Categories of Comments:

"Agree" – Agree that we can address the comment in the draft FS in a manner mostly consistent with the apparent intent of the comment.
"Disagree" – Technically disagree with the comment, and LWG recommends that the draft FS not reflect the comment.
"Schedule" – Complying with the comment would cause significant new work or rework of existing analyses and therefore impacts the schedule
"Potential Inconsistency" – The current comment is potentially inconsistent with previous EPA comments or understandings, as best we can understand the comments.
Green highlighting in the Response column indicates a comment that is requesting additional content for the FS Key Elements Check-in with EPA.

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No.	Review Document	Page/ Figure/Table	Comment Text	Category	Response
1	Mitigation Determination Approach	General	1. The LWG should not provide a draft a Biological Assessment (BA) with the draft FS. The draft FS should identify ESA species and critical habitat found within the Superfund Site and well known and likely conservation measures, including environmental work windows, that the cleanup alternatives may need to incorporate in order to assess them relative to effectiveness, implementability, and costs. The LWG should be reviewing BA's from other projects and needs to provide in the draft FS a list of these types of conservation measures with a reference list and conduct associated costs for potential conservation measures associated with the remedial alternatives.	Potential Inconsistency	The LWG has been proceeding with the understanding from the July 15, 2010 meeting that we agreed to a programmatic approach to ESA compliance although, as described below in the response to comment 3, the LWG will eliminate references to "programmatic" to avoid the confusion EPA describes in comment 3. A draft BA would be written by the LWG based on the information that was known at the time of the FS. EPA would then take the document forward through the proposed plan and ROD, revising it as more specific information was known, specifically as EPA identified its preferred remedy. Lori Cora indicated that EPA's goal would be to have a programmatic BiOp from NOAA shortly after issuance of the ROD. Despite this previous agreement, the LWG will agree to not produce the biological assessment as an attachment to the FS, however the LWG will produce a draft site-wide BA as a stand alone document, the conclusions of which will be incorporated into the FS. Specifically, that draft BA will serve as the backup for conclusions regarding avoidance and minimization measures built into the alternatives and ESA compliance, as will be discussed in the FS.
2	Mitigation Determination Approach	General	EPA has not requested nor is it consistent with Section 7 consultation procedures for specific projects to produce a "programmatic" biological assessment on all alternatives in the FS. The LWG has indicated that it will do a 404(b)(1) analysis on all alternatives, which is appropriate given the requirements of 404(b)(1) and the broader scope of the CWA. EPA's initial consultation with the Services will be on the site-wide preferred alternative. Thus the LWG should prepare a draft BA which is focused on analyzing whether the preferred alternative will adversely affect the threatened species or critical habitat or whether the action will jeopardize the continued existence or recovery of the species. This sequence is consistent with the ROD process and timeline we have discussed which indicates a draft BA, which will include only content known at the time (e.g., list of species, project description, description of project area, description of species and habitat, inventories and surveys, and supporting references) should be provided after submission of the draft FS.	Agree	As mentioned in response to general comment #1, the LWG will agree to not produce a Draft BA as an attachment to the FS, however the LWG will produce a draft site-wide BA as a stand alone document, which will include only content known at the time - e.g., list of species, project description, description of project area, description of species and habitat, inventories and surveys, and supporting references, as well as known and likely conservation measures. This document will be provided concurrent with submission of the draft FS. Also, for clarification, the LWG was not planning on assessing all alternatives in the BA document, but rather the technologies that are included in the alternatives. As such, the Draft site-wide BA will not assess the 10 comprehensive alternatives, but rather the technologies that are included in the comprehensive alternatives and any associated CWA 404(b)(1) mitigation such that the preferred alternative could be readily assessed once selected by EPA.

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3	Mitigation Determination Approach	General	The term "programmatic" is not appropriate in this context and should not be used since it has distinct meaning for EPA in conducting ESA and 404(b)(1) consultations for the implementation of our programs rather than specific projects. EPA's initial consultation with the Services will be on the site-wide preferred alternative. This is a project specific action and this document and the draft FS needs to present it in that manner. It is acceptable to use the term site-wide BA or 404(b)(1) analysis to distinguish the scope of the initial analysis from potential future analysis that may be at a different level or scope.	Agree	References to "programmatic" documents will be modified.
4	Mitigation Determination Approach	General	CWA compliance, particularly avoiding or minimizing impacts and compensating for unavoidable loss of aquatic environment is not the same or interchangeable with the need to assess affects of a federal action on threatened or endangered species under ESA. Although there is overlap in information and analysis needed for the CWA and ESA, ESA consultation will be focused on the preferred alternative, not all possible alternatives that are considered. Thus, the BA will follow in time and have a different scope and focus than the CWA analysis (both 401 and 404) and generally should only take from it what may be relevant to evaluating the impacts (adverse or beneficial) to threatened or endangered species or their designated critical habitat from the proposed federal action. On the other hand, CWA 404(b)(1) addresses aquatic impacts from the cleanup alternatives of a wider scope than ESA. The LWG needs to understand that compliance with 404 is not synonymous with ESA. The first step is for the FS to analyze the different alternatives for impacts each may cause and what types of measures, BMPs, and other activities are appropriate and practical to avoid or minimize such impacts to waters of the US, both temporal and long-term. Then the FS needs to preliminarily analyze what unavoidable loss will occur that will require compensatory mitigation and then estimate the scope and costs of such compensatory mitigation appropriate for a FS level analysis. All three steps have cost implications but also may have relevance to one or more of the seven balancing criteria, e.g.,short-term, long-term impacts, and implementability in the FS comparative analysis process. Also under CWA analysis, whether 404(b)(1) or 401, the FS will need to analyze known best management practices, containment, and other measures that dredging and capping actions will need to incorporate to avoid or minimize the impacts from resuspension to reasonably assure the actions will achieve water quality standards and reduce short-term impacts. A majority of the CWA analysis will be relevant in articulating the conservation measures to be employed to reduce adverse affects to the listed species in the project-specific BA.	Agree	The LWG agrees with and understands the differences between CWA and ESA. There was nothing in the memo that intended to indicate that 404(b)(1) compliance was interchangeable with the ESA analysis. The purpose of our statement was to indicate that under federal regulations, it is acceptable to apply CWA compensatory mitigation as a conservation measure to minimize impacts to ESA species. Generally agree with other portions of this comment. Also, for clarification, the Draft site-wide BA will not assess each comprehensive alternative, but rather the technologies that are included in the comprehensive alternatives and any associated CWA 404(b)(1) mitigation such that the preferred alternative could be readily assessed once selected by EPA.

