

September 15, 2002

U.S. Army Corps of Engineers
Portland District
CENWP-EM-E ATTN: Bob Willis
P.O. Box 2946
Portland, Oregon 97208-2946

Re: **Draft Supplemental Integrated Feasibility Report and Environmental Impact Statement for the Columbia River Channel Improvement Project (SEIS)**

Northwest Environmental Advocates (NWEA) appreciates the Army Corps of Engineers (Corps) agreement that the agency was required to issue a Draft Supplemental Integrated Feasibility Report and Environmental Impact Statement for the Columbia River Channel Improvement Project (DSEIS). However, the DSEIS, as proposed, is so deficient in so many respects that it does not begin to remedy the deficiencies discussed by NWEA and others in comments provided in response to the previously-released draft and final Integrated Feasibility Report and Environmental Impact Statement for the Columbia River Channel Improvement Project as well as other regulatory documents related to the underlying project.

I. Public Disclosure

Under federal law, the DSEIS is to serve two key purposes. The first is to require federal agencies thoroughly and objectively to investigate, evaluate and disclose environmental consequences associated with any major federal action in sufficient detail to assist the agencies in determining whether and how to proceed with a proposed action. The second is to provide the public with a full and accurate disclosure of the likely environmental impacts of a proposed action, thereby encouraging full public involvement in the development of such information. *See, e.g., Baltimore Gas and Electric Company v. NRDC*, 462 U.S. 87 (1983). In order to fulfill these purposes, an EIS must describe the purpose and need for the proposed action, analyze the direct and secondary environmental and economic impacts of a range of alternative means to fulfilling that purpose, and, if mitigation, is proposed, analyze the effectiveness of the proposed mitigation.

A. Failure to Timely Provide Requested Information Renders Full Public Participation Impossible

NWEA is hampered in its ability to respond to this DSEIS within the time frame allowed for public comments due to the ongoing failure of the Corps and other federal agencies, namely the National Marine Fisheries Service (NMFS), to timely respond to numerous requests for documents made pursuant to the Freedom of Information Act (FOIA). In fact, FOIA requests made to both the Corps and to NMFS as far back in time as May of

this year have not been fully or, in some cases, even partially responded to. The Corps has responded with documents to only three requests. It has provided one seven-page document copied from the previous FEIS for the project in response to a request regarding various aspects of the relationship of the depth of the MCR to the 43-foot channel. It has provided four pages in response to a request for all financial work sheets on annualized costs. And, it has provided a copy of a specific study requested by name. For this reason, we request that you extend the timeframe for public comments until such time as information requested and required to fully understand the Corps' own report is made publically available.

Likewise, five days before the close of the comment period the Corps issued the "Technical Review of the Benefit and Cost Analysis in the Draft Supplemental Integrated Feasibility Report and Environmental Impact Statement Dated July 2002: Summary Report of the Technical Review Process and Results," September 9, 2002. It is unreasonable to expect the public to review this document, which is highly critical of the Corps' benefits analysis at such a late date. Moreover, due to the timing of this outside review, nothing in the DSEIS indicates, let alone incorporates, the Corps' response to this document. Notwithstanding the obvious limitations of the review process, the panel evaluating the reasonableness of the alleged benefits of the project raised many questions and cast many doubts. To prevent public access to this information during the period when the public is allowed to comment on the SEIS is to preclude providing the public with full disclosure of biases, contradictory information, professional analyses, etc. identified by these experts that would assist it in commenting. To request that the public comment on the DSEIS when the Corps itself has remained silent about the findings of the panel, is unfair. On these bases, we also request that you extend the timeframe for public comments on the DSEIS.

B. Failure to Develop Necessary Data and Information Upon Which Analyses Rely Defeats the Public Disclosure Purposes of NEPA

Public disclosure in the process of developing an EIS is also seriously hampered when the Corps has not completed the studies that are necessary to fully evaluate the cumulative effects of the proposed action. For example, twenty years ago, Washington state requested the Corps perform studies on the following issues:

1. Potential mitigation measures need to be selected and evaluated so losses can be replaced.
2. Impact of salinity changes on the 151,000,000 plus salmonids migrating downstream annually must be evaluated for such things as:
 1. Are there sufficient other areas for these fish to condition their osmoregulatory systems to salt water? If not, what happens to them since fish are already stressed out when they enter salt water?
 2. Does changing areas where fish condition themselves to salt water impact timing of movement into ocean?
 3. How much food will be lost in places like Youngs Bay and what will this do to overall production?

3. Before and after habitat inventories should be done in places such as Youngs Bay where salinity could change and effect types of vegetation. These impacts to wildlife from changes should be evaluated.

Letter to Joseph R. Blum, U.S. Fish & Wildlife Service from James G. Fenton, Washington Department of Game, July 29, 1982. Likewise, twenty years ago the U.S. Fish and Wildlife Service recommended the following studies be conducted in order to “obtain adequate information on significant impacts of this proposed [MCR deepening] project”:

1. Existing salinity data (from the Corps of Engineers, CREDDP, and NOS) should be evaluated.
2. A numerical model, to be used to predict salinity distribution changes, should be developed from the data evaluated in recommendation 1.
3. If a significant change in salinities is indicated, then biological studies of key species in Youngs Bay should be initiated.
4. Previously undredged materials should be tested for grain size, heavy metals, and other contaminants.
5. Studies should be undertaken to determine the possibility of entrainment of juvenile Dungeness crab, rates of entrainment, and location and timing of migration across the bar.
6. Consideration should be given to initiation of a study to determine the timing and migration over the bar of juveniles of commercially important marine fish.
7. Effects of disposal on the present offshore disposal sites should be determined, especially the physical aspects.
8. Studies should be initiated for the identification of one or more additional offshore disposal sites. Alternative disposal methodologies should also be explored.

Letter to Colonel Robert L. Friedenwald, Army Corps, from Russell D. Peterson, U.S. Fish and Wildlife Service, August 27, 1982.

Nine years ago, NMFS told the Corps that “studies should be conducted to determine timing restrictions and the best blasting techniques practicable for reducing fish kills from blasting in large river systems,” [studies] to address the probably increase in salinity of the estuary and its effect on important fishes,” and “[studies] to better understand the habitat value of the proposed disposal areas and to determine the best ways that these habitats can be duplicated.” Letter from Merritt E. Tuttle, National Marine Fisheries Service to Colonel Charles E. Cowan, Army Corps of Engineers, September 7, 1990 at 1, 2.

These three examples are just a few among many requests made by local, state, and federal agencies to the Corps for additional data and analysis, many of which were made one to two decades ago. Today, the Corps reports it is in the middle of a three year study on white sturgeon. It is obtaining additional information on Dungeness crab. It has not, however, completed those

studies despite the issuance of the DSEIS for public comment. It has yet to respond to the requests from the State of Oregon for answers to questions and concerns about the entrainment risks and impacts to white sturgeon, the impacts of the project on smelt, the impacts of disposal on sturgeon rearing habitat in the estuary, the ocean disposal sites, the effects of ocean disposal on the development of unsafe wave activity, how the Corps intends to use so-called “adaptive management” to monitor and address problems with the deep water site, the lack of baseline biological information for the deep water site, effects of dredged spoil disposal on the crab fishery, etc. The failure of the Corps to conduct studies both at all, and specifically in advance of the development of final environmental impact statements, is an on-going and long-term problem that is contrary to the requirements of NEPA, the Clean Water Act, the Endangered Species Act, the Coastal Zone Management Act, and other federal laws. While some or all agencies may be willing to allow the Corps to study issues for which insufficient data and information exist to issue conclusive findings, the law requires the development of this information in advance of the proposed action. In point of fact, the Corps cannot argue that these issues are new concerns that it can only attend to in the future. Its failure to respond to the issues in the past is its own fault. The public, other agencies, and the environment should not be made to pay for the Corps’ recalcitrance. The lists above are not an exhaustive catalogue of all of the concerns and questions and requests for data and analysis made by local, state, and federal agencies. They are merely illustrative. Many of these and other issues are over twenty years old and yet remain, not only unanswered but entirely unaddressed by the Corps.

C. Failure to Fully Respond to Public Comments on FEIS, DEIS, and Other Regulatory Documents Renders the DSEIS Inadequate

As with the requests made by numerous local, state, and federal agencies, some but not all of which are discussed above, the Corps has failed once again, in its DSEIS, to respond to the comments made by members of the public on the FEIS and the DEIS for this project, and on similar regulatory documents for related proposed projects, including operation and maintenance dredging for the river and the MCR. It defies imagination why the Corps does not believe that it is required to respond in a scientific and meaningful way to these comments and it underscores the extreme cynicism that is being displayed, not only by members of the public but by representatives of other government agencies. It is time that the Corps recognize it can no longer flaunt the requirements of federal law with impunity.

D. The Proposed Adaptive Management Scheme is Not Based on Baseline Information, a Monitoring Program, Clear Project Responses to Identified Problems, or an Established Remedy to Overall Project Failure to Protect the Environment

The proposed adaptive management scheme in the DSEIS is a flawed response to the Corps’ ongoing failure to obtain sufficient information to meet the requirements of NEPA, and other federal laws that require information and analysis in advance of an environmentally destructive and costly project such as the proposed channel deepening. Although agreed to by NMFS, in an egregious abdication of its responsibilities pursuant to the Endangered Species Act, the proposed

adaptive management approach is intended to overcome the Corps' having failed to produce basic information regarding much of anything related to likely project impacts. In the absence of baseline information, which, as discussed elsewhere in these and others' comments, is absent with regard to many issues, the adaptive management approach cannot know what negative impacts are unacceptable nor be able to detect them.

Likewise, the Corps has not demonstrated that small incremental negative effects are either tolerable, given the highly degraded state of the estuary and the status of many species, or measurable. If they are not tolerable when measured against the baseline conditions -- an analysis the DSEIS fails to conduct -- but they are not measurable, the proposed adaptive management scheme is no more than a hoax. It certainly cannot be thrust forward as a solution to either inadequate analysis or unacceptable project impacts. Similarly, the DSEIS cannot rely upon a monitoring program that, despite plenty of interagency activity (excluding, as we understand it, the state agencies), has yet to be developed. The public cannot comment on the benefits of proposed adaptive management which itself relies wholly on detection of impacts, if there is no information on how those impacts will be identified or the level of commitment that will be made by the Corps to monitoring. The proposed monitoring scheme, to the extent that it is set out in the DSEIS and other project documents, only demonstrates a completely inadequate longevity to the monitoring, given the time frame in which project effects are likely to appear and the length of the project itself, and a completely inadequate frequency of monitoring. It is clear that NMFS has simply capitulated to the desires of the Corps to continue its multi-decade approach to learning as little about the Columbia River Estuary and the impacts of its many projects as it can.

Finally, the DSEIS does not establish clear project responses to problems that may be identified but rather suggests that the public should once again trust the same agencies that have cut this and previous deals on the Columbia River navigation and power system to solve those problems. This is unacceptable particularly in light of the extremely high environmental and economic cost associated with pushing threatened and endangered species to the brink of extinction. Finally, the DSEIS has entirely failed to explain what a possible remedy could be if the project fails to protect the environment. Is the Corps proposing that if the project is found to exacerbate the current unacceptable ecosystem impacts of dredging and other related projects that it will allow the three feet to fill back in?

E. NEPA Law Requires New Analysis Where There is New Science

NEPA case law requires new analysis where there is new science. The EIS for the MCR was finalized in 1983. Since that time significant new science and new information have become available that the Corps is required to incorporate in a supplement to the existing EIS. Safe transit issues related to the MCR have been significantly altered since 1983 by the Corps own actions. The deepening of the bar, along with dredging disposal locations and methods, have altered the dynamics of the MCR making previous studies obsolete. Likewise, there is new science on the effects of toxic contaminants on salmon which is completely ignored in the DSEIS.

II. Cumulative Effects Analysis is Required.

A. A Comprehensive EIS is Required Where Several Proposals Have Cumulative or Synergistic Effects and Direct and Reasonably Foreseeable Indirect Effects Must be Considered in the DSEIS.

Federal law requires the Corps to evaluate a project's direct, indirect and cumulative impacts, including "impacts on the environment which result from incremental impact on the action when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7. The Corps is obligated to identify "all other actions—past, proposed, and reasonably foreseeable—that have had or are expected to have impacts in the same area" and "the overall impact that can be expected if the individual impacts are allowed to accumulate." *City of Carmel-by-the-Sea v. United States Dep't of Transp.*, 95 F.3d 892 (9th Cir. 1996). Despite these federal requirements, the Corps continues to omit identification and analysis of the effects of past, current, and future actions that affect the same area, the species that use the area, and the economics related to the project area.

Cumulative impact "is the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions." 40 C.F.R. §1508.7. Cumulative impacts are one of the factors in determining the significance of the action. "Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment." 40 C.F.R. §1508.27(7). Significance of proposed action requires evaluation of effect on society, nation, region, locality, and affected interests.

Recent Ninth Circuit cases stress the importance of cumulative impacts discussion in NEPA analysis, and have remanded assessments back to the agencies for failure to complete adequate cumulative effects analysis. *See Blue Mountains Biodiversity*, 161 F.3d 1208, 1214-16 (9th Cir. 1998) (reversing and enjoining timber sale evaluated under EA for failure to consider cumulative impacts); *Carmel by-the-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1160-61 (9th Cir. 1997) (ordering Federal Highway Administration to re-evaluate its cumulative impacts analysis for a highway project in California because EIS "“fails both to catalogue adequately past projects in the area, and to provide useful analysis of the cumulative impacts of past, present and future projects and the [proposed project]”"); *Muckleshoot Indian Tribe v. USFS*, 177 F.3d 800, 811 (9th Cir. 1999) (enjoining Forest Service land exchange for failure to consider cumulative impacts, and rejecting Forest Service analysis which amounted to "“very broad and general statements devoid of specific, reasoned conclusions”"); *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1152 (9th Cir. 1998) (noting that "“sparse”" discussion of cumulative impacts in a timber sale EA may be inadequate, but enjoining sale on other grounds). In *Neighbors of Cuddy Mountain v. USFS*, 137 F.3d 1372 (9th Cir. 1998) the court enjoined Forest Service timber sales for deficient cumulative impacts analysis. The Ninth Circuit stated in plain terms what NEPA requires of cumulative impacts analysis: to "consider" cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in

reviewing the Corps decisions, can be assured that the Corps provided the hard look that it is required to provide. *Id.* at 1379.

