally, EPA likes to combine RD and RA under a consent decree.	Information on this topic is not covered in the ROD or ROD RS.
What is the agreement/consent structure that EPA is seeking to perform RD?	EPA has agreed to postpone issuance of Special Notice Letters to initiate Consent Decree negotiations to allow for completion of the allocation process. However, in the interim, EPA is looking for RD to move forward Site-wide through administrative settlements. Currently, RD is occurring under administrative settlements and orders on consent at the GASCO, River Mile 11E, and Port of Portland Terminal 4 Project Areas. EPA would like to be moving RD forward on all the SMA areas.	Information on this topic is not covered in the ROD or ROD RS.

Notes:

ARAR – applicable or relevant and appropriate requirements
COC – contaminant of concern
CRD – Columbia River datum
CSM – conceptual site model
DEQ – Oregon Department of Environmental Quality
ENR – enhanced natural recovery
EPA – United States Environmental Protection Agency
ESD – Explanation of Significant Differences
FS – feasibility study
MNR – monitored natural recovery
NAPL – non-aqueous phase liquid
NMFS – National Marine Fisheries Service
ODFW – Oregon Department of Fish and Wildlife
PDI/BL – pre-remedial design investigation and baseline sampling
PRP – potentially responsible party
PTW – principal threat waste
RA – remedial action
RAL – remedial action levels
RAO – remedial action objective
RD – remedial design
RI – remedial investigation
RI/FS – remedial investigation and feasibility study
RM – river mile
ROD – Portland Harbor Superfund Site Record of Decision
RS – responsiveness summary
Site – Portland Harbor Superfund Site
SMA – sediment management area
SOW – statement of work
SWAC – surface area weighted average concentration
UCL – upper confidence limit
USFWS – United States Fish and Wildlife Service