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5	Mitigation Determination Approach		The mitigation approach needs to include a preference for on-site (i.e., within the Superfund Site) work and projects to the extent practicable before looking to off-site mitigation. This memo does not lay out a path where value can be ascribed to on-site projects, which may have higher value to EPA and the services with regard to closer proximity of the mitigation to where the impacts occur when feasible. In this case, off-site work may require more acreage to be of equal compensatory value to acreage within the Superfund site area. Higher ratios of needed compensation for off-site mitigation compared to amount of impacted environment is consistent with Subpart J of the 404(b)(1) regulations, although it allows the flexibility to consider off-site and out-of-kind mitigation when the mitigation proposed is unlikely to compensate for impacts or is incompatible with existing uses, or where a certain habitat type has been disproportionally lost over time in the watershed. The draft FS should recognize the higher value of on-site mitigation projects and balance that against the additional cost. The LWG should present a process to evaluate actual mitigation costs for the draft FS at the next FS check-in meeting.	Disagree/Potential Schedule	This comment is inconsistent with the 2008 Clean Water Act Compensatory Mitigation Guidelines, which states a desire to select a mitigation project type and location using a watershed approach with a preference for the following hierarchy: a. Mitigation banking b. In lieu of fee c. Permittee-responsible—watershed approach d. Permittee-responsible—on-site, in-kind e. Permittee-responsible—off-site, out-of-kind Although there are no currently approved applicable mitigation banks or in-lieu fee programs, the draft 404(b)(1) Analysis and Draft BA will describe these to note that they could become available prior to remedial action activity. To account for a higher mitigation ratio for off-site projects would cause a schedule delay. Also, the comment adds a new topic to the check in.
1	Mitigation Determination Approach	Introduction.	The introduction indicates that the costs of mitigation will be considered "in addition to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) nine FS evaluation criteria." These costs should be included as part of the direct costs of the remedial alternatives in the FS.	Agree	Agreed, LWG will revise the introduction to be consistent with costing approach, which does include mitigation as a direct construction cost.
2	Mitigation Determination Approach	Page 2, pp 1, last sentence.	The location of the mitigation and conservation measures taken will be important to determine both the level of affects the action may have on ESA species and whether survival and recovery of ESA listed species will be supported. This statement implies that actions taken anywhere in the Lower Willamette watershed, which is not defined in this document, will support ESA listed species. This may not be accurate and should not be assumed. Moreover, to meet CWA requirements and EPA's goal for maximizing mitigation as close to where the impacts are incurred, mitigation within the cleanup area should be prioritized.	Disagree. Schedule.	See response to General Comment #5 above. For clarification, the LWG is proposing CWA compensatory mitigation in the area of overlap of the 4th level watershed and designated critical habitat areas for UWR and LCR species. In this way, the ESA listed species that may be directly impacted by the remedial activities will benefit from the associated mitigation actions. If EPA does not agree to this clarification, then this would be a disagreement that would impact the schedule.
3	Mitigation Determination Approach	Page 1, pp 4.	This paragraph should be deleted. See general comment 2 above.	Agree	References to "programmatic" documents will be modified. Also, for clarification, the Draft Site-wide BA will not assess the 10 comprehensive alternatives, but rather the technologies that are included in the comprehensive alternatives and any associated CWA 404(b)(1) mitigation such that the preferred alternative could be readily assessed once selected by EPA.
4	Mitigation Determination Approach	Page 2, pp 1, sentence 2.	An in-lieu of fee option will not work for ESA mitigation unless the money goes towards a specific project that NMFS has approved.	Agree	Noted. The statement was related to CWA compensatory mitigation, which as indicated in the text, may be suitable conservation measures for ESA. There is no assumption stated in the text that any or all compensatory mitigation under CWA would be suitable.

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5	Mitigation Determination Approach	Page 2, pp 2.	The Section 7 Biological Assessment is prepared for the EPA action and will analyze whether any take is likely to occur. The Biological Opinion is prepared by the Services and will determine whether any listed species is jeopardized or critical habitat is adversely modified by the proposed actions. While it is true that there are actions that can be taken to reduce the likelihood of these determinations, until they are presented all together in a proposed action, a de facto statement as to forecasting these outcomes cannot be made. This language needs to be stricken from the document.	Agree	Noted. Statement indicates that the conservation measures may reduce impact and allow the agencies to reach a conclusion "if appropriate". No forecasting of outcomes was intended. In addition, the CWA compensatory mitigation will be part of the proposed action in the Draft Site-wide BA.
6	Mitigation Determination Approach	Page 2, pp 3, sentence 2.	In addition to evaluating the effects of the action on the aquatic environment, the effects to individual ESA species (including their prey and predators) need to be evaluated as well.	Agree	Agreed. This statement will be revised "These documents will evaluate the impacts to the aquatic environment, and for the BA, to individual ESA species, resulting from the remedial technologies that are proposed in the draft FS."
7	Mitigation Determination Approach	Page 2, pp 3, sentence 5.	This approach needs approval by the Services before being conducted for the BA.	Disagree. Schedule.	Need clarification on this comment. The sentence listed in the comment refers to the critical habitat evaluation. LWG is proposing to evaluate critical habitat relative to baseline conditions, which is standard procedure for all BAs. It will be doing this based on information that is known at this time, and doing it in the context of the draft BA, with the final to be issued by EPA once it has selected a preferred alternative. Not sure which approach needs approval? It is the LWG's understanding that the consulting agency (NMFS) reviews and considers information that is provided in the BA by the Action Agency (EPA) and determines if that information will be used in the Biological Opinion or not and that there is no approval process for an evaluation approach to be used in a BA. Any needed approvals would have impacts on the schedule.
8	Mitigation Determination Approach	Page 2, pp 3, sentence 6.	The draft FS mitigation costs and conservation measure costs, as well as the 404(b)(1) analysis and BA, should only discuss the affects of the proposed action under CERCLA authority (including removal actions), not separate non-CERCLA actions already taken or taken under other authority.	Agree	Agreed, sentence included to recognize the fact that critical habitat baseline includes existing conditions at the time of the designation of critical habitat, which is 2005 for UWR and LCR species, and that any federal actions with a BiOp since 2005 that impact the baseline condition will also be considered as part of the baseline as an update.
9	Mitigation Determination Approach	Page 2, pp 3.	No mention of temporal loss is made in the memo. The memo should acknowledge that temporal loss and compensation for it will need to be considered.	Disagree. Schedule.	The timing of mitigation activities relative to the timing of impact will be determined during the remedial design process. As such, for the FS, we are assuming that there will be no temporal loss and that the required mitigation would be conducted concurrent with the remedial activities. If this is not the case, the temporal component will be addressed during remedial design, as necessary.
10	Mitigation Determination Approach	Page 3, pp 1, sentence 2.	In-situ treatment (GAC) should also be considered as a possible remedial activity.	Agree	

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11	Mitigation Determination Approach	Page 3, pp 1, sentence 3.	MNR may require conservation measures if there is continued exposure of ESA-listed species to contaminants.	Disagree. Schedule. Potential Inconsistency.	Disagree, by implementing MNR, there is no impact to the baseline condition of the habitat as there is no activity occurring as part of the action; the habitat will not be degraded or improved over baseline; there will be no change. As such, there is no need for conservation measures. Although there is no previous EPA correspondence accepting the approach provided in this response, this represents a significant new concept that was never raised before and practically constitutes a potential inconsistency with prior understandings. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction. If this is direction, please provide the regulatory basis for this requirement.
12	Mitigation Determination Approach	Page 3, pp 1, sentence 3.	While this approach seems reasonable, further justification (i.e., discuss of successful MNR versus failure and costs of monitoring to establish these outcomes) should be provided in the draft FS.	Agree	The requested information seems like it best fits in an engineering section of the FS rather than the BA/404(b)(1). The LWG can add monitoring to the MNR technology as a component of the proposed action.
13	Mitigation Determination Approach	Page 3, pp 2, bullet 1.	Engineered & active capping should be added to the list in the 1st bullet.	Agree	
14	Mitigation Determination Approach	Page 3, pp 2, bullet 3.	Reference to Appendix A should be made after NMFS suggested values.	Agree	
15	Mitigation Determination Approach	Page 4, pp 1, sentence 3.	This statement is not correct. HEA habitat baseline values may need to be adjusted based on site-specific factors or conditions, or simply because they are "degraded". This can be done on a site-specific basis; however, we do not have a specific site to consider at this point in time.	Potential Inconsistency.	Although the LWG agrees with the statement made in the comment, it is not consistent with previous agency feedback. We have been proceeding with the understanding that the LWG was instructed by NMFS and EPA to use the relative habitat values provided in the table attached to the mitigation determination tools memo, which provides one single value for each habitat category. Further, neither EPA nor NMFS agreed with the LWG approach to use a range of values that would essentially allow for an accounting of "adjustments" when being applied to a specific site based on site-specific factors and conditions. EPA comment appears to be inconsistent with the previous understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.