1. The Corps has Improperly Segmented Columbia/Willamette/Snake Navigation Projects in its NEPA Reviews

NEPA requires that proposals "which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement." 40 C.F.R. 1502.4(a). A NEPA document is supposed to analyze the impacts of "[c]onnected actions," including actions that are "interdependent parts of a larger action and depend on the larger action for their justification." *Id.* §1508.25(a)(1). In the instant case, the "larger action" is at the very least the Corps' decision to maintain the entire Columbia/Willamette/Snake navigation channel. As each portion of this channel, including berths and basins, is "upgraded" by increasing its depth each is an "interdependent part" of that larger action and therefore must all be addressed together in one NEPA document. NEPA requires the government to prepare a comprehensive impact statement if several projects are significantly interdependent. *Kleppe v. Sierra Club*, 427 U.S. 390, 408, 96 S. Ct. 2718, 2730, 49 L. Ed.2d 576, 590 (1976). For example, the Ninth Circuit and other courts have time and again rejected segmentation of road projects, and have remanded to the agencies for preparation of a comprehensive NEPA document. *See, e.g., Daly v. Volpe*, 376 F. Supp. 987 (W.D. Wash.1974), *aff'd*, 514 F.2d 1106 (9th Cir. 1975); *Named Individual Members of San Antonio Conservation Soc. v. Texas Highway Dept.*, 446 F.2d 1013 (5th Cir. 1971), *cert. denied*, 406 U.S. 933, 92 S. Ct. 1775, 32 L. Ed.2d 136 (1972); *Swain v. Brinegar*, 517 F.2d 766 (7th Cir. 1975); *Swain v. Brinegar*, 542 F.2d 364 (7th Cir. 1976); *Indian Lookout Alliance v. Volpe*, 484 F.2d 11, 16 (8th Cir. 1973); *Ecology Center of Louisiana v. Coleman*, 515 F.2d 860 (5th Cir. 1975); *Sierra Club v. Volpe*, 351 F. Supp. 1002 (N.D. Cal.1972); *Dickman v. City of Santa Fe*, 724 F. Supp. 1341 (D.N.M. 1989); *Appalachian Mountain Club v. Brinegar*, 394 F. Supp. 105, 114 (D.N.H. 1975); *Conservation Society of Southern Vermont v. Secretary of Transportation*, 362 F. Supp. 627 (D. Vt. 1973), *aff'd*, 508 F.2d 927 (2d Cir. 1974), *vacated on other grds*, 423 U.S. 809, 96 S. Ct. 19, 46 L. Ed.2d 29 (1975); *Thompson v. Fugate*, 347 F. Supp. 120 (E.D. Va. 1972); *Committee to Stop Route 7 v. Volpe*, 346 F. Supp. 731 (D. Conn.1972); *Citizens Expressway Coalition v. Lewis*, 523 F. Supp. 396 (E.D. Ark. 1981). *See also Thomas v. Peterson*, 753 F.2d at 758-60 (EIS for road must address other projects related to the road, such as timber sales); *Save the Yaak Comm.* 840 F.2d 714 (same). Deepening portions of a river/estuarine system that the Corps has arbitrarily divided into separate units, and analyzed as separate entities, is identical in its effect on both the environment and the NEPA process as segregating portions of road development.

At the very least, the dredging projects of the MCR, the upriver portions of the Columbia, the Willamette, and the proposed project should be addressed together in a single NEPA document. The river channel cannot be used without the MCR, the navigation system not fully utilized without the upstream segments dredged, the value of continued shipping to the Port of Portland not realized without the Willamette. Yet in no NEPA document has the government analyzed the Columbia/Willamette navigation system in its entirety. Instead, it has committing the classic NEPA segmentation violation by preparing separate EAs and EISs for each separate project.

Courts have noted that taking this piecemeal approach when analyzing road impacts avoids consideration of the environmental costs and a thorough study of alternatives. One court wrote:

National environmental policy requires a detailed analysis of the long-range environmental costs of proposed action and a thorough study of the available alternatives before any action is taken. Planning and building highways in a piecemeal fashion threatens to frustrate this policy by allowing a gradual, day-to-day growth without providing an adequate opportunity to assess the overall, long-term environmental effects of that growth. . . . Placement of one highway segment tends to limit the range of alternatives for placement of succeeding segments. . . . As a practical matter, commitment of resources in one section tends to make further construction more likely.

Patterson, 415 F. Supp. at 1282. The fact that there are several maintenance projects planned for this system is evidence that improper segmentation is occurring. *Id.* at 1283.

The courts have considered three criteria in deciding whether a NEPA document has considered a proper length of highway: (1) whether the segment connects logical termini; (2) whether the segment has an independent utility; (3) whether the length of the section assures an adequate opportunity for consideration of the alternatives to the proposed action (both whether and where to build). *Daly v. Volpe*, 376 F. Supp. 987 (W.D. Wash.1974), *aff'd*, 514 F.2d 1106 (9th Cir. 1975); *River v. Richmond Metropolitan Authority*, 359 F. Supp. 611, 635 (E.D. Va), *aff'd*, 481 F.2d 1280 (4th Cir. 1973); *Sierra Club v. Froehlke*, 534 F.2d 1289 (8th Cir. 1976). The various dredging projects at issue, including the proposed channel deepening, only make sense when they are considered together. Therefore, the Corps is required in its DSEIS to analyze these segments together in one combined NEPA document.

a. The Federal Columbia River Power System is a Required Part of the Cumulative Effects Analysis

In the DSEIS, the Corps has failed to evaluate the cumulative effects related to the Federal Columbia River Power System (FCRPS). The FCRPS actions will occur directly upriver from the proposed channel deepening project; as part of the same Columbia River ecosystem, FCRPS actions will have foreseeable cumulative effects when considered in conjunction with the channel deepening project. In particular, FCRPS actions affect the health of the Columbia River estuary, as does the proposed project. If the Corps has underestimated the actual effects of the proposed FCRPS actions, the estuary may be in significantly worse condition at the time of channel deepening than has been assumed in the DSEIS. If it fails to execute the proposed FCRPS actions, it will surely be in worse condition. The environmental impacts of the FCRPS actions and the channel deepening project cannot be evaluated in isolation; as a result, the Corps has improperly excluded the FCRPS actions from its assessment of the cumulative impacts associated with channel deepening.

The DSEIS must address the impacts of oil spills, leaks, and discharges from Columbia River

dams operated by the Corps. Oil, in addition to containing PCBs historically, contains PAHs which have been shown in recent studies done by NMFS following the Exxon Valdez spill, to far exceed present-day notions of safe levels for salmon and to have rendered current water quality criteria entirely irrelevant.

**b. Willamette River Toxic Contamination is a Part of the
Required Baseline Conditions**

NEPA requires that the Corps take past, present, and reasonably foreseeable future activities into account in its analysis. To segregate the evaluation of the Columbia and Willamette channel deepening projects is to seriously jeopardize the integrity of the analysis. The effect of activities and pollution within the Willamette flow directly into the Lower Columbia River and indirectly to the Columbia through the Multnomah Channel. The Willamette is a substantial source of Lower Columbia River pollution, even in the absence of the proposed project. *See e.g.*, Lower Columbia River Bi-State Program, Reconnaissance Survey of the Lower Columbia River, Task 2 Data Analysis Report, March 4, 1992, at 119. There is no doubt that the Willamette River is a substantial source of the toxic contaminants that are causing violations of Oregon water quality standards in the Lower Columbia, discussed below. This is true regardless of whether the toxins pass into the Columbia in the water column or bound to sediments. The unacceptably high levels of toxic contamination in the estuary are largely the result of upstream pollution, including from the Willamette. Information now exists that the Lower Willamette River is more contaminated than previously believed and, in fact, is contaminated sufficiently to have been designated a federal Superfund site. Regardless of the clean-up approach chosen, substantial pollution loads are likely to enter the Columbia River in the near future, during the life of the proposed channel deepening project. Therefore, the proposed project must be evaluated in conjunction with these imminent new loadings of toxic pollutants, rather than in feigned ignorance of them. Instead, the DSEIS takes the position that they are irrelevant.

The Corps does not yet have sufficient information about the nature and extent of this Willamette River contamination upon which to evaluate the risk posed to Columbia River beneficial uses. *See e.g.*, National Oceanic and Atmospheric Administration (NOAA) Preliminary Natural Resource Survey for the Lower Willamette River, September 8, 1999 at 18. NOAA found that it could only make preliminary findings about the risks posed to natural resources in the Willamette River because it lacks three areas of information necessary to make a complete evaluation. Those are as follows: 1) “there is little comprehensive information regarding the areal and temporal distribution of contaminants,” 2) “there is little information about the toxicity of site-related substances to the aquatic species of interest to NOAA,” and 3) “little is known about the effects of exposure to the combination of substance that may be in the study area.” *Id.* at 18-19. The same analysis of risks to beneficial uses, including but not limited to the threatened and endangered species that are the topic of NOAA’s primary concern, is necessary for the Corps to determine the costs associated with the proposed project.

There are at least three ways in which the Corps’ failure to evaluate the effect of the Willamette undermines its analysis of the Columbia. First, there are bird and mammal species that use both

rivers as food sources,. Second, species that transit both rivers are subject to contamination from both. Third, there are additional loadings to species that use the depositional areas of the estuary or are dependent upon biota that are contaminated by depositional areas. For example, analyses of the effect of toxic contaminants on out-migrating salmonid must evaluate the duration of the exposure. Salmonids using both rivers will receive different exposures than those that do not. Studies on Puget Sound salmonid have demonstrated that use by juveniles of contaminated habitat for just three weeks causes a range of disorders including immune deficiency problems. The duration of exposure to toxic contaminants of salmonid stocks rearing in the Willamette River could be longer depending upon the status of the dredging project. The amount of biologically-available toxins in the Lower Columbia River will be increased if the Willamette River shipping channel is also deepened. On the basis of existing information about contamination of the Willamette, including but not limited to shipping berths and turning basins, this increase would likely be significant. The additional toxic loading to the Columbia must be evaluated. Finally, species, such as birds, that use both rivers as a source of food will be affected by the two projects being done in tandem as well as if only the Columbia portion moves forward. The DSEIS simply cannot pretend these issues away.

Even if the Willamette portion of channel deepening does not go forward, some form of remediation, whether removal or capping will have to be done. Any decision to remove sediments from specific sites and/or the river will result in contributions of toxic contamination to the Lower Columbia River. Any decision not to remediate will result in storm-driven contributions downstream. Any decision to cap sediments will also have an impact on beneficial uses. To proceed with channel deepening in complete ignorance of the likely toxic burdens on species, including threatened and endangered species whose status has already been made more precarious by this particular form of environmental pressure, is contrary to the requirements of federal law. Even without complete knowledge about the Portland Harbor, its contaminants, the levels of those contaminants, and the clean-up options that will be chosen, the Corps is fully capable of obtaining sufficiently improved data upon which some analysis could inform the DSEIS process.

c. Columbia, MCR, Willamette, and Snake River Operation and Maintenance Dredging, Berth & Turning Basin Dredging, and Dredge Spoil Disposal Must be Evaluated Together for Their Cumulative Impact on the Ecosystem and Speices

The Columbia, MCR, Willamette, and Snake River operation and maintenance dredging, berth and turning basin dredging, and dredge spoil disposal must be evaluated together for their cumulative impact on the affected ecosystem and the affected species

3. The EIS for the Mouth of the Columbia River is Grossly Outdated and a Supplemental EIS is Required

In response to public comments on the Environmental Assessment for Maintenance Dredging at the Mouth of the Columbia River New Disposal Site, Oregon-Washington, May 2002, the Corps

states that its 1983 MCR EIS “adequately addresses the requirements under the National Environmental Policy Act for maintenance of the MCR entrance channel to its currently authorized depth.” As discussed at length below, the 1983 document is grossly outdated and no longer – if it could even be argued that it was ever sufficient – remains a sufficient basis upon which to continue MCR projects. NEPA case law requires that the Corps update this document with a supplemental EIS.

In addition to the issues discussed elsewhere in these comments, the shipping channel at about river mile 4-5 is experiencing a severe migration to the north. The Corps has remained silent about this change in the channel and whether it intends to alter the location of the existing channel on paper or in the river. In response to a Freedom of Information Act (FOIA) request sent by NWEA on August 12, 2002 the Corps responded to a request for documents question regarding this change in channel alignment by stating it had no documents. That answer, however, defies belief. If lay people and commercial users of the channel are discussing the problem, how could the Corps not have any documents whatsoever regarding it? The Corps has an outstanding requirement pursuant to NEPA to prepare an EIS discussing the environmental and economic ramifications of either realigning the channel or redredged where it was designed to be, both in terms of dredging and spoil disposal.

4. The Corps has not Complied with NEPA Regarding Ocean Disposal Sites

Public comment in response to the Environmental Assessment for Maintenance Dredging at the Mouth of the Columbia River New Disposal Site, Oregon-Washington, May 2002, requested that the Corps prepare and EIS for the MCR including ocean disposal sites. In response, the Corps stated that the combination of its extremely outdated 1983 MCR EIS, Environmental Assessments in 1993 and 1997 for expansion of ocean dumping sites, and the 1999 EIS for the channel deepening project were sufficient to address the requirements of NEPA with regard to ocean disposal sites. A determination of significance of the impact of an action is the basis for determining whether an EIS is required to designate ocean disposal sites. The Corps has determined that there will be no significant impact on the environment by designating an ocean disposal site. It has done this in the absence of any baseline data on the populations of crab that depend on the 14-15 square miles the Corps and U.S. Environmental Protection Agency (EPA) are proposing to designate. Yet, ocean disposal in essence sterilizes the an active dump site (and beyond) for commercial crab production. For example, at Site B, the loss of production has been over 90 percent. We understand the Corps is conducting an inventory of crab in the ocean at two sites (deepwater and site E), yet site E has now been used for 5-6 years so it is now impossible to obtain a pre-dump abundance level at and beyond the site. These, and many other issues regarding ocean dumping, have been set out by numerous commenters in the last few years. However, the Corps has failed to address significant issues related to the environmental and economic impacts of the ocean dumping sites in the combination of these documents. Therefore, the Corps is required to prepare a Supplemental EIS for ocean disposal.

B. The Past: Establishing Baseline Conditions is Essential to Comply with NEPA's Requirements to Evaluate the Cumulative Impacts of Past, Present, and Reasonably Foreseeable Future Actions

The Corps is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 CFR § 1502.15. The establishment of the baseline conditions of the affected environment is a practical requirement of the NEPA process. In *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir.1988), the Ninth Circuit stated that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." The Council of Environmental Quality has agreed: "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." Council of Environmental Quality, *Considering Cumulative Effects under the National Environmental Policy Act* (May 11, 1999). The CEQ also stated:

Characterizing the affected environment in NEPA analysis that addresses cumulative effects requires special attention to defining baseline conditions. These baseline conditions provide the context for evaluating environmental consequences....The description of the affected environment...should include all potentially affected resources, ecosystems, and human communities.

<http://ceq/eh/doe/gov/nepa/ccenepa/ccenepa.htm>. Without any discussion of the baseline conditions, the foreseeable environmental consequences of a Corps decision pursuant to this SEIS will have failed to use the adequate information to make a reasoned decision or take a "hard look" as required by NEPA.