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16	Mitigation Determination Approach	Page 4, pp 2.	While EPA is not opposed to the LWG conducting additional analysis, we caution the LWG that this type of analysis is likely not going to result in any definitive agreements at the FS stage. As mentioned in the memo, final impacts and mitigation analysis will be conducted during remedial design. Thus, for the remedy decision, we will use the available information for a reasonable comparison of alternatives. Further, the reference to COTE is confusing and it is not clear whether the LWG intends to use the COTE tool or a modified COTE. Again, this type analysis may be controversial and the LWG should seriously weigh the costs and benefits of doing too detailed analysis at this stage of the process.	Agree	Noted. The LWG is not intending to use the COTE tool, but has developed a way to derive habitat values for the mitigation matrix using a similar functional assessment approach. This approach allows for differences in values based on site-specific factors and conditions.
17	Mitigation Determination Approach	Page 4, pp 3, sentence 3.	NMFS has not vetted the salmon calculator thus far. EPA again cautions the LWG that this type of analysis is likely not going to result in any definitive agreements at the FS stage. It should be noted that EPA believes that this type of analysis may be controversial and the LWG should seriously weigh the costs and benefits of doing too detailed analysis at this stage of the process.	Agree	Noted. See response to Specific Comment #16 above.
18	Mitigation Determination Approach	Page 5, pp 2.	This memo does not describe the process of including factors that could reduce the need for mitigation, which would be considered indirect mitigation costs. For example, if there is currently a shallow water habitat and dredging is being considered that would result in deep water habitat, filling back to same grade with similar substrate surface would re-establish the shallow water habitat and reduce the need for mitigation. However, the cost of the fill needs to be considered in the FS. This type of preferential on-site mitigation has more value than off-site mitigation and needs to be considered in the FS.	Disagree. Schedule.	The LWG is planning to add these types of factors as potential conservation measures and measures to avoid or minimize impact in the Draft site-wide BA and 404(b)(1) documents. However the decision to implement these types of activities would not be determined until the design phase.
19	Mitigation Determination Approach	Page 5, pp 4.	It is unclear why the LWG is discussing mitigation banking for the draft FS. At this point, the draft FS needs to consider various alternative actions and the effectiveness, implementability, and cost of mitigating those actions, with a preference for on-site mitigation (e.g., what would it take to restore the habitat value that was lost due to the proposed remedial activity and what is the feasibility and associated cost). Banking has nothing to do with this analysis – the price someone is willing to pay for a banked credit is irrelevant to mitigation for the CERCLA action. The mitigation credit costs for Oregon (New Forests, 2010) could be used as a comparative off-site cost to actual cost, but those costs could increase as the demand increases for mitigation since it is a market-based cost. Consequently, EPA believes a more valid estimate would include actual mitigation costs incurred for similar projects in the lower Willamette River or lower Columbia River basins (e.g., Terminal 4 Removal Action, Zidell Moody Avenue, etc.).	Disagree	The costs for mitigation being used in the FS as described in the memo are based on expected costs associated with actual construction of a mitigation project. They are not based on costs to buy mitigation credits from a bank. The LWG provided this discussion on mitigation banking in order to comply with the 2008 Clean Water Act Compensatory Mitigation Guidelines and to allow for the preferred method of accomplishing compensatory mitigation, through a mitigation bank. It is noted in the memo that purchase of mitigation banking credits is contingent upon establishment of a bank within an appropriate service area, and there is not currently an established bank that covers Portland Harbor. Mitigation banking is a cost effective and ecologically sound way to compensate for unavoidable losses of aquatic resources. Purchasing mitigation credits reduces schedule and project cost by eliminating development of mitigation plans, eliminating multiple agency reviews of mitigation actions, and finding and acquiring land, among other steps necessary to conduct on-site or off-site mitigation. As explained above, banking would be discussed in the analysis as a potential mitigation approach consistent with regulations. However, because applicable mitigation banks do not currently exist, the cost range for mitigation is based on estimated costs for permittee-led mitigation.

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20	Mitigation Determination Approach	Page 5, Cost Estimates for Mitigation.	This discussion is more appropriately placed in the FS Tools for cost and should be integrated with remedial actions as part of capital costs for each alternative. This document seems to assume that the cost would be apportioned on a per credit basis, where EPA views the costs apportioned to the real cost of constructing the required mitigating habitat.	Disagree.	Agree with the first sentence of this comment. The costs for mitigation being used in the FS are based on the real cost of constructing a mitigation project and not on purchasing credits.
21	Mitigation Determination Approach	Page 6, pp 3, sentences 2 & 3.	Mitigation at the 4th field scale will not work. Upper Willamette River (UWR) stocks or Lower Columbia River (LCR) stocks could be omitted. Since both UWR and LCR stocks will need to be mitigated for in any action that decreases habitat values in Portland Harbor, this (along with the life stages of the ESUs/DPSs affected) should be taken into account when selecting mitigation sites.	Disagree. Schedule.	See responses to General Comment #5, and Specific Comment #2.
22	Mitigation Determination Approach	Page 6, pp 3, last sentence.	Further clarification or justification is needed for EPA's understanding of this statement. Remedial costs should not be double counted through mitigation costs. The cost of removal will be the same, only the mitigating costs should be compared. Again, it is likely that more off-site area will be needed to mitigate to compensate for on-site actions than on-site mitigation, so it would seem that the cost of off-site mitigation would be the greater of the two.	Disagree/Schedule (last sentence of comment)	To clarify, no double counting is occurring here. The sentence was intended to imply that the cost of implementing mitigation within Portland Harbor is more expensive due to the fact that this area has been filled in more than off-site areas and in order to create shallow water areas and achieve appropriate grades, a great deal of removal is necessary and removal is expensive. Disagree with the last sentence of this comment; see responses to General Comment #5 and Specific Comment #s 2, and 21.
1	Costing Approach Memorandum	General	This memorandum uses a cost period of 30 years. There is no justification provided for using a 30-year period in this memorandum. EPA guidance for costing an FS (EPA 2000), which was cited for this document, explicitly states that the costing period should be determined by the time estimated to achieve the Remedial Action Objectives (RAOs). The guidance further states that the blanket use of a 30-year period of analysis is not recommended (sic p.4-2).	Agree	We can justify the period used in the draft FS.
2	Costing Approach Memorandum	General	This document does not include mitigation costs, which are likely to be necessary for most alternative actions. The FS needs to include capital costs, costs for technical and professional services, etc. for mitigation projects.	Agree	Mitigation costs are being worked in to the draft FS.
3	Costing Approach Memorandum	General	The duration of the project will most likely be determinant upon construction during the fish window. EPA's expectation is to implement the remedy as quickly as possible (within the limits of fish windows) for the purposes of cost estimation. The memorandum should discuss when the fish window for the lower Willamette River is, and the limitations for construction. Further, this will also add to the number of mobilizations/demobilizations that will be required to perform the necessary construction. The number of simultaneous construction projects will also affect cost. These factors should all be considered in costing remedial alternatives in the draft FS.	Agree	We are factoring this into the draft FS.
4	Costing Approach Memorandum	General	EPA has not had discussions with the LWG regarding AOPC to SMA development. Consequently, we are not sure if we agree with a sub-Sediment Management Area (subSMA) concept at this time.	Disagree. Schedule.	If the EPA disagrees with this approach during the next check in, this will cause major rework and impact schedule.