1. Baseline Conditions Include Changes in Sediment Transport, Erosion, and Accretion

The DSEIS does not discuss the significant and controversial issues regarding the total amount of sediment removed from the estuarine/near shore system. Therefore, it omits discussion of possible erosion of ecosystem features in the estuary as well as the economic and environmental ramifications of erosion of Longbeach. The DSEIS does not, nor does any other project document, address the cumulative effect of past and present dredging and other projects that have affected sedimentation processes within the estuary and near/shore area, including the creation of the MCR channel and the installation of the jetties. The Corps has not even obtained a complete and up-to-date bathymetric survey of the estuary. Despite the brevity of this paragraph, we cannot emphasize enough the importance of this issue and the serious deficiency of the DSEIS in not addressing the issues of sedimentation processes.

2. The Evaluation of Increased Salinity Intrusion Caused by the Proposed Project Must be Based on Sound Science and Done in Conjunction with the Appropriate Baseline Conditions Caused by Past Actions

Salinity intrusion is a key issue with regard to the overall ecosystem functioning of the Columbia River Estuary as well as its effect on individual species, including threatened and endangered species and the food chain upon which they depend. The Corps has never evaluated the effects of baseline conditions of salinity intrusion on the action area and has not remedied this failure in the DSEIS. Salinity intrusion associated with deepening the MCR to 55 feet was evaluated in the 1983 MCR EIS but only as an incremental change to the then-existing conditions. The Corps failed in that analysis to evaluate the baseline conditions of salinity intrusion but restricted its analysis to the incremental effect of additional salinity intrusion caused by that particular proposed project. Likewise, because the effects of other actions, such as construction of the jetties, has not been evaluated at all or fully in previous environmental impact statements, the Corps must conduct that evaluation in order to construct the baseline conditions upon which the proposed channel deepening will be added. To the extent that the current DSEIS relies upon any previous flawed analyses, it too then constitutes a flawed basis upon which to conduct a cumulative impacts analysis.

3. Baseline Conditions Include Loss of Estuary, Riverine, and Ocean Habitat

The Corps, and NMFS, have given lip service to the issue of habitat losses in the Lower Columbia River, including from Corps projects. However, neither agency, including in the DSEIS, has drawn any conclusions about what this exceedingly degraded baseline means for the ecosystem, the species that depend upon it, or the impacts of further degradation caused by the proposed channel deepening project. Deep shipping channels carved into the river bed have diverted the nutrient-rich clouds of biota upon which salmon and other species rely. Nine years of data on the Lower Columbia River on the Estuarine Turbidity Maxima (ETM) show that this cloud of organic material has been displaced; it is now trapped within the 40 foot-deep shipping channels instead of spread out across the river bottom. Under normal circumstances, the ocean would keep the material suspended and churning in the turbidity maxima where organisms have an opportunity to feed on it and pass it up the food web before it gets washed out to sea.. The organic detritus is fed on by bacteria, which are in turn fed on by copepods, an important food source for salmon, sturgeon and other aquatic species. Simenstad, et al, 1990, Consumption processes and food web structure in the Columbia River estuary. *Prog. Oceanogr.* 25:271-298; Wissmar and Simenstad 1998, Variability of estuarine and riverine ecosystem productivity for supporting Pacific salmon; G.R. McMurray and R.J. Bailey (eds.) *Change in Pacific Northwest Coastal Ecosystems*; NOAA Coastal Ocean Program. Decision Analysis Series No. 11. Pp. 253-301. As the Science Center states, “[p]rey availability and habitat suitability within the estuary are strongly influenced by factors such as food web structure, including detrital food chains that support salmon production, the supply of nutrients and organic matter, and salinity and turbidity distributions.” Science Center memo, Appendix 1 at 4. The Center concludes: “Channel

deepening may also have critical effects on the estuarine turbidity maximum (ETM) and the detrital food chains that support salmon production. Fish and invertebrate community surveys in the Columbia River estuary provide strong evidence that the feeding environment for estuarine fishes is controlled by physical processes that promotes concentration of organic matter and the maintenance of zooplankton populations within the estuary (Bottom and Jones 1990). By altering salinity conditions and locations of the ETM, where organic matter is concentrated, channel construction may alter a key process that supports estuarine food chains.” Id. at 5.

This combination of changes in the river flow combined with the deep shipping channels have displaced this vital food source of the estuary both horizontally and vertically. This change affects the support of beneficial uses and will be exacerbated by the proposed project. The DSEIS is required to evaluate the likely detrimental effect of the project on resident biological communities through alteration of the ETM because the proposed activities will cause, in combination with other human activities, further impairment of ETM. This is particularly true given that threatened and endangered species depend upon this food web for their existence. See e.g., Science Center memo, Appendix 1 at 4-5. To fail to address the cumulative impacts of habitat impairment in the DSEIS is a violation of NEPA requirements.

4. The Corps Must Address Lack of Compliance with Existing State and Local Laws

The Corps is out of compliance with the Clatsop County Comprehensive Plan and the Oregon Coastal Program because it is using Welch Island for dredge spoil disposal, although it does not carry such designation in the CREST 1986 Columbia River Estuary Dredged Material Management Plan. It is presently zoned as Aquatic-2 for Aquatic Conservation. The Corps' history of dumping here has caused the area to become an upland site. The Corps plans to continue dumping on Welch Island with no mitigation, despite knowing that "Columbian white-tailed deer use occurs on the site," as well as "some nesting by passerine birds. * * * Placement of dredged material would destroy the limited wildlife habitat present and reduce wildlife use to minor levels." FEIS at 6-32. The Corps' disregard for local law and ignoring of conditions in previous §401 certifications for dredging of the Lower Columbia River, e.g. the Mouth of the Columbia River for 1997, must be factored into its analysis of reasonably foreseeable cumulative impacts.

5. MCR Operation and Maintenance Dredging

The only study and technical analysis upon which the discussion in the project FEIS refers is the Tetra Tech “Columbia River Entrance Channel Deep-Draft Vessel Motion Study” (VMS) prepared in 1980 and included in the 1983 EIS for the MCR deepening. The VMS is now outdated for two reasons. First, it was based on an older technology for determining the behavior of ships under conditions present in the MCR. The method was highly variable depending on the location of measuring instruments on the ships. This method of analysis has been superceded by methods using Global Positioning Systems (GPS). For example, in January 1998 a team of waterway design engineers, led by a 29-year Corps veteran, conducted an in-depth study of the

physics of water displacement for the Panama Canal using GPS technology. <http://www.orbi.net/pancanal/press/study.html>. While, at that time, it was reported that the technology for collecting such extremely accurate information had only just been developed, that was over four years ago. Yet, according to the Corps' response to NWEA's FOIA request of August 12, 2002, the agency has given no consideration whatsoever to improving the data upon which the MCR depth was originally chosen, ensuring its continuing validity, and establishing the compatibility of the MCR 55 foot channel with the proposed 43 foot river channel. Over 20 years have passed since the VMS was developed, necessitating a revision of the analysis. Chapter 2 of Appendix A to the FEIS is not based on new data or new studies but merely on conjecture and the DSEIS adds nothing on the subject.

The GPS technology is needed for, among other reasons, to determine vessel squat. Squat is affected by ship's shape, speed, and movement, by the depth of water under its keel, and by the movement and squat of other ships' vessels in the same vicinity. Squat is greatly influenced by a vessel's design and by the way it is loaded. Current understanding of squat now includes among the major factors that affect it as ship form and initial trim. It is very sensitive to the former, which alters where the maximum squat for a particular vessel is likely to occur. The original study did not use technology that was sensitive to the varying locations of data collection devices. Squat is also influenced by the speed of the vessel through the water with increased speed creating greater squat. The depth/draft ratio affects squat in that as water depth under the keel decreases, squat increases. Sudden changes in depth, such as sills and banks, increase squat, as does passing and overtaking, situations in which speed increases squat. Fluid density also affects squat with muddy bottoms decreasing squat and rock bottoms increasing it.

GPS also accurately measures a vessel's settlement, trim, roll, pitch, and heading and can provide the position of a vessel's keel to within 10 centimeters relative to the bottom of a shipping channel. In contrast, the VMS study by Tetra Tech sought to measure 53 vessel crossings of the bar. Two failed, leaving 51 data sets. Of these 51, only 23 included wave data due to equipment damage. MCR EIS at a-5. In addition, the vessel types used in that document's Table a-2 are now completely outdated.

Second, the discussion in FEIS Chapter 2 itself points to the need to reanalyze this crucial issue for safety and environmental reasons and to ensure that the 43-foot channel will be used as claimed in the DSEIS. As the Corps concludes in this document: "Given the conflict in information on excursions and bar closures, **there is much uncertainty in future MCR operations with a 43-ft river channel.**" Appendix A at 17 (emphasis added). This issue was not even placed before the Technical Review Panel analyzing costs and benefits of the proposed channel. Like the proposed river channel deepening, the deepening of the MCR to 55 feet was based, not on increased shipping but accommodating larger vessels and by decreasing the costs of shipping by alleviating delays. See, e.g., Appendix B at 5, 20, 21. Therefore, if the current 55 foot MCR inhibits in any way obtaining either or both the use of the river channel by larger vessels or decreased delays, the DSEIS analysis is inherently flawed. Further discussion regarding this issue is presented below.

6. Existing Water Quality Conditions are a Part of Baseline Conditions that Must be Considered in the Cumulative Impacts Analysis

The proposed project will cause alterations to the chemical, physical, and biological properties of the Lower Columbia River that can be predicted, in combination with other forms of pollution, to continue to render the waters unsafe for native species of fish and wildlife, and the food chains upon which they rely. The Corps has failed to consider the baseline condition of Columbia River water quality in its analysis of the cumulative effects of the action. Segments of the Lower Columbia River have been determined to be water quality limited -- i.e., violating water quality standards -- for the following parameters: temperature, bacteria, dissolved oxygen, pH, and toxics. 1998 Oregon §303(d)(1) List. In addition, Oregon and Washington have failed to list the Lower Columbia River for violations of water quality standards based on lack of beneficial use support and violation of narrative criteria. These violations include, but are not limited to, reproductive failure of bald eagles, probable reproductive failure of mink, toxic-induced deformities of river otter, tissue residue levels found in a variety of animals, and the threatened and endangered status of a large number of salmonids that is linked to anthropogenic changes in the Lower Columbia River. Therefore, not only is the Corps required to evaluate the effect of this baseline condition of numerous violations of numerous water quality standards upon the species and ecosystem, but it must then factor in the increased pollution from the proposed project in order to evaluate the cumulative impacts. The DSEIS does not discuss the baseline conditions but merely mentions that the effects of the proposed dredging will be temporary and insignificant.

The DSEIS ignores water quality issues but is the document upon which the Corps expects the states' water quality agencies to rely when they issue their 401 certifications for the project. In addition, the DSEIS does not recognize the shortcomings of the 401 process itself. The current numeric criteria Oregon and Washington apply to determine whether water quality standards have been violated, have been developed, with extremely few exceptions, to assess the "safe" level of pollutants to certain beneficial uses on a pollutant-by-pollutant basis. Nonetheless, as discussed elsewhere in these comments, these pollutants have additive and possibly synergistic effects on those uses. In addition, the "safe" level has been determined on the basis of what an ordinary population of a target species can tolerate. However, the populations of threatened and endangered, as well as candidate, species are not ordinary; they are severely depressed. As such they cannot be exposed to the same level of risk from pollutants, individually or collectively, as ordinary non-depressed populations. Even individually, not one numeric criterion for toxic chemicals in Oregon or Washington has been the subject of a consultation with the Services pursuant to the Endangered Species Act. In addition, Oregon has not updated its numeric criteria for toxics since their initial adoption, now the subject of litigation by NWEA against the U.S. Environmental Protection Agency and NMFS. The Corps is on notice, just as the states, EPA, and the Services, that the state numeric criteria are not protective of uses under even ordinary circumstances as discussed elsewhere. Publically identified as defective by the State of Oregon itself are the criteria for such parameters as temperature, DDT, DDE, bromoform, chlorodibromomethane, endosulfan sulfate, endrin aldehyde, methyl bromide, pyrene, ammonia, aluminum, tributyltin, among others. See Oregon Department of Environmental Quality 1999-

2002 Water Quality Standards Review, Draft Workplan, December 13, 1999, at 4-5.

The DSEIS fails to include discussion of the effects on salmon by the project, such as temperature's effects on timing of migration and reproductive effects, that will reduce genetic diversity of the species. Removing life history types reduces the ability of the species to cope with environmental changes and fluctuations. Therefore, any incremental addition of adverse effects to salmon that will affect life history types must be identified in the DSEIS. The DSEIS also fails to evaluate the existing low productivity of Lower Columbia River bald eagles, the identification that high fish and mammal levels exist despite relatively low sediment contamination levels, the existence of toxic effects as a baseline condition that is required to be included in the NEPA analysis, new data from the Exxon Valdez spill on the significant effects on salmon at extremely low levels of PAHs, toxic contamination of the berths that are an integral part of the project, the prospect that side slope erosion will make bioavailable buried toxic contaminants, the belief that clay layers underlie areas that will be subject to dredging and/or adjustment.

a. The DSEIS Fails to Consider the Baseline Effect of Temperature on the Project Area

The Columbia and Willamette Rivers violate state water quality standards for temperature. The river is significantly warmer than it once was. In fact, the Columbia used to freeze over in winter. Increased temperatures are the result of anthropogenic activities through the Columbia River Basin as well as the hydroelectric dams which are believed to have caused increase in the temperature of the river two to four degrees. Preferred salmonid spawning temperatures range from 10° C to 14° C, well below state criteria of 17.8° C. Sub-lethal effects such as reproductive failure, prespawning mortality, residualization and delay of smolts, decreased competitive success, disease resistance will occur even where waters meet state criteria. U.S. EPA. Biological Assessment of the Revised Oregon Water Quality Standards For Dissolved Oxygen, Temperature, and pH, September 15, 1998 at 83, 85, 87, 90, 92, 93. More recent evidence indicates that 64° F (17.8° C) is at the upper range at what is protective for all salmonid life stages and may cause sublethal effects. Letter from Randall F. Smith, EPA to Michael T. Llewellyn, Oregon DEQ, July 22, 1999. For this reason, EPA has determined that Oregon's rearing criterion of 64° F (17.8° C) is "likely to adversely affect" all species of listed threatened salmonid in Oregon, including the following stocks that use the Lower Columbia River and, in some cases, the Lower Willamette River: Snake River Spring/ Summer Chinook Salmon, Lower Columbia River Spring Chinook Salmon, Upper Willamette River Spring Chinook Salmon, Upper Columbia River Spring Chinook, Snake River Fall Chinook Salmon, Lower Columbia River Chinook Salmon, Snake River Basin Steelhead, Middle Columbia River Steelhead, Lower Columbia River Steelhead, Upper Willamette River Steelhead, Upper Columbia River Steelhead, Snake River Sockeye, and Columbia River Chum Salmon. Biological Assessment, *supra*. In addition, there is a candidate species, the Lower Columbia River/Southwest Washington Coho, and a proposed listing, Southwestern Washington/Lower Columbia River Coastal Cutthroat Trout. Endangered Species Act Status of West Coast Salmonids, September 9, 1999, <http://www.nwr.noaa.gov>. NMFS agrees that waters meeting the 64° degree criterion are likely

to cause adverse effects to salmonid populations such as increased mortality of adults, pre-hatch mortalities and developmental abnormalities, reduced disease resistance, and increased incidence of disease. Further, NMFS recognizes that the environmental baseline shows that Oregon's waters do not meet this 64° degree criterion, but instead pose temperatures that create a much higher risk to salmonid populations, particularly during the warmest days of summer. Biological and Conference Opinion: Approval of Oregon Water Quality Standards for Dissolved Oxygen, Temperature, and pH, July 7, 1999 at 15.