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5	Costing Approach Memorandum	General	Long-term monitoring commences once the RAOs for the site have been achieved. These are activities to maintain effectiveness of the remedy. The monitoring that occurs from the time construction is complete until the RAOs have been met is termed short-term monitoring. This document does not discuss short-term monitoring costs separately from long-term monitoring costs.	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding that long term monitoring costs will be developed consistent with the EPA 12/19/09 comments. The approach noted appears to be an unusual approach. No citations to guidance given for this. EPA 12/18/09 comments on long term monitoring do not mention this concept. The comment appears to be inconsistent with the prior understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
6	Costing Approach Memorandum	General	Demolition (piers, docks, etc.), piling and debris removal should be costed as a separately under Indirect Construction Tasks (page 2). This will likely be part of many remedies, not just full removal alternatives. It will be a necessary part of capping, CDF construction and possibly in-situ treatment or EMNR.	Disagree. Schedule.	Any demolition costs needed will be included. However, the LWG continues to disagree that demolition of piers etc. should be screened in for removal alternatives in general, given it is generally not cost effective, as presented in the December 14, 2010 volumes presentation.
7	Costing Approach Memorandum	General	Monitoring costs should include costs for laboratory analysis.	Agree	This is being included in the draft FS.
8	Costing Approach Memorandum	General	There is no discussion of evaluation of net present value or sensitivity analysis that will be conducted in the FS. These are discussed in the EPA FS Costs Guidance and should be discussed in this document as well.	Agree	We are including NPV but do not plan to conduct a full sensitivity analysis.
9	Costing Approach Memorandum	General	Remedial design sampling costs are not included in this document. Since much sampling, including cores, benthic toxicity, and debris investigation, was postponed to this phase of the project, it is likely to be a significant cost of the project and should be included in the analysis.	Agree	This is included as part of design fee.
10	Costing Approach Memorandum	General	At the next check-in meeting regarding AOPC to SMA development, the LWG should present specific examples of how volumes and unit costs would be calculated and applied for one or two SMAs.	Agree	We can add this to the check in. In November 2009, the LWG provided the EPA with examples of estimating volumes on a SMA basis. This is another request added to the check in.
1	Costing Approach Memorandum	Page 1, Introduction.	The introduction should acknowledge that the final alternative cost estimates in the feasibility study will be developed to an expected -30%/+50% cost accuracy range and that all cost estimates will be documented to the extent practicable. Cost estimates for screening-level alternatives should be developed to at least a -50%/+100% expected cost accuracy per EPA guidance.	Agree	This is our intended cost range for comprehensive alternatives.
2	Costing Approach Memorandum	Page 1, pp 2, last sentence.	The sensitivity analysis for costing should only be determined from the nature and extent of contamination, remedy failure, expected life of the remedial technology, project duration, and discount rates.	Disagree. Schedule.	We are using sensitivity ranges to our major cost elements, but not a detailed sensitivity analysis as described here. This was done for the Duwamish and some EPA comments indicated it was confusing and misleading.
3	Costing Approach Memorandum	Page 1, pp 1.	Since the Oregon Department of State Lands is also a Potentially Responsible Party at the site, they may be willing to negotiate the requirement for lease or purchase as part of a negotiation. The LWG should provide justification for any costs submitted in the draft FS with regard to the lease and/or purchase of state lands.	Agree	We have back up for this that will be presented in the draft FS.

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4	Costing Approach Memorandum	Page 2, DSL Land Purchase.	DSL will soon be writing rules that specifically address use of State-owned submerged and submersible lands for implementation of removal and remedial actions and certain restoration projects. The rules are expected to describe the type of authorization needed, the process for and cost of securing that authorization and other requirements related to long-term maintenance and monitoring. The rules will most likely include requirements for conservation easements on the ENMR lands that would include or facilitate restrictions needed to facilitate the remedy. Where other short- or long-term access is needed to facilitate work or permanent structures, other authorizations would be required. Depending on the nature of the project, these may include an access agreement, lease, easement agreement, sale of the property, or a combination thereof. The costs proposed for such authorizations would be determined by DSL, as provided in the new rules. DSL's existing rules value a conservation easement at one-third of the adjacent upland value. In earlier transactions for remedial work, DSL has established a lease rate based on non-marine use rates in effect at the time as applied under OAR 141-082 and a purchase price based on capitalizing that lease rate over ten years. New rules developed and adopted by the State Land Board may, however, differ from those in place now and would supersede existing rules and past practice.	No Response Necessary	Comment does not ask for any changes.
5	Costing Approach Memorandum	Page 2, Indirect Construction Tasks.	Design should be a capital cost, which is a direct cost, not an indirect cost. It is inappropriate to apply 15% since the EPA FS Costing Guidance (page 5-13) applies 6% to remedies costing >$10M.	Disagree	Given the uncertainties of these large projects and the early stages, we believe our value is appropriate.
6	Costing Approach Memorandum	Page 2, Indirect Construction Tasks.	Cost assumptions should also include contractor overhead & profit, legal, mobilization & demobilization for each construction period, and institutional controls. Contingency costs should be separated into scope & bid: scope usually ranges between 10 and 25%, where bid usually ranges between 10 and 20%. Justification for the use of 40% total contingency should be provided. The fish window construction period should be well defined for this cost assumption and should assume that the construction periods will commence back to back (no lapse in years during construction).	Disagree	We have taken a more general approach, but generally believe it captures these issues at a sufficient level of detail for an FS.
7	Costing Approach Memorandum	Page 3, Quantity Estimates, 3rd bullet.	While “chasing contamination” has been shown to be largely ineffective, some of that ineffectiveness has been the result of poorly conceived and executed dredging plans. Dredge sequencing can be critical and has yet to be adequately addressed (beyond it’s a good thing to consider). Once a dredge plan is prepared, the issue of dredging passes can be rationally evaluated and resolved. At this time it is too early to accept a NO MULTIPLE PASSES approach entirely. For FS costing purposes, a two-dredge-pass estimate should be used.	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding that one dredge pass and cover is the agreed to approach based on EPA's 1/28/11 comments on the 12/14/10 volumes presentation. The comment appears to be inconsistent with this understanding, please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
8	Costing Approach Memorandum	Page 4, Monitored Natural Recovery.	There is no justification or statistical significance to the number of samples assumed for the site-wide monitoring program. The values presented will likely far underestimate the cost of the monitoring program required to establish MNR has occurred to meet the RAOs for the site.	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding from EPA's 12/18/09 comments on long term monitoring, which provide specific numbers of samples to be assumed and do not require a statistical analysis or approach for FS purposes. The comment appears to be inconsistent with this understanding, please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.

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9	Costing Approach Memorandum	Page 4, Monitored Natural Recovery, 1st bullet.	The term "harbor-wide" should be "site-wide" to clearly define that the monitoring will associated with contamination throughout the superfund site. The site-wide monitoring program needs to extend to the duration of time that it will take to meet RAOs at the site. This will likely change with remedial alternatives since MNR will have a different time frames when combined with other actions. It should be assumed that all monitoring (biota, surface water, and sediments) will occur twice every five years (i.e., second and fourth year) for at least first 10 years or for the duration of construction at the site, and then could drop off to once per five years (i.e., fourth year) until RAOs are met. Biota tissue monitoring should include 21 composites; however, EPA agrees with the assumption of four species (e.g., carp, bass, sculpin and clams). Surface sediment should be assumed to be 24 multi-increment samples consisting of 30-50 increments per sample (excluding capped areas).	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding based on EPA's 12/18/09 comments on long term monitoring, which use the term "harbor wide", do not define frequency of tissue sampling, provides different numbers of composites, and does not indicate 30 to 40 increments per sediment samples (for any kind of sediment monitoring). Also, note that no citation or explanation is given for incremental sampling. We believe EPA may be referring to a soil approach that would be difficult to apply to sediments, and is not widely applied to sediments. This appears to be a significant departure from past comments on this topic. Overall, the comment appears to be inconsistent with prior understandings. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
10	Costing Approach Memorandum	Page 4, Monitored Natural Recovery, 2nd bullet.	The term "site-specific" should be "area-specific" to clearly define that the monitoring will be associated with contamination in an area of the superfund site. The area-specific monitoring program needs to extend to the duration of time that it will take to meet RAOs in that area. This will likely change with remedial alternatives since MNR only will have a different time frames when combined with other actions. Surface sediments should be assumed to be one multi-increment sample per acre consisting of 30 increments per sample (excluding capped areas). Three surface water transects in area-specific location should be added to the costs estimate. It should be assumed that all monitoring will occur twice every five years (i.e., second and fourth year) for at least first 10 years or for the duration of construction at the site, and then could drop off to once per five years (i.e., fourth year) until RAOs are met.	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding that EPA's 12/18/09 comments on long term monitoring do not indicate 30 to 40 increments per sediment samples (for any kind of sediment monitoring). Also, note that no citation or explanation is given for incremental sampling. We believe EPA may be referring to a soil approach that would be difficult to apply to sediments, and is not widely applied to sediments. This is a significant departure from past comments on this topic. The 2009 comments also do not mention surface water monitoring for area-specific locations, nor does it mention frequency specifics for any monitoring. The comment appears to be inconsistent with this understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
11	Costing Approach Memorandum	Page 4, Enhanced Monitored Natural Recovery, 3rd bullet.	Turbidity monitoring will be required at a minimum during material placement.	Agree	Construction monitoring in general is included in construction costs.
12	Costing Approach Memorandum	Page 4, Enhanced Monitored Natural Recovery.	Monitoring for enhanced natural recovery should be similar to that of monitored natural recovery (see comments 8 through 11).	Disagree. Schedule. Potential Inconsistency.	We are agree that monitoring of EMNR areas should be similar to MNR areas, but not the specifics in comments 8 through 11 (see above).