The proposed project will increase temperatures in the Lower Columbia River by increasing the flow predominance in the channel and decrease flushing and overall water volume in the peripheral areas of the river. FEIS Ex. E at 4. These are the very areas where beneficial uses most affected by temperature use the river. It is also the area where increases in temperature will increase the degree of violations of bacteria and dissolved oxygen. In addition, the proposed action will increase stratification resulting in a greater persistence of warm waters even further down the river than they do now. This will be caused by decreased mixing of warm freshwater and cold saltwater. The DSEIS is inadequate because it does not address any issues related to the baseline conditions of temperature and/or the likely project effects.

b. The DSEIS Fails to Consider the Baseline Effect of Temperature on Other Water Quality Parameters

The Lower Columbia River is water quality limited for temperature and dissolved oxygen. Oregon 1998 303(d)(1) List. Increased temperatures in the Lower Columbia River also affect other water quality parameters – conventional and toxic – and enhance the adverse effects of other parameters on the beneficial uses, particularly salmonids. Increased water temperature increases bacteria levels, a pollutant for which the Columbia is water quality limited. Concurrent violations of temperature and dissolved oxygen (DO) standards also cause increased risk to beneficial uses. Oregon Department of Environmental Quality, Final Issue Paper on Dissolved Oxygen, Appendix A-6, June 1995. Temperature also affects the uptake of toxic contaminants by uses because elevated temperatures decrease available DO in the water column. In addition, the biological demands on aquatic species increase with increasing temperatures. At lower DO levels, the amount of oxygen delivered to fish tissue decreases, restricting the ability of fish to maximize metabolic performance. Id. Low DO levels increase the acute toxicity of various toxicants such as metals and ammonia. Id. Low DO levels may compound the adverse effects of some toxicants. Alternatively, toxicants may increase sensitivity to low levels of DO. For example, Oregon has provided an example of where a toxicant that damages the gill epithelium can decrease the efficiency of oxygen uptake. Also, several toxic contaminants increase oxygen consumption due to interferences with oxidative phosphorylation of pentachlorophenol and have the potential to increase sensitivity to low DO. Id.

The U.S. Environmental Protection Agency concurs that adverse impacts of toxicants may be compounded by low DO levels or may increase sensitivity to low DO levels. U.S. EPA, Biological Assessment of the Revised Oregon Water Quality Standards for Dissolved Oxygen, Temperature, and pH, September, 1998, at 63. EPA identified three mechanisms by which low

DO and a toxicant in combination cause effects: 1) Increase gill ventilation associated with low DO can increase uptake of waterborne toxics, 2) Any toxic contaminant that damages the gill epithelium and decreases efficiency of oxygen uptake will increase sensitivity to low DO, and 3) a number of toxics, such as pentachlorophenol, increase oxygen consumption due to interference with oxidative phosphorylation. *Id.* Therefore, when elevated temperatures – which in the Columbia are elevated above an admittedly unprotective criterion – cause depleted oxygen levels, there are additive impacts with toxic contaminants. The combination of these three pollutants, already present in the Lower Columbia, will increase from the proposed activity. Increased sediment from the proposed project will increase temperature, decrease dissolved oxygen, and increase available toxics. Increased temperatures, caused by decreased water volumes in areas peripheral to the channel, decreased flushing, and increased stratification, will increase existing violations of bacteria and dissolved oxygen. These violations of DO and bacteria take place in the peripheral areas. The temperature increases will also increase the adverse effect of the violations of these parameters and toxic levels that exceed safe levels on the beneficial uses. Because Oregon water quality rules specifically contemplate the effect of multiple pollutants and the impact of complex stressors that combined are termed “pollution,” the DSEIS must provide sufficient information to the state and to the public upon which findings can be made. OAR 340-041-0205(2)(p)(A).

c. The DSEIS Fails to Consider the Baseline Effect of Toxic Contaminants

The Lower Columbia River also violates Oregon’s water quality standards for the toxic contaminants PCBs, dioxins, DDE, and DDT. 1998 Oregon 303(d)(1) List Decision Matrix. In addition, the Department has identified elevated levels of toxic contaminants that it has determined do not violate state standards. *Id.* However, in making these determinations the Department has failed to properly apply its narrative criteria and beneficial use support requirements and has not complied with the Clean Water Act. Letter from Nina Bell, NWEA to Carol Browner, U.S. EPA, December 13, 1996. In addition, Oregon has failed to apply its narrative criteria in evaluating the effect of toxic contaminants individually on sensitive fish and wildlife in the estuary. For example, reproductive failure in bald eagles and likely reproductive failure in mink violate the narrative criterion that “[w]aters of the state shall be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.” OAR 340-041-0027. Oregon has failed also to apply its narrative criterion to address the additive and/or synergistic effects of multiple toxic pollutants. This criterion requires that “[t]oxic substances shall not be introduced above natural background levels in the waters of the state in amounts, concentrations, or combinations which may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare; aquatic life; wildlife; or other designated beneficial uses.” OAR 340-041-0205(2)(p)(A). Oregon has not applied current scientific understanding of the effects of toxic exposure to salmonid in order to interpret its narrative criteria or beneficial use support requirements, as required by state law.

Against this backdrop, the Corps proposes to conduct dredging and dredge spoil disposal that

will increase the bioavailability of toxic contaminants in the Lower Columbia River. Sediments are a major source of hydrophobic contaminants for biota. Department of Interior letter, *supra*, at 2. The Science Center concludes: "Redistribution of contaminants from upriver contaminated dredge sites to shallow water, low flow sites represents a potential for bioaccumulation of toxics by outmigrating juvenile salmon that utilize these habitats. Dredging operations in the Columbia and Willamette rivers will likely result in the resuspension and redistribution of bottom sediments in the dredge area, as demonstrated in many dredge operations (Morton 1977; Hershman 1999)." Science Center memo at 7.

The DSEIS must provide data and analysis on use impairment related to levels of toxic contaminants, i.e. for pollutants that are at levels posing a risk to piscivorous wildlife such as eagles, mink and otter. Some of the information available is from tissue and wildlife health studies. For example, information that "river otter in the vicinity of RM 119.5 are in a critical or almost critical category based on reference level comparisons, abnormalities noted during necropsy, and histopathological observations of individuals," must be evaluated for compliance with water quality standards and to assess the impacts of the proposed project. The Health of the River 1990-1996, Integrated Technical Report, Tetra Tech, May 20, 1996, Figure 14, at 53 [hereinafter "Health of the River"]. This information is tied to toxic contaminants: "Concentrations of organochlorine insecticides, PCBs, and to a lesser extent PCDDs and PCDFs in the liver of river otters were highly correlated with each other and many were significantly related to baculum [penis bone] and testes size or weight." *Id.* at 52. Likewise, the Department is required to use the extensive information on reproductive failures of the Bald eagle in the Lower Columbia River. The Bi-State study noted that "Historically, some individual mink contained PCB concentrations known to make adult female mink in laboratory studies incapable of producing young." Health of the River at 52. Washington's 1996 303(d) list includes both entries and listings for PCB-1254, arsenic, 4,4'-DDE, Dieldrin, and Bis-2-(ethylhexyl)phthalate based on the edible portions of white sturgeon tissue found in the Lower Columbia River. Both states shared the data from the Bi-State study upon which Washington's listings are based.

Other information available on toxic contamination of the Lower Columbia River is on sediment contamination levels. As the Bi-State study demonstrated, toxic contaminants are present at sufficiently unsafe levels in deposition areas of the Columbia. These constitute violations of water quality standards even if the distribution of contaminants is "patchy." Science Center memo at 8. The Department must evaluate the potential for the proposed project to increase levels of toxic chemicals at those depositional locations as well as to enter the food chain of the estuary. It must also evaluate the potential for disturbance of these depositional areas due to direct project activities and/or changed circulation patterns in the estuary created by the project. For example, there are numerous locations where sediment contamination exceeds values believed to be protective of benthic organisms and wildlife. Health of the River, Figure 14, at 37. Listed are nine metals and one organic compound, Bis(2-ethylhexyl)phthalate. The document notes other contaminants of concern found in sediments as well, such as polynuclear aromatic hydrocarbons (PAH). Health of the River at 36.

The DSEIS must also include the baseline analysis all of the information from existing studies.

For example the Bi-State study found that "[r]eference levels were exceeded for aluminum, iron, cadmium, copper, lead, selenium, zinc, and silver. Copper and lead exceeded reference levels comparatively frequently, and deserve further evaluation. Additional testing is also recommended for silver and mercury. . ." Health of the River at 35. Moreover, despite findings that dissolved arsenic concentrations that "exceeded water quality criteria for the protection of human health in 15 of 16 samples collected from four sites in the Columbia River" arsenic has not been placed on the 303(d) list. The study also found that "chemicals were found in excess of reference levels, or were frequently detected in the river [include] barium, cadmium, chromium, copper, lead, mercury, and zinc." Health of the River at 38.

The Corps' DSEIS must use current information on sub-lethal effects of toxic contaminants on human and wildlife health. These effect include but are not limited to: reduced immunity from disease; permanent brain damage including decreased intelligence, motor skills, memory, eye-hand coordination and increased aggressive behavior; reduced male fertility; reduced penis size, a result found in Columbia River river otter; and abnormal sexual development (e.g., missing testis) and abnormal sexual behavior, among other effects. There are numerous studies on the effects of toxic contaminants that the Corps must include in its discussion of baseline conditions of the project area.

Studies done in Puget Sound on the impacts of contaminated sediments on juvenile salmon demonstrate they are at risk from even a short 3-week stay in a contaminated area. Fish studied suffered from impaired migration and swimming behavior and impaired immunity from disease. The Science Center concludes there is a risk to salmon from toxic contaminants: "Exposure to contaminants found in Columbia and Willamette River sediments, particularly to PAHs and PCBs, can affect the health of threatened or endangered salmon that utilize the LCR. Short-term exposure to PAHs and PCBs in contaminated estuaries, both through diet and through the water column, reduces disease resistance and growth rates of outmigrant juvenile chinook salmon in Puget Sound (Arkoosh et al. 1998; Casillas et al. 1995). Resuspension of these contaminants as a result of dredging would increase the risk of exposure through the water column or through contaminated prey. Reduced growth and increased disease residence reduce survival potential." Science Center memo at 8. Male trout with feminine traits have been found in British Columbia and a recent study has found that a pesticide appears to prevent Atlantic salmon from making the transition from freshwater to saltwater fish. Even low levels of pesticides can alter swimming and migration behaviors in ways that prevent fish from reaching the ocean or returning to their spawning beds. Additionally, certain pesticides can cause abnormal sexual development, preventing fish from reproducing and pesticides can alter the aquatic environment, for example by reducing the food supply available to salmon.

The Science Center also raises concerns that the Department must resolve concerning the screening levels to assess the potential hazards of dredged sediments to salmon:

The LCRMA screening levels used to assess potential hazards of dredged sediments may not be adequate to protect salmon. Recent studies of resident marine fish (Horness et al. 1998) and juvenile chinook salmon (Arkoosh et al. 1998) show that

thresholds for contaminant effects in these species are lower than predicted from the aquatic bioassays which form the basis for many sediment quality criteria. For example the current LCRMA screening level criteria for LPAHs and HPAHs are 5,200 and 12,000 ng/g, respectively, resulting in an acceptable total PAH concentration for dredged sediments of 17,000 ppb. For PCBs, according to LCRMA standards, sediments are considered acceptable for open water disposal if concentrations are between 130 and 3100 ng/g. However, alterations in growth and immune function have been reported in chinook salmon from estuarine sites with average total PAH concentrations in sediment below 17,000 ppb, and total PCB concentrations between 130 and 3100 ppb (Arkoosh et al. 1998). Recent studies by the NMFS (Horness et al. 1998) show that threshold total PAH sediment concentrations associated with biological injury in marine fish are between 1000 - 5,000 ppb range. The sensitivity of Pacific salmon to contaminant effects is similar or greater than marine fish analyzed by Horness et al. (1998), based on studies cited above.

Science Center memo at 8-9. During the SEI process, the Services again noted that these issues are not resolved. Yet the DSEIS still does not provide a complete evaluation of the issues for the public to review.

The Corps is incorrect in its belief that it need not obtain the information required to assess compliance of the project with the Clean Water Act. In response to Department of the Interior comments urging an ecological risk assessment of dredging in the Willamette River, the Corps stated: "the preliminary ecological risk assessment suggested would be beyond the scope of the proposed project." Corps of Engineers Response to Department of Interior letter, *supra* at 3, FEIS. Sampling of sediments has been inadequate to determine actual amounts of hazardous materials in the areas to be dredged. The Corps only sampled sediments down to 10 inches, while the preferred alternative would excavate down 3 feet. EIS, Appendix B, at 5. The Corps justifies this method of sampling because the materials beneath had larger grain size. *Id.* at 6. However, larger grain size does not automatically preclude the existence of hazardous materials nor does sampling the top 10 inches prove that the remainder of the sediment is not contaminated. Sampling the top layer does not factor in the previous effects of dredging on the composition of the channel bottom when finer grained material may have been redistributed to lower levels.

Failure to chemically test samples with less than 20 % fine grain materials also prevents the Corps from adequately addressing future impacts, because the Corps does not have a clear idea of present conditions. Even though finer-grained material chemically binds better than the larger-grained material, larger-grained material may nonetheless have chemical contamination. In addition, material up to .50 mm may become suspended in the river from dredging operations. Failure to test these materials prevents the Corps from adequately assessing the possible impacts of resuspending hazardous materials into the waters. We commented on the DEIS that the Corps has not adequately addressed the issue of resuspension. While the DEIS acknowledged that turbidity in the water would increase, it made no indication that turbidity may indicate the resuspension of toxins. Nor has the Corps assessed any potential effects of this resuspension on

water quality, aquatic species, or wetland and other aquatic habitat from the flushing of these toxins down the rivers. The Science Center has made these same observations. Science Center memo at 9. The DSEIS suffers from the same flaws.

d. The DSEIS Fails to Consider the Baseline Effect of Suspended Sediments and Turbidity

The Corps has not provided the states with sufficient information upon which to make a determination that the dredging operations and the disposal of dredged spoils of the proposed project will not cause a violation of water quality standards that protect beneficial uses from excess turbidity and sedimentation. First, the DSEIS does not include baseline information nor information on the timing of the proposed operations, so it cannot make a determination of compliance with standards that protect sensitive beneficial uses. Second, if salmonid populations were high, rather than threatened or endangered, the states could evaluate the effect according to its existing numeric criteria. However, they are not; instead the populations are at significant risk and less able to withstand any incremental adverse impacts from predation, growth, health, etc.. This means that the states must interpret and apply their narrative and beneficial use support requirements in order to apply them to threatened and endangered species. To do so requires substantial additional information, which the DSEIS does not include. Third, as discussed above, the Corps has not provided the states with information on the likely turbidity from the activities or the actual locations of flow-lane disposal. In the absence of information, the states cannot conclude that the proposed project will comply with state water quality standards. Therefore, the DSEIS is inadequate on its face.

The effects of sedimentation on salmonids are well documented and include: clogging and abrasion of gills and other respiratory surfaces, providing conditions conducive to entry and persistence of disease-related organisms, inducing behavioral modifications, and altering water chemistry by the absorption of chemicals. Factors for Decline at 18. Suspended sediment and turbidity can “increase the straying rate of adult salmon, * * * force juvenile salmon from preferred habitats, and impair feeding by juvenile salmon, thereby reducing growth.” Science Center memo at 6. The Lower Columbia River estuary plays an important role in the life cycle of salmonids and the important factors that affect that role are “flow rates, timing of flow, and turbidity.” Science Center memo at 3, citing Dawley et al. 1986. Prey availability and habitat suitability are also strongly affected by turbidity. *Id.* at 4. Turbidity can have non-lethal effects at “relatively low levels” that “reduce fish fitness and contribute to elevated mortality later in the life of the fish.” *Id.* at 6. In addition, the effects of increased suspended sediment loads on spawning is well documented. *See e.g.*, Science Center memo at 6-7. The Science Center has concluded that while the “extent of spawning by salmon in the lower Columbia River is not well known,” chum salmon do spawn at the confluence of the Grays River and “likely utilize gravel deposits at the mouths of other tributaries to the lower river.” and “Lower Columbia River fall chinook salmon also may spawn in areas that will be affected by sediment generated by the dredging.” *Id.* at 6.

In addition to the direct effects of turbidity on salmon, the Department must evaluate the indirect

effects. Sedimentation affects bottom-dwelling organisms that make up the food chain for salmon and other estuary species. “Elevated turbidity and TSS may reduce the amount of light available for photosynthetic organisms, reducing primary production which may in turn affect biota higher up on the food chain.” Bi-State Report, Task 6 at 2-33. Increased wake in shallow areas caused by changes in shipping lane use will increase turbidity. The DSEIS must also evaluate the additive effects of turbidity, excess temperature, low DO, and exposure to toxic chemicals and other unsafe levels of pollution in these shallow waters. As discussed elsewhere, salmon rely upon shallow water habitats.

NMFS has concluded that “[q]uantitatively, sediment has been identified as the greatest single pollutant in the nation’s waters (Barhart 1986, Poon and Garcia 1982, Ritchie 1972, U.S. Environmental Protection Agency 1988).” Factors for Decline at 17. Despite this well-known information, the states’ lists of waters violating sedimentation and turbidity is extremely short. This represents the states’ inability to apply their own sedimentation and turbidity standards, and their lack of monitoring, rather than that there are safe levels of these pollutants in state waters. As the Oregon Department of Environmental Quality explains: “temperature is the most commonly measured parameter which causes water quality impairment, however, other parameters such as sedimentation, habitat modification, flow modification, low dissolved oxygen, abnormal pH and toxics have an impact on aquatic life.” Oregon Department of Environmental Quality, 1998 Water Quality Status Assessment Report 305(b) Report, note to Table 4-4A. As a consequence, Oregon’s list of water quality violations includes over 12,000 river miles of temperature violations but only 1,354 miles of “siltation” violations and a paltry 66 miles of turbidity violations. *Id.* Not surprisingly, as time goes on, Oregon only adds, but does not subtract, to the list of waters that violate standards for turbidity and sedimentation. Oregon DEQ, Stream Miles Added and Removed between Oregon’s 1998 and 1994/96 303(d) Lists, Summary Report, www.deq.state.or.us. Does Oregon stand alone in the nation as not having an ubiquitous turbidity and sedimentation problem? No, Oregon has failed to apply its standards to assess the degree of the problem. Regardless of the states’ failures to adequately assess the current baseline of turbidity and sedimentation problems, the Corps is required to remedy the data inadequacy in its DSEIS. It does not. As a consequence, the public and the public agencies cannot evaluate and make findings on the effect of the proposed project with regard to sedimentation and turbidity.

e. The DSEIS Fails to Consider the Baseline Effect of pH Violations into Its Analysis.

The Lower Columbia River is designated water quality limited for pH. Oregon 1998 303(d)(1) List. These violations have a direct effect on the health of aquatic species: “Parameters such as pH, turbidity, TSS, temperature, and DO have a significant effect on biota in the river, especially coldwater anadromous fish.” Lower Columbia River Bi-State Program, Reconnaissance Survey of the Lower Columbia River, Task 6, May 1992 at 2-32. pH also exacerbates the effects of other pollutants such as the “toxicity of dissolved substances in the water.” *Id.* at 2-33. This was recognized in the 1992-94 Oregon Triennial Review: “Values of pH outside the range in which the species evolved may result in both direct and indirect toxic effects. Direct effects result from

interactions with the mechanism that moves ions across cell membranes. Indirect effects occur when pH influences the availability and toxicity of metals, ammonia, and other potentially toxic ions in the water column." 1992-1994 Water Quality Standards Review, Department of Environmental Quality, June 1995 at ii. For example, un-ionized ammonia (NH₃), as opposed to ammonium (NH₄⁺), is toxic to aquatic organisms, especially salmonids. As pH increases, so does the amount of un-ionized ammonia for a given amount of total ammonia in the water. *Id.*, First Issue Paper: pH, at 2-14. Because Oregon's water quality standards require an evaluation of the combination of multiple pollutants on the beneficial uses, and the Lower Columbia River is already violating standards for pH, temperature, DO, and toxics, the Corps must provide sufficient data and analysis for the state to make findings that the proposed activity will not increase any of these or other indirectly related parameters.

f. The DSEIS Fails to Consider the Baseline Effect of Multiple Pollutants on the Beneficial Uses.

As discussed above, the states are required to evaluate the effect of multiple pollutants on the beneficial uses. The Columbia River is already violating numerous standards. Even Oregon has recognized that multiple stressors present a greater problem to sensitive uses than individual violations: "A combination of water quality concerns is stressing aquatic life throughout Oregon and is of significant concern because of the widespread listings of salmonid species as threatened or endangered under the federal Endangered Species Act." Oregon Department of Environmental Quality, 1998 Water Quality Status Assessment Report 305(b) Report, note to Table 4-4A. The Department also recognized this in its Triennial Review process: "Though temperature and pH are independent stressors, they covary on a seasonal and diurnal basis, and tend to provide maximal stress to an individual or population at the same time. * * * While any single parameter may not prove critical, the nature of stress is generally thought to be additive." 1992-1994 Water Quality Standards Review, Department of Environmental Quality, June 1995, First Issue Paper: pH, at 2-17. Because state water quality standards require an evaluation of the combination of multiple pollutants on the beneficial uses, and the Lower Columbia River is already violating standards for pH, temperature, DO, and toxics, the states must find that the proposed discharge will not increase any of these or other related parameters in order to issue a §401 certification. The DSEIS does not provide sufficient data and information for the states to evaluate whether their water quality rules are met.

8. The DEIS Fails to Consider Baseline Conditions of Circulation

The MCR FEIS acknowledges that changes in circulation will occur from deepening the MCR: "Slightly larger introduction of ocean water during flood tides can be expected." MCR EIS at 27. It also expects that these changes will have different effects in different areas of the estuary: "The most significant change in circulation patterns would involve the introduction of a slightly larger volume of ocean water during flood tides. Flood current is stronger to the northeast toward Baker Bay so this larger volume of ocean water is likely to be more pronounced in Baker Bay." *Id.* at 26. Nonetheless, the DSEIS does not discuss the baseline conditions related to circulation.

C. The Future: The DSEIS Must Include the Effects of Those Reasonably Foreseeable Actions that Are Expected to have Impacts in the Same Area or Will Have Similar Impacts

1. Deepening the MCR is a Connected Action That Must be Evaluated with the Proposed Channel Deepening and the MCR Operation and Maintenance Project Requires a Supplemental EIS

In order for the region to realize the purported benefits associated with the proposed deepening of the Columbia River channel, the MCR will similarly require deepening from its current depth of 55 feet. Nowhere in the FEIS or SEIS is this issue discussed, nor was it raised in the context of the so-called independent review conducted in the first week of August 2002, except for Chapter 2 of Appendix A to the FEIS. See the discussion above, related to the baseline conditions on the MCR, as support for this section.

The MCR EIS, based on the VMS, evaluated the appropriate depth of the MCR to correspond to a river channel of 40 feet based on a 95 percent rate of safe passage, defined by the document as meeting Engineering Regulation 1110-2-1404 to provide safe navigation conditions under most weather conditions. The project FEIS concludes that vessels be able to enter the MCR 95 percent of the time that conditions are safe, defined “as those times when wave heights are 10 feet or less.” MCR FEIS at a-1.

In that document the Corps concluded that both the MCR EIS and the VMS upon which it was based are in serious need of revision:

“Since the MCR is expected to continue to be closed on a ship by ship basis, there is a need to refine the wave height, expected excursion and the level of risk of hitting bottom for wave conditions just below the breaking wave level. Given the potential consequences of hitting bottom, it seems like the design should be based on E95 or higher, of the extreme excursion values. The 1983 design failure rate of 5% leaves the potential for some ships to hit bottom up to 10 times during a single transit. The expected and actual excursions both need to be reviewed before the channel design is finalized.”

Appendix A at 17. The revision of this analysis is now needed in the context of channel deepening for the Columbia River because the two locations are inextricably linked. Whether the previous MCR analysis was incorrect or correct, it requires revision because: 1) the DSEIS needs to address the risk of grounding because it may be increased by new analysis of the risk of the current depth MCR given that the Corps has now cast serious doubt on the validity of the studies and analysis in the 1983 MCR EIS; 2) the risk of grounding is likely to be increased by the growth of vessels due to the increased depth of the river channel but has not been reevaluated by any technical means; 3) previous dredging and spoil disposal have altered the MCR hydraulics; and/or 4) the environmental effects of the 5 percent risk of grounding were not included in the

1983 MCR EIS. The current status is that the Corps concludes that its conclusions regarding downward excursions – as applied to both 34-ft and 40-ft drafts – “is a critical safety issue that needs to be more clearly defined.” Appendix A at 16. Even so, the DSEIS is silent.

The Columbia River Bar Channel is the most dangerous and important segment of the river navigation system because it must be transited and it is the only location where a vessel in the Columbia/Willamette/Snake system where a vessel catastrophe could be such an environmental disaster. The 1983 MCR EIS focuses on the issue of delay, and groundings that prove the potential for delay (under the then existing MCR depth) but never once addresses the issue of risk and effects of an accident. Moreover, the reliance placed on evaluating averages – such as wave height – results in a failure by the Corps to evaluate the true risk of shipping in that channel which has nothing to do with averages but rather with the state of the river at the time a vessel is in transit.

The DSEIS contains no additional material to the seven pages presented in Chapter 2 of Appendix A of the FEIS. Yet, the conclusions concerning the MCR channel in the 1983 EIS themselves were undercut by the Corps statements, as quoted above, that the analysis was inadequate. The seven pages that allegedly make up the updated analysis on this subject are significantly flawed. First, the use of the phrase “safe wave conditions” in the supplement is misleading. It suggests that this is the maximum wave height in which ships transit the bar without a problem. In fact, even the supplement acknowledges that ships do transit in conditions exceeding 10 feet but the way in which the document is written is intended to create an opposite impression. In contrast, the 1983 MCR EIS defines a “safe wave” more precisely:

When wave heights were less than 10 feet, the other environmental factors such as visibility and currents appeared not to pose a major obstacle to vessel use of the entrance channel. When wave conditions were present, however, the other facts assumed an increased importance in rendering safe navigation difficult or, in some cases impossible.

MCR EIS at a-1. The document goes on to say that “safe waves” means a condition in which no bar closures are expected to occur.

Section 2.3 of Chapter 2 of Appendix A of the project FEIS further distorts the concept of a “safe” wave height by stating that the MCR design was for a 36 foot vessel being able to transit the Mouth of the Columbia River 95 percent of the time. In contrast, the 1983 MCR EIS states it is “recommended that vessels be able to transit the entrance 95% of the time when conditions are safe.” MCR EIS at a-1. However, that study contemplated a “primary design vessel” that could transit the river to upstream ports 95 percent of the time. *See, e.g.*, MCR EIS at a-3, A-22. The document specifically states that it is the “Skamokawa Bar, at about river mile (RM) 34, [that] historically has been the controlling part of the river for ship movement.” MCR EIS at a-3. There is a significant difference between the MCR and the upriver area, a distinction the FEIS fails to accurately capture.

Compounding the definitional problem, the FEIS concludes that this so-called safe wave height of 10 feet will not be exceeded more than 440 hours per year. Page 15. This is equivalent to 18 days each year, an obvious fallacy. Section 2.7.1 in the FEIS states that two years were selected in which to compare wave heights and closure times: 1984 and 1992. It is unclear what the Corps uses as its source of wave data for these two years. The National Data Buoy Center shows that Buoy No. 46029, located seaward of the Columbia River, was not operational in two months of 1984 and four months of 1992, all of which were fall and winter months when wave heights would be expected to be greater. <http://www.nodc.noaa.gov/BUOY/46029.html>. A nine year summary of average wave heights, from March 1984 to December 1993, at this same buoy showed that the months of November, December, and January had average waves of greater than 10 feet. http://www.ndbc.noaa.gov/images/climplot/46029_wh.gif. This appears to be contrary to the National Marine Consultants wave study showing that wave heights are less than 10 feet 95 percent of the time. In addition, the use of wave height means can be very deceiving when attempting to determine closure hours as the mean does not inform an analyst of data at the appropriate level; a more sophisticated analysis is required. Likewise, water levels can be affected by meteorological changes in wind speed and direction and in barometric pressure. These influences explain differences between measured and predicted water levels. Water levels also vary depending upon their location. Changes in dredged spoil disposal alter waves. Currently bigger swell heights are being noted between buoys 4 and 6 than previously. Moreover, the wave heights measured at the buoy are not measurements of the wave heights experienced at the bar. Those are at least 10 percent greater than measured data and sometimes as great as twice as much. It is obvious the author of the supplement does not appreciate the dynamics of the MCR thereby minimizing their importance. This might account for the fact that the Corps does not acknowledge there have been groundings since the deepening of the MCR; in fact, there have been at least three.

The lack of references in this document is puzzling. In addition to those already mentioned, there is no reference to support the statement: "Of the 300 deepest draft ships that transited the Columbia River during 1991 through 1993, only about 10% did not meet the bar pilots' under keel clearance." FEIS, Appendix A, Chapter 2 at 14.