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13	Costing Approach Memorandum	Page 5, Capping.	Costs for the transport, storage and placement of cap materials should be included. Long-term monitoring should include biological monitoring (biota tissue) as well.	Disagree. Schedule. Potential Inconsistency.	We have included cap material transport and associated costs. We have been proceeding with the understanding based on EPA's 12/18/09 monitoring comments that does not include this concept about biota tissue for long term monitoring. The comment appears to be inconsistent with this understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
14	Costing Approach Memorandum	14. Page 5, Capping.	Direct costs for materials should be split into engineered caps (armored caps) and reactive (rather than active) caps. The difference in cost is only the addition of the reactive layer. The use of organoclay mats is expensive and may not always be warranted. Granulated Active Carbon (GAC) can be equally effective in controlling many contaminants as a reactive layer in a cap.	Disagree. Schedule.	If included in any comprehensive alternative, costs of active and standard caps would include different unit costs for these materials. Organoclay mats are used as an example for FS costing purposes. GAC will not alter cost assumptions substantially.
15	Costing Approach Memorandum	Page 5, Capping.	Long-term O&M does not commence until after RAOs are achieved. This document should discuss short-term O&M that will occur after construction complete until RAOs are achieved. Short-term O&M should consider labor, equipment and materials (at net present value) for monitoring and periodic costs of 5 year reviews, site closeout, remedy failure/replacement (based on life expectancy of technology) and replacement/repair of cap. The cap-specific monitoring program needs to extend to the duration of time that it will take to meet RAOs in that area for each remedial action alternative. Surface sediments of cap should be assumed to be one multi-increment sample per acre consisting of 30 increments per sample. It should be assumed that all monitoring will occur twice every five years (i.e., second and fourth year) for at least first 10 years or for the duration of construction at the area, and then could drop off to once per five years (i.e., fourth year) until RAOs are met.	Disagree. Schedule. Potential Inconsistency.	See previous responses. Multiple potential inconsistencies and disagreements are potentially present.
16	Costing Approach Memorandum	Page 5, Capping, 1st and 2nd bullets.	Collection of sediment cores, pore water, and hydrographic surveys should be part of short-term O&M costs, as well as long-term O&M costs. Long-term monitoring should include diver surveys and hydrographic surveys once every 10 years. Sediment cores and surface sediment monitoring should only occur when catastrophic events occur (e.g., extreme flow events, earthquake, cap disruption from boat anchors, etc.).	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding based on EPA's 12/18/09 comments on cap monitoring. Also, this comment appears to be inconsistent with other cost comments above. The comment appears to be inconsistent with the prior understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
17	Costing Approach Memorandum	Page 5, Active Capping.	Comments 13 through 16 also apply to this section.	Disagree. Schedule. Potential Inconsistency.	See responses above.
18	Costing Approach Memorandum	Page 6, Full Removal.	The fish window construction period should be well defined for this cost assumption and should assume that the construction periods will commence back to back (no lapse in years during construction). Short-term O&M should consider labor, equipment and materials (at net present value) for monitoring and periodic costs of 5 year reviews, and site closeout.	Agree	These are included through a more generalized cost estimate.
19	Costing Approach Memorandum	Page 6, Full Removal.	The cost should include decontamination of work equipment (trucks, barges, boats, dredges, etc.) and all other items that may come in contact with the contaminated sediment. Land acquisition/leasing/rental costs for staging equipment should be considered.	Agree	This is included in mob/demob costs, but in a more general level of detail appropriate for an FS.

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20	Costing Approach Memorandum	Page 6, Full Removal, 2nd bullet.	Not all pilings or floating docks will need to be replaced; replacement costs should not be part of the cost analysis. Further, there should be some costs for removal of more permanent-type structures such as piers and docks.	Disagree. Schedule.	LWG provided an approach for evaluating structure removals in our December 14, 2010 presentation that we believe is appropriate. Modifying that approach now will have schedule implications, with little or no added benefit to the FS analysis.
21	Costing Approach Memorandum	Page 6, Full Removal, 3rd bullet.	A more robust analysis of engineering controls should be considered than partial-height silt curtains. The costs should include the methods described in the "Dredging Water Quality Evaluations" FS Tools Technical Memorandum to determine appropriate and necessary engineering controls for dredging. At a minimum, the draft FS needs to consider the cost of rigid containment as a possible work/cost element of dredging in some areas.	Disagree. Schedule.	We believe that EPA will need to see the entire FS analysis on this issue in order to make a final decision on various types of containment.
22	Costing Approach Memorandum	Page 6, Full Removal, 5th bullet, last sub-bullet.	Second pass dredging may not be required just because the residuals are elevated. It would depend on the mass of elevated residuals and whether EMNR would or would not be expected to work.	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding that one cleanup pass and cover was the agreed to approach based on EPA's 1/28/11 comments on the 12/14/10 volumes presentation. The comment appears to be inconsistent with this understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
23	Costing Approach Memorandum	Page 7, Full Removal, long-term O&M.	There should only be long-term O&M associated with full removal where contamination is left in place. If all targeted contamination for full removal is able to actually be removed, then there is no need to conduct long-term O&M. This area would become part of the site-wide MNR area post removal. For areas where contamination is left at depth and a cap is required, refer to comments 13 through 16 for appropriate assumptions.	Disagree	Given we are dredging to RALs above the PRGs in many alternatives, the LWG does not agree with this approach.
24	Costing Approach Memorandum	Page 7, In-Situ Treatment.	In-situ treatment is presented as "placing sand mixed with carbon as a thin layer over impacted sediment." It may also be appropriate to mix carbon directly into the existing sediment. The material cost differential could be significant over large areas and should be considered in the draft FS.	Disagree	We agree that there is a significant cost differential between the two approaches. Given that the FS comprehensive alternatives cannot evaluate every possible process option, we believe the assumption is adequate for FS purposes.
25	Costing Approach Memorandum	Page 7, In-Situ Treatment.	Land acquisition/leasing/rental costs for staging equipment should be included. Long-term monitoring should include biological monitoring (biota tissue) as well.	Disagree. Schedule. Potential Inconsistency.	We have included these costs. We have been proceeding with the understanding based on EPA's 12/18/09 monitoring comments that does not include this concept about biota tissue for long term monitoring. The comment appears to be inconsistent with this understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.