In addition, the old analysis upon which the Corps still relies does not distinguish between seasonal changes in allowable drafts for vessels seeking to transit the MCR. In severe conditions a bar pilot may likely require vessels to wait until the flood stage, as he seeks to have the ship arrive at Astoria two hours before high water. In order to provide the maximum under keel water, delays are likely to occur. Regardless of these seasonal differences, in sections 2.6 and 2.8 of the FEIS, the Corps simply presents averages for each year. Seasonal differences may also play a role in better understanding the use of the channel. In Section 2.6, for example, the Corps notes the deepest draft vessel that transited the channel. It does not, however, state either the frequency of use by that deepest draft nor the season of use.

The 1983 EIS for the Mouth of the Columbia River (MCR) is a document that analyzed the need for deepening the MCR to 55 feet. This FEIS discussed the fact that the 55 feet depth was necessary to correspond to the existing 40 foot channel. It states that: "All data developed in the

study are based on this assumption [“that the upriver channel will not be changed, but will remain at its present authorized dimensions”].” Interim Feasibility Report Page 1. Therefore, the data presented in the EIS concerning the sufficiency of the MCR channel are not valid if the river channel were to be deepened to 43 feet. Nonetheless, the DSEIS does not address the need to develop new data, but merely relies upon the inadequate evaluation – based on no data – that is contained in the FEIS. Specifically, the new data would include both environmental effects as well as economic ones as the MCR EIS sought to meet four objectives, one of which was that the 40 foot channel could be “fully utilized” and another to “decrease tide-caused delays for commercial ships crossing the bar.” MCR Interim Feasibility Report at 2. The MCR was deepened to address these two issues:

“The incompatibility of the two channels has been recognized for many years. In his October 1961 report to Congress (House Document 452, 87th Congress, 2nd session), the Portland District Engineer indicated that certain deep-draft vessels using the then-proposed 40-foot-deep river channel would ‘...incur delays to avoid transiting the entrance during low water.’ He further stated that there was no definite knowledge at that time regarding the exact amount of clearance between keel and channel bottom required for safe navigation over the entrance. Now that the 40-foot-deep river channel has become a reality, the prediction of that District Engineer has been substantiated by experience gained from vessel operation and scientific studies.”

MCR Interim Feasibility Report at 14-15. A document intended to ensure compatibility and efficiency associated with a 40 foot channel is no longer a valid basis upon which to evaluate the relationship of a 55 foot MCR channel with a 43 foot river channel. This is particularly true when the document itself states the 55 feet is “the **minimum depth** necessary to make the entrance channel fully compatible with the upriver channel.” MCR EIS at A-25 (emphasis added).

Additionally, there are questions regarding whether the Corps has been able to maintain the current MCR depth and location as authorized, as discussed above.

2. The Evaluation of Increased Salinity Intrusion Caused by the Proposed Project Must be Based on Sound Science and Done in Conjunction with the Appropriate Baseline Conditions

Further deepening the Columbia River navigation channel is predicted to alter salinity intrusion, thereby altering the ETM and the availability of food sources for juvenile salmonids, as well as shifting the entire freshwater-based ecosystem upstream. According to the DSEIS, the channel dredging will have “little or no impact on salinity intrusion.” However, the DSEIS relies on a model that had not been peer reviewed or systematically tested, according to statements regarding its own limitations. There was no demonstration that the model could effectively model bathymetry, a critical component of channel deepening. In fact, the researcher who created the model explicitly warns that his results “may be used to guide management decisions...but only

if model uncertainty is further reduced.” Oregon Health and Science University Modeling Results, Appendix F, Biological Assessment, Columbia River Channel Improvements Project, U.S Army Corps of Engineers, December 2001 (emphasis in original). Because of the close linkage between salinity intrusion, the ETM and juvenile salmonid food resources, the Corps needs to revise the DSEIS after the salinity model is refined, subjected to peer review, and properly calibrated.

Nowhere in this study, or any other discussion in the DSEIS or previous related documents, has the Corps presented an analysis of the effects of channel deepening including the cumulative effects on salinity intrusion from previous deepening projects of the river and the incremental deepening of the MCR, the placement of jetties, and of other actions that have been taken to alter the natural salinity patterns of the Columbia River Estuary.

3. The Corps Fails to Include Data and Analysis for Reasonably Foreseeable Interrelated and Interdependent Projects

a. Berths and Basins are Reasonably Foreseeable Interrelated and Interdependent Projects

The DSEIS notes that the project will require increased dredging of berths and basins. However, nowhere in the document is there a discussion of the contamination present in those areas. Berths are frequently the site of significant toxic contamination due to intentional waste disposal practices, and accidental spills. For example, the Port of Portland’s Terminal 4 on the Willamette River is the site of coal tar pitch historically “spilled” at the rate of 20 tons per year. In addition, very high levels of lead, zinc, and elevated levels of mercury, chromium, cadmium, and DDT/DDE have been found in sediments adjacent to the terminal. Likewise, in 1987 the Washington Department of Ecology found that the Port of Vancouver had been “spilling” unknown quantities of copper ore at its Ore Transfer Facility (Columbia rivermile 103), contaminating over 5,000 cubic yards of river sediment. The DSEIS cannot evaluate the full effects on the ecosystem and individual species of the channel deepening project without the required data on sediment contamination and reasonably foreseeable increases in sediment contamination from Port facilities along both the Columbia and Willamette Rivers. Very little information has been gathered and that data has been measured against a measuring stick – sediment guidelines – that the Services warn probably do not reflect what is actually happening in the estuary area with regard to toxic effects on fish, birds, mammals, and their respective prey.

b. Development Projects are Reasonably Foreseeable Interrelated and Interdependent Projects

The DSEIS does not include a discussion and analysis of the cumulative impacts of future interrelated projects including, but not limited to, the development of: Hayden Island and the Vancouver Lowlands.

c. Dredging, Deepening, and Continued Use of Berths and Basins in the Willamette River Are Reasonably Foreseeable.

The vast majority of berths in the Columbia/Willamette shipping system are located in the Willamette River. In addition, it is extremely unlikely that the Corps will not seek to deepen the Willamette shipping channel to allow use of these berths, following decisions on the clean-up of the Portland Harbor Superfund site. Therefore, it is impermissible for the Corps to segregate and postpone analysis of these integral parts of the proposed project – operation and maintenance dredging of berths and basins as well as deepening them – in order to eliminate from consideration their contribution to the cumulative effects analysis presented in the DSEIS.

III. A Reasonable Alternatives Analysis Must Include a No Action Alternative and Each Alternative Deserves Substantially Similar Analysis.

A. Restoration Actions Require a Reasonable Alternatives Analysis

The DSEIS includes restoration actions proposed for the Columbia River Estuary. These are not mitigation projects for the proposed channel deepening. Therefore these proposed restoration projects are subject to the same NEPA requirements as any other proposed action, regardless of whether they are expected to be perceived by the public, or are labeled by the Corps, as being “beneficial.” Nowhere in the SEIS does the Corps discuss the reasonable alternatives to these proposed restoration actions, including other locations for similar activities or other types of restoration activities. By not including any other reasonable alternatives, the Corps eliminates the possibility that each alternative has been given substantially similar analysis.

B. A No Action Alternative Requires a Multi-Port Analysis

Without a multi-port analysis, which the Corps now says would have been desirable, the DSEIS cannot and does not give a serious and substantially similar analysis for the no action alternative.

IV. An EIS Cannot Ignore Pertinent Data

A. The Corps Uses Averaging as a Way to Ignore Pertinent Data

The Corps’ DSEIS ignores some pertinent data outright and, in other circumstances, it averages data in order to “prove” that it is able to obtain the results it needs to justify its economic and/or environmental conclusions. This averaging is inappropriately used with regard to wave height analysis, such as it is, at the MCR and with regard to climate-driven sediment transport issues. Likewise, in the FEIS supplement addressing MCR issues, the Corps refers to the deepest draft vessels without any discussion of the frequency of transit by those vessels. FEIS, Appendix A, Chapter 2 at 13. There may be other areas of the analysis relied upon by the Corps in the DSEIS and the FEIS that similarly mask reality, thereby violating the requirements of NEPA.

B. The DSEIS Improperly Ignores Data on Sediment Transport

The Corps' DSEIS ignores pertinent data by simply explaining it away, rather than presenting a reasoned analysis of the data or conclusions regarding the data derived by others. An example of this is the conclusion by Dr. David Jay that the Corps has grossly underestimated the volume of the proposed discharge. The Science Center has concluded that "the dredged material estimates for the proposed channel deepening are unrealistically low." Science Center memo at 18. The Corps based its dredging estimates on the time period 1980-95, a period with atypically low flows, the second driest period in the last 121 years. *Id.* Therefore, DSEIS estimates are unreliable. *Id.* at 20. The Corps also failed to properly analyze data on sediment transport in the Lower Columbia River. *Id.* The Science Center has concluded that on this basis "dredged material production estimates for the 1980-95 period are low by a factor of ~1.8 to 3.6; i.e., that the actual sand production of a 30-50 year period similar to the last 30-50 years would be 80-260% higher than predicted by the EIS. *Id.* at 20-21. It also notes that the 1996 large dredged material volume demonstrates that a hypothesized post-1977 trend toward lower sediment supply is not supported. *Id.* These broad estimates of the Corps' inadequate analysis were further refined during the SEIS process to indicate a volume approximately 60 percent higher than that of the Corps. Dr. Jay's conclusions rely upon a more sophisticated analysis of existing data than the Corps' analysis, which simply averages the existing data. Despite the issue having been raised in numerous forums, including the SEI forums and by the State of Washington, including in its analysis of the effects of operation and maintenance dredging of the MCR, the Corps has yet to address the inconsistency in its analysis.

C. The DSEIS Ignores Pertinent Data on Declining Populations of Many Species in the Columbia River Estuary

As discussed elsewhere, the DSEIS ignores pertinent data on declining populations of white sturgeon, green sturgeon, and smelt. It also ignores the Lower Columbia River coho which is listed by Oregon state law as an endangered species. Likewise, the Corps fails to consider the continuing reproductive failure of the Lower Columbia River bald eagle populations, or to even mention the declining status of mink and river otter, which are believed to have suffered reproductive deformities and precipitous population declines in the Lower Columbia River.

D. The DSEIS Ignores the Importance of the Columbia River Plume and the Cumulative Effects on it

The DSEIS fails to evaluate the appropriate action area for the project in that it does not incorporate new scientific information demonstrating the importance of the Columbia River's discharge plume to West coast salmon populations. This plume affects both the nutrient productivity of coastal estuaries and upwelling ocean currents and involves the near ocean environment that has been identified as one geographic area important to salmon survival. The Corps' failure to incorporate this scientific information in both the baseline analysis and the evaluation of the impacts of the proposed channel deepening project in the DSEIS renders the document inadequate to meet the requirements of NEPA.

V. The Intensity of Review Requires Attention to the Fact that Effects are Uncertain and Controversial.

In its DSEIS, the Corps has ignored the importance, controversy, and uncertain effects of its action, by itself and in conjunction with past, present, and reasonably foreseeable actions, in lieu of establishing a more intensive review. The only concession to any of these three aspects of the proposed project has been its last minute economic review panel, the results of which it has not even incorporated into the DSEIS in its haste to rush the project through regulatory hoops. The Corps keeps talking about how it has spent more than 10 years on this project. It is not the fault of the public, the regulatory agencies, or the environment that during that substantial period of time the Corps has simply failed to obtain necessary data and conduct analysis as required by federal law.

VI. Compliance with Clean Water Act 404(b)(1)(c) Guidelines

The discussion of the how the proposed deepenign project meets the Clean Water Act 404(b)(1)(c) Guidelines in the DSEIS is seriously inadequate. The purpose of the §404(b)(1) Guidelines is to “restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material.” 40 C.F.R. §230 [hereinafter “Guidelines”], 40 C.F.R. §230.1(a). Moreover, the Guidelines are intended to be consistent with policies of the Clean Water Act. 40 C.F.R. §230.1(b). The Corps’ proposed project does not comply with the Guidelines.

Federal law requires a presumption against the discharge, placing the burden of proof on the project proponent to demonstrate compliance with the Guidelines. 40 C.F.R. §230.1(c). The Corps cannot demonstrate basic compliance with §404(b)(1) Guidelines because, as discussed below, it has not made affirmative demonstrations on the following issues, among others: blasting techniques and timing, effects on salinity of the estuary and its effect on fish, the habitat value of the proposed disposal areas, information on the Deep Water site, smothering impacts to white sturgeon, crab, and smelts, and the effects on all beneficial uses from redistribution of toxic materials and the effect on water quality and beneficial uses. Without this information, the Corps cannot demonstrate that the discharges “will not have an unacceptable adverse impact.” *Id.* Instructively, the Northwest Fisheries Center addressed the issue of burden of proof in its recent transmittal to the National Marine Fisheries Service (NMFS): “[T]he Regional Office’s decision on the proposed channel deepening will probably turn on the issue of burden of proof. While science cannot predict with certainty the extent to which salmonid will be adversely impacted by this action, neither can science conclude with certainty that the action will not adversely impact salmon, but it can say that this is an incremental insult to a degraded system that is important in the salmonid life cycle.” Memorandum for Rick Applegate, NMFS, from John E. Stein, Northwest Fisheries Science Center, Re: Lower Columbia River Channel Deepening Project, December 2, 1999 at 1 [hereinafter “Science Center memo”]. Of course, the Regional Office’s decisions to issue non-jeopardy biological opinions have turned on politics but that does not alter the findings of the Science Center.

Compliance with the Guidelines requires an affirmative demonstration that the proposed project will not have an unacceptable adverse impact individually or in combination with known and/or probable impacts of other activities affecting the ecosystem of concern. 40 C.F.R. §230.1(c). The Corps simply has not addressed the issue of the proposed project's effects on the Lower Columbia River ecosystem in conjunction with any other known or probable activities. See e.g., FEIS Ex. E, §IV g at 6. As the Science Center points out, “[c]urrently, continued incremental loss of habitat and increasing ecological risks are built into the environmental assessment process. Each new channel deepening proposal, as an example, involves a new assessment that uses current conditions as the sole baseline for evaluation.” Science Center memo, Appendix 1 at 3. Neither the Corps in its DSEIS nor NMFS in its most recent Biological Opinion, have, in fact, remedied this “grandfathering” approach to establishing the baseline conditions for the project.

Nowhere does the Corps address the cumulative impact of this project on the Lower Columbia and the species it supports and operation of the hydroelectric dams on the Columbia and Snake Rivers. As is discussed below, the impact of the hydro system on the estuary is a known impact and therefore meets the “activities” criterion of 40 C.F.R. §230.1(c). Likewise, the Corps does not address the cumulative impact of the proposed project on species in the estuary in combination with extensive filling and diking of nearly 80 percent of the estuary's wetlands, pollution inputs from anthropogenic activities throughout the Columbia River Basin that have affected spawning, rearing, and migration of anadromous species and contributed levels of toxic contaminants in toxic amounts to the estuary, previous channel deepening projects, and maintenance dredging. Finally, the Corps cannot make this demonstration without full knowledge of the nature and extent of toxic contamination in the Lower Willamette River and proposed remediation approaches. Despite the Corps' arrogant finding in its Guidelines analysis that deepening the Willamette will not cause or contribute to the violations of water quality standards, it obviously does not have any more information or insight than any other agency, into what is now, by definition, the unknowable nature, extent, and impact of the contamination in that river.

Subpart B of the Guidelines establishes four conditions that must be satisfied in order to demonstrate compliance with the Guidelines. 40 C.F.R. §230.4. The first condition is that there be no practicable alternative that would have less adverse impact on the aquatic ecosystem. 40 C.F.R. §230.10(a). The Corps discusses the use of a non-structural alternative consisting of river stage forecasting that would enable ships to determine navigable channel depths based on real-time tide and river stage information. FEIS at 4-4. The Corps admits that “there have been limitations with the existing river stage forecasting system that have prevented shippers from making maximum use of the available water depths in the Columbia River.” Id. The Final EIS discusses the information gaps that have prevented full use of this system as well as full evaluation of the system's benefits by the Corps. Id. at 4-4 - 4-6. The use of this LoadMax system is an activity not involving discharge of dredged material that qualifies as a practicable alternative. 40 C.F.R. §230.10(a)(1)(i). The Corps is not the only source of information on the potential benefits of significantly improving the LoadMax system. Dr. David Jay, of the Center for Coastal and Land-Margin Research at the Oregon Graduate Institute, states:

“* * * existing forecasts are provided for a limited number of locations by a model that is not “state-of-the-art” in the area of barotropic tidal-fluvial modeling, leading to uncertainties that are likely larger than necessary. The lack of a vessel traffic system on the river may also contribute to conservative loading practices in a manner that is difficult to assess from outside of the industry. * * * Once again, there is a large data base that has not been exploited. The existing surface elevation data (many years of data at numerous stations) have only analyzed in a preliminary way to understand the details of the tide-river-flow interaction (Jay and Flinchem, 1997). The existing data and the available conceptual understanding of the system should be used in developing better river stage predictions. Better forecasts should be provided and evaluated and a traffic control system should be considered seriously, before much more extensive structural alternatives are considered, particularly in light of the very large uncertainty in dredged material disposal needs associated with the project.”

Science Center memo, Appendix 2, at 22. This position is shared by the Office of the Secretary, of the U.S. Department of the Interior. See Letter from Preston Sleeper, Regional Environmental Officer, Office Of Environmental Policy and Compliance, U.S. Dept. of the Interior to Col. Robert Slusar, Corps, February 8, 1999 at 1-2.

The Corps’ analysis of LoadMax does not resolve the practicable alternatives analysis required by the Guidelines which explicitly state that alternatives analysis conducted to meet the requirements of the National Environmental Protection Act (NEPA) may not be sufficient to meet the Guidelines and therefore the Clean Water Act. 40 C.F.R. §230.10(a)(4). There is no evidence in the record that suggests this alternative is infeasible due to lack of technology and/or costs. Therefore the Corps has failed to meet the requirements of the Guidelines to demonstrate that there is no practicable alternative that will have a less adverse impact on the ecosystem -- in this case an adverse impact on an already extremely damaged ecosystem. 40 C.F.R. §230.10(a)(2).

The second condition of the Guidelines is that no discharge of dredged material can be allowed if it causes or contributes to violations of water quality standards, jeopardizes the continued existence of species listed as threatened or endangered under the Endangered Species Act, or “results in likelihood of the destruction of adverse modification of a habitat” that is a critical habitat. 40 C.F.R. §230.10(b). As discussed below, the proposed project will contribute to existing violations of water quality standards and will cause violations of others and therefore does not comply with this condition of the Guidelines. 40 C.F.R. §230.10(b)(1). Moreover, the effects on the estuary will result in adverse modification of critical habitat designated pursuant to the Endangered Species Act for many threatened and endangered salmonid species, as well as the Bald eagle, as discussed below, contrary to the express requirements of the Guidelines. 40 C.F.R. §230.10(b)(3). Therefore the proposed project fails to meet the second mandatory condition that would allow legal disposal of dredged spoils in the Lower Columbia River.

The Guidelines’ third condition is that no discharge of dredged material can be permitted which

will “cause or contribute to significant degradation” of waters of the United States. 40 C.F.R. §230.10(c). Neither the Corps, nor the states’ water quality agencies, knows the degree to which the proposed project will contribute to significant degradation because the Corps has failed to meet the information, documentation, and analysis requirements of the Guidelines in Subparts B-G, as discussed below. 40 C.F.R. §230.10(c). The Corps’ failure to analyze the baseline of degradation prevents the Department from being able to establish the incremental degradation created by the proposed project. As the Science Center has observed: “Using a historical baseline for comparison could substantially alter interpretation of the probable impacts of the deepening project on the estuary and its subsequent use by salmon.” Science Center memo, Appendix 1 at 3. However, what the Department can know with certainty is that the Columbia River Estuary is already seriously degraded. See e.g., Science Center memo at 1. Therefore, as even the Corps admits that the proposed project will contribute some additional short- and long-term degradation, it cannot comply with the Guidelines’ requirement that the discharge not contribute to significant degradation. e.g., FEIS, Ex. E.

The fourth condition of the Guidelines is that no discharge shall be permitted unless potential adverse effects are minimized. 40 C.F.R. §230.10(d). The Guidelines set out possible methods to minimize these effects in Subpart H. The Corps does not provide information to assess whether it has minimized the potential adverse impacts as set out in this subpart. For example, in its plan to continue using Rice Island as a disposal site, the Corps has not addressed the issue of avoiding the “creat[ion] of habitat conducive to the development of undesirable predators.” 40 C.F.R. §230.75(b). In failing to address the issue of ETM, the Corps has not avoided “changes in water current and circulation patterns which would interfere with the movement of animals,” in this case the copepods upon which salmonid rely. 40 C.F.R. §230.75(a). It has not timed the discharge to “avoid spawning or migration season and other biologically critical time periods.” 40 C.F.R. §230.75(e). It has not used habitat development and restoration to “minimize adverse impacts and to compensate for destroyed habitat.” 40 C.F.R. §230.75(d). While we do not in general advocate for mitigation of increased habitat destruction through constructed habitat, because it is so rarely effective in replacing natural habitat, there is no evidence that the Corps has proposed mitigation sufficient to address the habitat it proposes to continue to destroy for fish, birds, mammals, and other wildlife.

While the Corps has amended its Biological Assessment to include alleged restoration actions in the estuary, it has provided no basis upon which the public could analyze this proposal because there are insufficient details about the restoration projects, including baseline conditions of the sites, that would allow for concluding the proposed activities would create the habitat values. Ownership of potential habitat and even significant expenditures of resources into restoration do not guarantee the restoration of habitat values, as studies done on the Salmon River Estuary have demonstrated. Restoration of needed habitat values may not be able to be realized without other actions such as removal of dikes, cessation of dredging, etc.

The Corps’ project does not meet the Guidelines, as demonstrated by the exceedingly superficial analysis presented in its few pages. FEIS, Ex. E, Section 404(b)(1) Evaluation. As a result, basic procedures of the Guidelines have not been met. See, e.g., 40 C.F.R. §230.5(h), (i), (j), (k), (l).

It is evident that, as new information has become available, the Corps has not followed the Guidelines' caution that the process of addressing them may be "iterative, with the results of one step leading to a reexamination of previous steps." 40 C.F.R. §230.5(l). New information has become available to the Corps on issues of salmon recovery, Willamette River sediment contamination, use of a Deep Water disposal site, the effect of salinity changes on the food web of the estuary, all of which are discussed in our comments. Yet the DSEIS does not address these issues. This is contrary to the Guidelines' emphasis on the "essential" nature of information and documentation. 40 C.F.R. §230.6(a). It is worth noting that it is in this context that the Guidelines reiterate its "presumption against the discharge." 40 C.F.R. §230.6(c).

The Corps uses these few pages to present unsubstantiated conclusions, omitting relevant information that is available to the agency (e.g., exclusion of all information on the estuarine turbidity maxima (ETM), effectiveness of tern predation mitigation, effect of toxic contamination on animal life of the estuary), while drawing conclusions based on little or no analysis. The Guidelines specifically require determination in writing of the potential short- and long-term effects of the proposed discharge of dredged material on the physical, chemical, and biological aspects of the aquatic environment. 40 C.F.R. §230.11.

The Corps' determination of the effects of the project on physical substrate does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(a). The Guidelines specifically require an analysis of "the nature and degree of effect" of the discharge "individually and cumulatively," with consideration to "any potential changes in substrate elevation and bottom contours, including changes outside the disposal site," the "duration and physical extent of substrate changes," and the "possible loss of environmental values," among many other considerations. *Id.* Contained in two sentences, the Corps' Findings state that the depth of sites may be raised as much as 20 feet and that there will be no significant change in physical characteristics. FEIS Ex. E at 3. This obviously does not discuss the loss of environmental values, such as the potential effect on declining populations of sturgeon, or other considerations that are required in this analysis. It does not address recently collected information that certain salmonid populations "may be shifting their vertical distribution to deeper water at night." Science Center memo, Appendix 1 §4 at 7. It simply states an unsubstantiated conclusion.

The Corps' determination of the effects of the project, individually and cumulatively, on water circulation and salinity does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(b). The Guidelines require consideration to all water quality considerations, the "potential diversion or obstruction of flow, alterations of bottom contours, or other significant changes in the hydrologic regime." *Id.* The Corps' Findings merely conclude that the disposal will "affect minor changes in hydrologic features such as circulation patterns, downstream flows, or normal water level fluctuations" and that "channel deepening and related disposal could cause a minor concentration of flow in the main channel." EIS Ex. E at 4. These statements do not constitute an analysis of the effects the Corps identifies nor an evaluation of the cumulative impact of the project, particularly on the ETM, discussed below. The Department must evaluate any increase in flow concentration in the main channel, no matter how minor according to the Corps, in light of the disturbing outcome of on-going research on the ETM in the Columbia and the effect it will

have on temperature and other parameters. However, the Corps has not provided sufficient information in the FEIS or the §404(b)(1) Guidelines Evaluation upon which to rely. In addition, the Corps, having not identified clearly the areas that it proposes to use for flow-lane and deep water disposal, cannot evaluate the effect of the discharge on the river, and therefore cannot meet the requirements of the Guidelines.

The Corps' determination of the effects of the project on suspended particulate/turbidity does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(c). The Guidelines require that the discharge be evaluated individually and cumulatively, to determine the "shape and size of the plume," "duration of the discharge," and the "potential for water quality standards violations," with consideration required for "methods, volumes, location, and rate of discharge, as well as the individual and combined effects of current patterns, water circulation and fluctuations, wind and wave action, and other physical factors." *Id.* The Corps' Findings are cursory and consist of the statement that there will be a "[s]hort term minor increase in turbidity" that "temporarily inhibit[s] light penetration" that nonetheless will "not violate state water quality standards." *Id.* at 4. As the Corps has not identified the locations of the discharge, it cannot have included in its analysis the mandatory considerations quoted above. The DSEIS section on the Guidelines is nothing more than the self-serving conclusions of the Corps that the discharge will not have a significant effect on the physical, chemical, and biological water quality characteristics and therefore on the beneficial uses. For example, the Corps' analysis does not include the time of year of the discharge. The time of year relates both to the cumulative effect of many different considerations set out in the Guidelines as well as what it means to be in compliance with water quality standards. The latter includes both the quality of the river that varies by season, e.g., the river is anthropogenically and naturally more turbid in seasons of run-off and use of the river by sensitive beneficial uses that also varies by season. In the absence of this information about when and where the discharge will take place, the Corps cannot correctly conclude that water quality standards will not be violated. In addition, the Corps has not tested all of the material that will be dredged, as discussed below. In making its Findings, the Corps is assuming that all of the dredged material will be sand. It has not made an affirmative finding that all of the material will be sand, in order to rely upon this analysis by the Corps, a finding it cannot make in light of the possibility that some of the untested deep sediments are fine clays.

The Corps' determination of the effects of the project on introducing, relocating, or increasing contaminants does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(d). The EIS notes that reproductive success for bald eagles nesting along the Oregon shore of the lower Columbia River is low. EIS at 6-41. Studies by the U.S. Fish & Wildlife Service (USF&WS) and others have demonstrated that this reproductive failure is attributable to toxic contaminants, such as DDE, PCB's, and dioxins, the main conduit of which has been dredging. *Id.* Rather than acknowledge that deepening and disposal of more dredged material may increase the eagles' exposure to contaminants, the EIS concludes that contaminant loading is not an issue for the sandy sediments. *Id.* However, the Corps ignores its own statement that dredging may resuspend the contaminants, which then become available for uptake by bald eagles. *Id.* Since PCBs, DDE, and DDT have repeatedly been found in tissue samples of lower Columbia River fish, these contaminants exist in the sediment and will be resuspended by the proposed activity.

The Corps' decision to only sample sediments to 10 inches beneath the surface, when dredging will resuspend contaminants as deep as 3 feet beneath the surface, provides little data for the Department to analyze. Regardless, significant levels of dioxins were detected throughout the lower Columbia River. EIS Appendix B at 24. To adequately show that contaminant resuspension is not a risk, the Corps must analyze larger-grained sediment and analyze to the proposed deepening depth. Simply dismissing the potential for contaminant loading on the basis of the sediment being fine to medium-grained sand does not suffice as serious consideration of the potential harm to eagles or any other affected species.

In the Columbia and Willamette River Sediment Quality Evaluation of the EIS, the Corps identifies contaminants in the sediment that will be dredged, moved, and stored during the project. EIS, Appendix B. Eighty-nine samples of sediments were taken along the proposed dredging sites along the Columbia and the Willamette. The Columbia River Data showed the existence of metals, pesticides, and polynuclear aromatic hydrocarbons. The Willamette River sediment contains highly toxic compounds at high levels. Sample 42 exceeded the screening levels for mercury at .87 parts per million, and sample 42D at 489 ppm of lead. Samples 23 and 24 both exceeded screening levels of tributyltin. Furthermore, known carcinogens and endocrine disrupters were found in the sediment: 9 samples exceeded screening levels for DDT, PCPs exceeded screening levels in 42C, and Dieldrin exceeded screening levels at 40A. In one sample, 24A, pesticides are exceedingly high (DDD exists at 100 ppm and DDT exists in 198 ppm.). The Corps' data demonstrates that there is reason to believe that Columbia River sediments are not benign but it has not obtained sufficient information upon which to demonstrate that it has met the Guidelines.