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26	Costing Approach Memorandum	Page 7, In-Situ Treatment.	Long-term O&M does not commence until after RAOs are achieved. This document should discuss short-term O&M that will occur after construction complete until RAOs are achieved. Short-term O&M should consider labor, equipment and materials (at net present value) for monitoring and periodic costs of 5 year reviews, site closeout, and remedy failure/replacement (based on life expectancy of technology). The area-specific monitoring program needs to extend to the duration of time that it will take to meet RAOs in that area for each remedial action alternative. Surface sediments of cap should be assumed to be one multi-increment sample per acre consisting of 30 increments per sample. It should be assumed that all monitoring will occur twice every five years (i.e., second and fourth year) for at least first 10 years or for the duration of construction at the area, and then could drop off to once per five years (i.e., fourth year) until RAOs are met. Once RAOs are met, area can be made part of site-wide MNR program.	Disagree. Schedule. Potential Inconsistency.	See responses to previous comments on long term monitoring issues.
27	Costing Approach Memorandum	Page 8, Disposal.	Pretreatment and treatment costs for contaminated sediment and water (from dewatering) should be included.	Agree	This is included.
28	Costing Approach Memorandum		28. Page 8, Disposal, 5th bullet. The cost estimate for disposal is based on transport to the landfill by train. Would barging the material be more cost effective? Transportation costs for rail and barge should be evaluated with rehandling requirements specified, and tipping fees to landfills need to be part of the cost estimate.	Agree	We have evaluated this and train transport is more cost effective. This information will be presented in the draft FS. We do not see a need to evaluate two transport methods for an FS level evaluation.
29	Costing Approach Memorandum	Page 8, Disposal, 2nd to last paragraph.	Please clarify what is meant by "The lower end of the Terminal 4 CDF is assumed to be the lower possible end of in-water CDF disposal."	Agree	We can explain
30	Costing Approach Memorandum	Page 8, Disposal, last paragraph.	This statement is vague and needs more explanation of assumptions that will be used to provide FS cost estimates.	Agree	We can explain
31	Costing Approach Memorandum	Page 8, Ex-situ Treatment.	It should also be considered that treated material may be used as cap material and could reduce cost of capping material or could be sold to offset cost of treatment.	Disagree. Schedule.	We have noted several times to EPA that we will not be able to predict beneficial uses far into the future. This includes use of treated materials for caps. There is no situation we can envision where treated material would be more cost effective than clean quarry material for capping. (Also, we might have to store the treated materials for years to have them available to use in later capping projects. This would also add substantially to the costs of this approach.)
32	Costing Approach Memorandum	Page 9, References.	The following additional sources of information should be used: ● Chapter 6 Equations from USACE ERDC/EL TR-08-29 "Technical Guidelines for Environmental Dredging of Contaminated Sediments." This guide would be helpful to state assumptions for each dredge production rate. ● EPA 905-R96-001 "Estimating Contaminant Losses from Components of Remediation Alternatives for Contaminated Sediment" to supplement the information cited from Patmont and Palermo.	Agree	We are aware of these references. We will review these more closely, but we do not expect them to change our methods substantially.

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33	Costing Approach Memorandum	Figure 1, Armored Caps.	Figure 1 shows various types of armored (only) caps. The LWG should recognize that armored caps may not be appropriate or acceptable given certain site-specific habitat issues and may need to be modified under mitigation costs. This comment also applies to the cap costing assumptions on page 5.	Disagree. Schedule.	We cannot modify armor for mitigation purposes because the cap could then be inadequately designed to prevent erosion. Mitigation costs are included as other measures.
34	Costing Approach Memorandum	Figures 1 & 2, Vertical Overplacement.	Figures 1 & 2 show assumptions for vertical overplacement of cap material & dredging over-depth, respectively. Assumptions for horizontal overplacement of cap materials (e.g., fringe capping or feathering) & lateral over-dredging should also be presented.	Disagree. Schedule.	This is sufficient for an FS level estimate
1	Treatment Technology Evaluation	Page 2, Table 1.	The LWG needs to use the attached table for Treatment Criteria in the draft FS. The Clean Fill requirement is broader than just upland unrestricted use. There are other columns in the table that show other values that may be acceptable for other uses.	Disagree. Still Evaluating.	These criteria would apply to material used for in-water beneficial uses, but most do not apply to upland uses. EPA soil screening levels would not be applicable for off-Site uses, ODEQ values would prevail. None of these criteria apply to material placed in the CDF.
2	Treatment Technology Evaluation	Page 3, Table 2.	EPA will be providing comments on the screening of technologies tables provided on April 14, 2011. Since the EPA has not agreed to the document at this time, the LWG should update the retained technologies for treatment in this document based on any future comments EPA has on the Technology Screen.	Disagree. Schedule.	We are currently not evaluating treatment in any comprehensive alternative, with the exception of dewatering (i.e., pretreatment) and stabilization, as noted in our April screening presentation.
3	Treatment Technology Evaluation	Page 3, Table 2, Dewatering.	It should be noted that a range of dewatering technologies are being considered.	Agree	We can note this in the draft FS.
4	Treatment Technology Evaluation	Page 3, Table 2, Thermal Treatment Technologies.	It should be noted that the LWG will look at green sources of power for these technologies.	Agree	We will meet sustainability requirements EPA has laid out in their 2011 schedule letter.
5	Treatment Technology Evaluation	Page 4, In Situ Treatment, pp 1.	The LWG should provide citations for documents demonstrating the effectiveness of activated carbon and other reagents. The LWG needs to specify any other reagents being evaluated in the Technology Screen and in Table 2.	Agree	We can add this to the draft FS.
6	Treatment Technology Evaluation	Page 4, In Situ Treatment, General Step 1.	It is unclear what the indicator COCs are for the evaluation of in situ treatment technologies. There needs to be a discussion of how the COCs will be selected for the evaluation in the draft FS. The LWG should be looking at the cited treatment capabilities for the technology. If the LWG wants to consider other potential use than those cited by other studies/uses, then the LWG needs to conduct a bench scale treatability study to demonstrate the effectiveness for that contaminant.	Agreed	We will add information stating which COCs are considered. Also, we currently only consider in situ technologies that have been demonstrated effective for Site COCs.
7	Treatment Technology Evaluation	Page 5, In Situ Treatment, General Step 2.	It is unclear what the LWG means by "concentration distribution plots." Are these the maps in the draft RI showing contaminant concentrations of samples or is the LWG producing something different? If something different is being used, please discuss and provide an example. The LWG needs to describe how implementability and feasibility of treatment be evaluated and determined.	Agree	We can explain more in the draft FS.
8	Treatment Technology Evaluation	Page 5, In Situ Treatment, General Step 3.	This statement seems more like a conclusion than a process step to identify SMAs. This should be revised to a statement regarding how the LWG is going to conduct the evaluation for the draft FS rather than making a statement about the expected outcome.	Agree	We can explain and revise in the draft FS.

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9	Treatment Technology Evaluation	Page 5, In Situ Treatment, General Step 4.	The basis for excluding in situ treatment in the navigation channel is not clear. Please provide this basis.	Agree	We can explain more in the draft FS.
10	Treatment Technology Evaluation	Page 5, Ex Situ Treatment.	It is overly conservative to assume that treated sediment must meet unrestricted use requirements to have a potentially beneficial use. Ideally, treatment would achieve unrestricted use levels, but unrestricted use should not be the only treatment goal and should not be the sole basis for exclusion of ex situ treatment in the draft FS. For example, contaminated sediment could be treated to a level where the sediment could provide a beneficial use, e.g., foundation of an upland cap.	Disagree	It is not clear that these beneficial uses will be available, so we need to screen on a conservative basis.
11	Treatment Technology Evaluation	Page 5, Ex Situ Treatment.	It is not appropriate to screen out ex situ treatment because beneficial uses have not been identified. Even though the LWG suggests that this can be reconsidered during remedial design, EPA wants some level of analysis in the draft FS. If ex situ treatment is not evaluated in the draft FS, then it would be difficult to substantiate including it in a ROD. In that case an ESD or ROD amendment may be needed to include it during remedial design. Since CERCLA has a preference for treatment and the purpose of ex situ treatment evaluation in the FS is to evaluate the cost of treating dredged material for a use versus disposal, the LWG needs to provide the anticipated treatment capabilities, discuss the possible beneficial uses of the treated sediments based on the resulting treated levels, and the costs for that treatment in the draft FS. 12. Tables 1 and 2. EPA will make comments on these with our comments on the tables provided on April 14, 2011. These tables should be modified or removed and referenced to any final tables based on EPA's comments. It is not appropriate to screen out ex situ treatment because beneficial uses have not been identified. Even though the LWG suggests that this can be reconsidered	Disagree. Schedule.	The LWG believes we have adequately evaluated potential beneficial uses for the purposes of the FS. We maintain that beneficial uses in the future cannot be predicted and worked into the FS, per LWG's April screening presentation. EPA's concerns may be more adequately addressed at the time of the ROD. EPA can write the ROD to include provision that cost benefit evaluation of ex situ treatment versus disposal must be performed (updated) during remedial design. The ROD could include performance metrics to outline expectations. We do not believe this approach would require an amendment or ESD. CERCLA's treatment preference is also satisfied through the evaluation of in situ technologies that were screened through by LWG.
12	Treatment Technology Evaluation	Tables 1 and 2.	EPA will make comments on these with our comments on the tables provided on April 14, 2011. These tables should be modified or removed and referenced to any final tables based on EPA's comments.	Disagree. Schedule. Potential Inconsistency.	If EPA is referring to the Appendix tables, EPA has already provided comments on these tables. We have been proceeding with the understanding that these tables, which are consistent with past EPA comments, are the foundation of the treatment technology screening. The comment appears to be inconsistent with this understanding. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
1	Dredging Water Quality Evaluation	General	This memorandum needs to cite both the Final GASCO Early Removal Action Construction Oversight Report and the Final Terminal 4 Early Removal Action Construction Oversight Report and discuss information learned (e.g., adequacy of model predictions of resuspension, adequacy of BMPs, etc.) from those actions as cited in the reports.	Agree	We can add this to the draft FS.
1	Dredging Water Quality Evaluation	Page 1, Introduction, pp 1.	It should be noted that a more detailed evaluation for the need of physical controls for each dredge project will be conducted during area-specific remedial design.	Agree	This can be added to the draft FS.

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2	Dredging Water Quality Evaluation	Page 2, Typical Water Quality Controls, pp 2, 3rd sentence.	Little discussion was provided on the various physical and operational controls that can be used with dredging. The LWG needs to provide a list of references of previous dredging projects and provide more details on the benefits and challenges associated with physical dredge controls. This memorandum would be a more effective tool if a pro/con analysis on the effectiveness of using physical and operational controls during dredging was included. Further, it is likely that the pros and cons of physical controls associated with hydraulic dredging are the same as for mechanical dredging. These also should be presented.	Agree	We can add this to draft FS.
3	Dredging Water Quality Evaluation	Page 2, Typical Water Quality Controls, 3rd bullet.	It is likely that normal daily operation would already be impeded by dredging activities and is unclear what additional impediments from physical controls would cause. The LWG should provide additional rational and clarification for this statement.	Agree	We can add this to draft FS.
4	Dredging Water Quality Evaluation	Page 3, Dredge Model.	While 2-D vertically-integrated models, rather than 3-D models, are probably the best choice for the FS given the cost and data needs of the alternatives, transport models are inherently difficult and the results are subject to wide variability and interpretation. Depth averaging is of particular concern because in large river systems like the Willamette River, flow velocities vary significantly at different depths and with seasonally changing temperature and salinity. Dredging with a clamshell bucket is likely to have the majority of sediment loss at the riverbed and lessening amounts of loss up through the water column with each journey of the bucket. Accounting for where the greatest amount of loss occurs and how various flow velocities and tidal influence affect loss, it is important in determining how much sediment will be transported and where.	No Response Necessary	No change requested.
5	Dredging Water Quality Evaluation	Page 3, Dredge Model.	The dredge model can also be used to evaluate impacts from hydraulic dredging, but was not conducted for this report. This needs to be done in the draft FS to complete the evaluation for hydraulic dredging.	Disagree. Schedule.	We are using mechanical dredging for all our example analyses, although we are not screening out hydraulic dredging. This is a reasonable simplification of process options for the comprehensive alternatives.
6	Dredging Water Quality Evaluation	Page 4, Footnote 1.	This footnote states that the LWG's expectation is that mechanical dredging will be used much more than hydraulic dredging. The LWG did not provide the basis for this assumption. Until each of the remedial technologies is evaluated for each SMA, the LWG should refrain from pre-selecting remedial technologies.	Disagree. Schedule.	We are using mechanical dredging for all our example analyses, although we are not screening out hydraulic dredging. This is a reasonable simplification of process options for the comprehensive alternatives.
7	Dredging Water Quality Evaluation	Page 6, Water Quality Predictions.	It is unclear how the contaminants were selected from the Identification of "COCs" and Contaminant Mobility Evaluation Criteria for the Draft Feasibility Study. It seems that the contaminants evaluated for water quality predictions should be the combined list of Tables 1, 2 and 3, since all of these tables present exceedances in water media at the site. Further, there may be sediment COCs associated with TSS that also may be problematic in the water column during dredging that should be evaluated.	Disagree. Schedule.	If we analyze every chemical, this will have large schedule impacts. The LWG will explain our approach of selecting surrogate chemicals to represent larger groups of chemicals in the draft FS.
8	Dredging Water Quality Evaluation	Table 1.	This table does not provide the sediment concentrations used to determine exceedances of acute AWQCs. It is unclear whether average or maximum sediment concentrations were used in the evaluation. Further, the magnitude of the predicted exceedances is not provided. The LWG should provide more information regarding how this model determines exceedances of acute AWQCs in an appendix to the draft FS and provide all inputs to the model, including sediment contaminant concentrations with appropriately cited statistic for value.	Agree	We can provide in the draft FS.

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1	Identification of COCs and Contaminant Mobility	General	CERCLA and the NCP addresses "hazardous substances, pollutants or contaminants: which EPA has reasonably narrowed to contaminants of concern (COCs) or contaminants of potential concern (COPCs). Further, the AOC and SOW for the Portland Harbor Superfund site both refer to investigating and addressing "hazardous substances, pollutants, or contaminants," "contaminants," or "contamination." Since the risk assessments will identify contaminants of concern, the Feasibility Study needs to use the correct terminology.	Agree	LWG previously agreed in a letter dated March 30, 2011 to use the "contaminants of..." terminology.
2	Identification of COCs and Contaminant Mobility	General	This memorandum does not discuss the COCs for the PRGs that the EPA has directed the LWG to use in the draft FS. There should be some discussion of this and that it is the subset of COCs being carried into the draft FS. EPA agrees that the LWG may present a risk management document that would assist EPA in determining if additional COCs need to be evaluated in the final FS.	Disagree	The COCs represented by EPA's focused PRGs are included in Table 4 and will be carried into the FS. As such, EPA's focused PRGs will be discussed in the FS.
3	Identification of COCs and Contaminant Mobility	General	The LWG has used the Human Health Ambient Water Quality Criteria (HH AWQC) for organism only in the screening approach. However, the designated use of the Lower Willamette River (Mouth to Willamette Falls, Including Multnomah Channel) (340-041-0340 Table 340A) indicates that public domestic water supply, private domestic water supply and water contact recreation are designated uses. This screen should also include a comparison to HH AWQC Water and Fish Ingestion numbers. EPA does not believe that this discrepancy in the use of HH AWQCs will result in a significantly different screening approach.	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding from Eric Blischke in meetings that we only needed to use "fish consumption only" values. EPA's February 9, 2010 resolutions for Comment No. 10 from their December 23, 2009 comments on the draft risk assessments states: "For the evaluation of groundwater at the site, EPA requires the evaluation of groundwater data (including the transition zone) against fish consumption AWQCs (17.5 g/day) and SDWA MCLs". We have not performed this screen so we do not know how it will impact the contaminant mobility evaluations in the FS. It is our understanding that consumption+ingestion criteria, at least historically, has been rarely if ever used by DEQ in permitting. Consequently, we are not clear that these criteria are really an ARAR (i.e., an ARAR has to be a standard applied by the state in similar circumstances). The comment appears to be inconsistent with prior understandings. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.

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1	Identification of COCs and Contaminant Mobility	Page 1, Introduction, footnote 1.	EPA disagrees that COCs are to be proposed in the LWG's risk management recommendation document. COCs are those contaminants that have been investigated, evaluated and determined may be posing unacceptable risk at the site. At this point, all the COCs in Table 4 are contaminants of concern. This list will be revised throughout the process to determine the COCs for the ROD.	Disagree. Potential Inconsistency.	We have been proceeding with the understanding based on the August 20, 2010 meeting to discuss EPA comments on the draft risk assessments and RI where the LWG and EPA specifically agreed that COCs would be proposed in the LWG's risk management recommendations documents. Furthermore, the LWG and EPA agreed that COCs would be defined as contaminants posing unacceptable risk at the site and that chemicals potentially posing unacceptable risk were not necessarily COCs. EPA's April 9, 2010 letter to the LWG stated "EPA's Superfund Information Systems website defines COCs as "chemical substances found at the site that the EPA has determined pose an unacceptable risk to human health or the environment."" The LWG's position on COCs was documented in its September 15, 2010 letter. EPA's September 22, 2010 response letter states: "EPA has reviewed the September 15, 2010 letter and attachments and agrees, with clarifications, that EPA's directed comments on the BERA and BHHRA should be revised in accordance with the general framework, and that the proposed resolution described in LWG's general responses matches our understanding of the meeting outcome. EPA clarifications are presented below:" None of the clarifications dealt with the COC issues. The comment appears to be inconsistent with prior understandings. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
2	Identification of COCs and Contaminant Mobility	Page 1, Introduction, 1 pp, 2nd sentence.	This statement is inaccurate. The protectiveness determination should be based on the ability of the remedy to achieve the RAOs.	Agree	We will describe this more in the draft FS, but risk reduction does play a part in the assessment of RAO achievement.
3	Identification of COCs and Contaminant Mobility	Page 1, Introduction, 1 pp.	Between the 2nd and 3rd sentences, add "EPA will determine the COCs to conduct biological and environmental media monitoring to determine remedy success over time in the proposed plan."	Agree	The change will be made to the draft FS.
4	Identification of COCs and Contaminant Mobility	Page 1, Objectives for Water Screening, 1st bullet.	It should be clear that the purpose of screening the near-bottom surface water samples is to determine chemical mobility from a source. There should be a step in the process where it is determined whether the source (upland contaminated groundwater plume or contaminated sediments) is linked to the sample. This is important since it could be critical in determining the remedial action in that area (source control, dredging, type of cap, etc.).	Disagree. Potential Inconsistency.	We have been proceeding with the understanding that this was not a purpose for screening near-bottom surface water samples. The proposed process step was essentially done in Appendix C2 of the RI where Integral identified whether chemicals in TZW were likely originating from upland groundwater sources or impacted sediment. However, this information can be added to the discussion of sources in the FS.
5	Identification of COCs and Contaminant Mobility	Page 2, Objectives for Water Screening, last sentence.	The generalized statement that "an FS typically" does this is not accurate and should be either clarified or removed.	Disagree	However, additional clarification can be added to any similar text included in the FS.

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No.	Review Document	Page/ Figure/Table	Comment Text	Category	Response
6	Identification of COCs and Contaminant Mobility	Page 3, FS TZW Screening.	It is inappropriate to only screen the TZW samples from depths less than 38 cm. All TZW samples should be screened since they represent the potential of contaminated groundwater to pose an unacceptable risk at the site and may require special design considerations in the draft FS (e.g., reactive cap vs. engineered cap, contaminant monitoring during dredging, etc.).	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding that identification of COCs should flow out of the baseline risk assessments, and the baseline risk assessments excluded deep TZW so this is a reversal. The BERA Problem Formulation says: "Per agreement with EPA, TZW data evaluated in the BERA was (*sic*) limited to shallow (0-38 cm) TZW, as any contact with TZW by ecological receptors would be limited to the surface biologically active zone, which is limited to the upper 10 to 20 cm of the shallow TZW." The comment appears to be inconsistent with prior understandings. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
7	Identification of COCs and Contaminant Mobility	Page 2, FS Surface Water Screening, 1 pp.	It is unclear why the LWG is proposing to screen individual samples one way and depth-integrated samples another. The same approach for screening should be used for both – screen against SDWA non-zero MCLGs, and in their absence, SDWA MCLs and tap water RSLs.	Disagree. Schedule. Potential Inconsistency.	We have been proceeding with the understanding from EPA's February 9, 2010 response letter to the LWG, which states: "The draft FS must include the chemicals present in near bottom surface water samples above Region 6 tap water PRGs and/or SDWA MCLs when assessing contaminant mobility during the evaluation of remedial action alternatives in the draft FS for the Portland Harbor site, and must demonstrate that depth integrated samples in areas where near bottom samples exceed Region 6 tap water PRGs and/or SDWA MCLs will meet the threshold criteria of protectiveness and compliance with ARARs." The comment appears to be inconsistent with prior understandings. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
8	Identification of COCs and Contaminant Mobility	Page 3, FS TZW Screening.	In the nine areas where TZW samples were collected because of expressed groundwater plumes, it is appropriate to use this methodology. However, there are many more groundwater plumes that may be expressing into the river sediments where pore water samples have not been collected. For areas outside groundwater plumes, the LWG has indicated that analytical results from bulk sediment samples would be used to evaluate potential toxicity in sediment pore water and there is no need to use equilibrium partitioning or any other method to estimate pore water concentrations where only sediment samples have been collected (i.e., no TZW samples). It is unclear how the LWG intends to evaluate TZW in other areas expressing groundwater plumes.	Disagree. Schedule. Potential Inconsistency.	It is unclear what other "expressing groundwater plumes" EPA is referring to. We have been proceeding with the understanding that TZW screening would be conducted for areas where we have TZW data only. The comment appears to be inconsistent with prior understandings. Please clarify whether the LWG is misinterpreting the comment or EPA is giving the LWG new direction.
9	Identification of COCs and Contaminant Mobility	Page 6, Table 4.	"Total Dioxin TEQ" should be "Total Dioxin/Furan TEQ."	Agree	

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10	Identification of COCs and Contaminant Mobility	Page 6, Selection of Indicator Contaminants.	It should be made clear that the indicator contaminants are those posing site-wide risks that will be used in the fate and transport model for contaminant mobility evaluation (i.e., time-to-recovery evaluation for FS). The memorandum should cite the documents used to develop these indicator contaminants and the development of the Fate and Transport Model. The second paragraph seems to indicate that they were developed based on mobility, toxicity, and persistence. While this may be true, these were not the only COCs that presented this and this list was developed based on negotiations between EPA and the LWG looking at COCs that were site-wide, bioaccumulated in tissue, and represented a chemical class of pollutants.	Disagree with some issues in comment.	Additional documents regarding development of the indicator contaminants can be cited in the FS. Not all indicator contaminants pose site-wide risk; several are SMA specific (e.g., chlorobenzene, vinyl chloride, benzene)
11	Identification of COCs and Contaminant Mobility	Page 7, Identification of Contaminant Mobility, 3rd bullet.	This needs be state "SDWA non-zero MCLGs, and in their absence, SDWA MCLs and tap water RSLs" rather than "Drinking water MCLs"; statement in parenthesis is acceptable.	Disagree. Schedule.	There is no difference in non-zero MCLGs and MCLs for these indicator chemicals. We disagree that RSLs are appropriate criteria for evaluating cap, CAD, or CDF effectiveness.
12	Identification of COCs and Contaminant Mobility	Page 7, Table 5.	The title of the table should be "Indicator Contaminants Selected for Contaminant Mobility Evaluation in FS."	Agree	The LWG will change the title of the table accordingly in the draft FS.
13	Identification of COCs and Contaminant Mobility	Page 8, Table 6, Human Health Water Consumption column.	This column should be comprised of SDWA non-zero MCLGs, and in their absence, SDWA MCLs and tap water RSLs" rather than just "Drinking water MCLs".	Disagree. Schedule.	There is no difference in non-zero MCLGs and MCLs for these indicator chemicals. We disagree that RSLs are appropriate criteria for evaluating cap, CAD, or CDF effectiveness.