The Corps has chosen to not conduct Tier II chemical testing of dredged material which contains less than 20% sand and finer grained material. Although the finer grained material chemically bonds better than the larger grained material, the larger grained material may still have chemical contamination. Because of this and the possibility of larger-grained material (up to .50 mm) becoming suspended in the river with impacts similar to larger-grained materials, the Corps should chemically test all of the samples. The Corps should also test for radiation. The Hanford Nuclear Reactor site lies on the Columbia River upstream of the navigation channel. For many years, nine reactors operated at Hanford with once-through cooling; the cooling water was discharged into the river. Radioactive materials traveled down the Columbia and up as far north as Puget Sound and as far south as San Francisco Bay. There is no reason to believe that years of reactor operations did not deposit radioactive materials in the as yet undisturbed sediments of the Lower River. Any omission of testing these materials for possible radioactivity is patently irresponsible and dangerous. The Corps dismisses the need to test for radioactivity based on half-lives of radioactive material and the date Hanford ceased production. However, materials remain stored on the Hanford site and in the river. For example, cesium-137, a radioactive substance, was present in all tested samples in 1993. Lower Columbia Bi-State Water Quality Program, Reconnaissance Survey of the Lower Columbia River, v. 1, May 1993 at 3-29. To avoid resuspension of radioactive materials, the Department should require the Corps to test for radiation prior to issuing a certification.

The Corps should also perform biological testing. The EIS states the only physical and chemical analyses – but not biological – were conducted on sediment samples. EIS at 2-15. It concludes that sediment within the Columbia River navigation channel is not contaminated. *Id.* It also acknowledges that four sites outside of the navigation channel had excessive levels of DDT. *Id.* However, it does not provide the reader with a clear idea of where, specifically, the testing took place, nor how close the testing site is to the navigation channel, the likelihood of this DDT sloughing into the navigation channel or becoming resuspended from the process of dredging, or other consequential effects from dredging near a contaminated site. It does not explain how such contamination might be affected by the advance maintenance dredging 100 feet outside the navigation channel.

Compliance with the Guidelines cannot be evaluated because the Corps only tested at a 10 inch depth. The Corps concluded that material beneath this level would not bind as well chemically as the upper material. EIS, Appendix B at 5. However, without testing to deeper levels, over two-thirds of the material to be dredged and resuspended will have gone untested. The flow of the Columbia River is large enough to suspend and transport particles as large as .10 mm, and as large as .50 mm during high flows. Reconnaissance Survey, *supra*, at 3-19. Thus, most of the material to be dredged could become suspended particles in the river and be dispersed throughout the river, including along the river's sloughs and wetlands. Resident and endangered species, including salmonids, depend on these areas for sustenance and cover, and could be impacted by chemicals bonded to the larger, untested materials.

The Corps' determination of the effects of the project, individually or cumulatively, on the structure and function of the aquatic ecosystem and organisms does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(e). The Guidelines require evaluation of the "nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem" including "effects at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients, currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities" and "possible loss of environmental values." *Id.* The Corps' Findings merely state that flowlane disposal will continue to have the same impacts as they have had in previous years, without noting what those effects are. The analysis, such as it is, does not address what contribution the flowlane disposal has had on the biotic communities of the river and therefore upon higher level food chain fish, birds, and mammals that depend upon it. The Corps is relying on the unsubstantiated conclusion that "[d]redging and disposal actions would be scheduled so that salmon migrations would not be disrupted." FEIS, Ex. E at 6. That statement, although it addresses the issue of salmon, does not establish what the Corps means by "would not be disrupted." Without more information, it cannot be determined that the project will not affect the aquatic ecosystem. The fact that the proposed project might be an improvement in the volume of flow lane disposal over previous years is irrelevant because the on-going maintenance dredging is already causing unacceptable effects on sensitive beneficial uses, effects such as Rice Island and the change in the ETM. In contrast to the requirements of the Guidelines, the Science Center has concluded that the Corps improperly evaluates [e]ach new channel deepening proposal [with] a new assessment that uses current conditions as the sole

baseline for evaluation * * * [which] could substantially alter interpretation of the probable impacts.” Science Center memo, Appendix 1, at 3. Therefore, the Corps does not meet the requirements of the Guidelines.

The Corps’ determination of the disposal sites and their proposed mixing zones does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(f). The Guidelines require that “[e]ach disposal site shall be specified.” *Id.* Contrary to this requirement, the Corps has identified disposal sites in a vague one paragraph explanation. FEIS at 4-36. Moreover, the EIS is not consistent in the number of sites identified, naming five sites in one place and six in another. *Id.* at 4-36, 6-22. These sites would be used for 50 years; the Corps does not establish if its proposed findings address the entirety of that half century. In addition, the Corps states that it will use sites that are an exception to its general flowlane criteria of 50 to 65 feet, but it does not discuss the effects of those exceptions. *Id.* Without presenting any information on the sites, or when, where and how they will be used, the Corps concludes that “[t]he mixing zone would be limited to the smallest practicable area,” “the extent and duration of mixing would be minor,” and that it will be in compliance with water quality standards. FEIS, Ex. E at 6. There is no discussion of the ten mandatory factors to be addressed by the Corps and EPA with regard to determining the acceptability of the mixing zone. 40 C.F.R. §230.11(f)(2)(i)-(x).

The Corps’ determination of the effects of the project on the cumulative impacts of dredged materials does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(g). Although the Corps states that “[i]mpacts to recreational and commercial fisheries will occur,” it also concludes that the project is “not expected to have any significant adverse cumulative impacts on the aquatic ecosystem.” Ex. E at 6. This is patently insufficient, as demonstrated by the remainder of our comments, above and below.

The Corps’ determination of the secondary effects of the project on the aquatic ecosystem does not meet the requirements of the Guidelines. 40 C.F.R. §230.11(h). The Corps addresses this requirement with one sentence: “The proposed action would maintain commercial navigation on the Columbia River resulting in continuing impacts to the aquatic ecosystem.” Ex. E at 6. The Corps, however, by-passes any disclosure of what those continuing impacts are. There are several that come to mind: contaminated sediments, effects of temperature increases in peripheral areas, operation of dams for transportation on the Columbia and its tributaries, the change in the ETM of the Columbia, and the use by Caspian terns of the Rice Island disposal site.

VII. The DSEIS Fails to Take a “Hard Look” at Environmental Impacts

A. The Corps Fails to Consider the Project’s Adverse Effects on the Status of White Sturgeon

The Lower Columbia River population of white sturgeon is considered to be the most productive in its limited range and a source of populations in other estuaries along the Pacific coast. The DEIS does not protect white sturgeon from direct and indirect impacts of the project because it does not adequately assess the ecological importance of the Lower Columbia River white

sturgeon. Flowlane disposal as proposed for the project will fill deepwater habitat critical to sturgeon. The DSEIS does not evaluate the potential impacts of the proposed or foreseeably likely level of disposal. In addition, the DSEIS does not address potential impacts to all habitats used by white sturgeon in the project area. Sturgeon larvae are dependent upon river currents to carry them from incubation areas to rearing areas; it is believed that the wide dispersal of larvae and juvenile white sturgeon is probably an important factor in maintaining a stable population in the lower Columbia River. Moreover, sturgeon abundance and movement in the estuary has been associated with the annual run of smelt, an important food item in late winter and early spring. A continued decline in smelt returns is likely to lead to a reciprocal decline in the abundance, condition, and growth of white sturgeon. Notwithstanding the scientific basis for concern about both the white sturgeon and the impacts of falling smelt populations on white sturgeon, the DSEIS does not provide a sufficient analysis of the environmental or economic effects of the proposed project.

B. The Corps Fails to Consider the Project's Adverse Effects on the Status of Smelt

Columbia River smelt has experienced a precipitous decline over the past seven years. Recent levels of adult returns are a cause of extreme concern. In July 1999 a petition to list smelt under the Endangered Species Act was submitted to the National Marine Fisheries Service. Any further activities, such as construction of the 43-foot navigation channel, that could further threaten the Columbia River smelt must be avoided until there is a substantial rebound in smelt returns and the causes of recent declines are more clearly understood. The DSEIS does not evaluate the baseline conditions or cumulative effect of channel deepening on smelt populations.

C. The Corps Fails to Consider the Project's Adverse Effects on the Status of Green Sturgeon

Although the Corps has recognized that Green sturgeon are present in the Lower Columbia River estuary, the DSEIS does not evaluate the effects of the proposed project on this species. As with White sturgeon, the Corps has not recognized that the project is likely to have an effect because sturgeon are bottom feeders that are most likely to be present in the area of dredging operations and adversely affected by being buried in sediment disposal or entrained in dredging equipment. Given the status of Green sturgeon, which have been petitioned for listing under the Endangered Species Act and for which NMFS has stated the listing "may be warranted," the unresolved issues discussed elsewhere may be even more critical than for White sturgeon. 66 Fed. Reg. 64793 (Dec. 14, 2001). In its notice, NMFS observed that Green sturgeon are present in the Columbia estuary and are particularly vulnerable to habitat degradation and species decline because they are a long-lived species with low fecundity. *Id.* In light of the precarious position of Green Sturgeon as a species and the strong likelihood that individuals of the species will be directly and adversely impacted by dredging operations, the Corps' failure to consider effects on this species is a failure to take a hard look at environmental impacts.

D. The DSEIS Fails to Evaluate the Adverse Effects of the Proposed Restoration Actions

Two significant so-called restoration projects have been added through the DSEIS, the Lois-Mott Island project and the Miller-Pillar Rock pile dike project. It is our belief that neither of these is a restoration project, but merely dredged spoil disposal by another name. The Corps has not explained in the DSEIS why creation of shallow water habitat – one habitat type that has increased from historic levels – provides a benefit to salmon. It does not, because it is wholly lacking in a required alternatives analysis for all alleged restoration projects, evaluate alternatives to either of these projects or the rationale behind creation of this particular type of habitat. It does not evaluate the projects in light of the habitat types that have shown serious decline, namely tidal marshes and spruce swamps, which have declined by at least 43 and 77 percent respectively over the last 100 years. Changes in Columbia River Estuary Habitat Types Over the Past Century, Duncan Thomas, CRDDP, 1983. Neither of the two islands involved in the Lois-Mott project are actually historic islands but rather were created wholly from dredged spoils. The DSEIS does not evaluate the effect of the project on use of the area to be filled by sturgeon, although it is a known rearing area for the species. The DSEIS does not evaluate the effect from tern predation from increasing and maintaining any dredged spoil islands or the effect on bathymetry, flows, and sediment transport from the huge Miller-Pillar project. Finally, it does not consider the implications for plunging forward with a huge so-called restoration project when the scientists most knowledgeable about the Lower Columbia River and estuarine habitat restoration have agreed that only small pilot projects are scientifically defensible at this point, in light of the experimental nature of such restoration.

E. The DSEIS Does Not Consider Information on the Location of Migrating Salmon

The analysis the Corps relies on to make the determination that dredging and disposal will not harm migrating salmonids is inadequate and does not account for scientific evidence that shows most yearling chinook migrate in deep channel sites rather than near tidal shore areas. Bottom, D.L. and M.C. Healey. 1984. Fishes of the Columbia River estuary, CRDDP. The Corps continues to lack sufficient information on the use of the estuary by wild juvenile salmon, instead relying on data concerning hatchery salmon. The DSEIS also does not include an analysis of the barriers to returning salmon presented by poor estuary conditions, such as high temperatures, that result in reduced genetic diversity of the species.

F. The DSEIS Does not Evaluate the Risks and Effects of Navigational Accidents

The DSEIS does not include any discussion or evaluation of the possibility or effects of a navigational accident. The MCR is the most likely place for such an accident, given the serious safety issues and the greater likelihood that a shipping accident in that area would be catastrophic as opposed to a more simple grounding. The DSEIS has neither recognized nor evaluated existing problems with transit safety that have been caused by the Corps alteration of the MCR

through spoil mounding and changing the MCR bathymetry which, in turn, alters wave action. The entire document is simply silent with regard to this entire issue. Groundings have and continue to occur, accidents happen – witness the New Carissa and the Exxon Valdez, and as ever larger vessels are constructed by shippers without concurrent and necessary power to control these ships, accidents are even more likely to occur than they are at present. The DSEIS makes no reference to the decreased maneuverability of today's and tomorrow's fleets nor to the environmental and economic ramifications of ships that bar and river pilots may be helpless to fully control. As competent as they are, pilots, particularly bar pilots, rely heavily on their professional and personal intuition. Intuition, no matter how powerful, is human and humans are subject to making mistakes. The risk of an accident is never zero.

VIII. The Corps is Required to Develop New Environmental Impact Statements to Address Long Term Disposal of Dredged Spoils

The DSEIS does not adequately evaluate where the Corps will place 50 years worth of dredged spoils from the river channel and MCR. The failure must be looked at in light of the Corps' previous attempt and concurrent failure to create a Long Term Management Strategy (LTMS) for the disposal of 50 years of operation and maintenance spoils and its complete failure, characterized by other commenters and incorporated by reference below, to resolve issues related to ocean dumping. Instead, the DSEIS shunts aside the issues raised by dredged spoil disposal and concerning serious issues related to erosion of near shore, beach, and shallow water habitat areas by stating that it intends to postpone use of the deepwater site for 10 years. Even if this were to work, it does not address the other 40 years of disposal and removal of sediments from the estuarine/offshore system.

IX. Mitigation is Required and Must be Tied to Project Impacts

The DSEIS does not contain any discussion of mitigation related to project impacts. Many commenters have raised issues regarding mitigation for beach erosion, land erosion, commercial fishing losses, etc. all of which have been and continue to be ignored. Studies are an unacceptable form of mitigation. Instead, studies are supposed to be done prior to the Corps' issuance of draft NEPA documents.

X. Adaptive Management

The DSEIS is a violation of NEPA by its attempt to substitute a specious, flimsy, so-called adaptive management scheme in place of federal requirements to collect data and provide an analysis of project impacts for all the reasons expressed elsewhere in these comments

XI. The DSEIS Does Not Address Many Issues Concerning the Economic Costs and Benefits of the Project

A. Economic Ramifications of Safety and Transit Issues Related to the MCR Must be Considered in the DSEIS

As discussed above, the proposed channel deepening project has failed to consider the issue of whether the MCR will require additional deepening in order to accommodate the deeper draft vessels the Corps is intended to attract. Therefore, the DSEIS has failed to consider the substantial economic ramifications of delays that will detract from the alleged economic benefits of the project as well as ways in which the depth of the MCR will negate any favorable attitudes of shippers regarding use of the Columbia River ports the project is intended to induce. Neither has the DSEIS recognized or evaluated the existing problems with transit safety that have been caused by its alteration – with spoil mounding and by changing the MCR bathymetry which in turn alters wave action – that also have potential economic implications. Likewise, the DSEIS does not consider the economic costs of navigational accidents.

B. Impacts of the Project to Commercial Fishing and Crab Fishing Industry are Not Considered in the DSEIS

As noted by many previous commenters on various project documents, the Corps continues to omit calculation of the cost of the proposed channel deepening project to commercial fishing and crab fishing interests. In addition, it fails to calculate the cost to Longbeach from erosion caused by its projects that have and continue to change the sedimentation processes of the action area. IT does not even mention the potential for erosion of shallow water habitat. New to the DSEIS, the Corps fails to consider that there are negative economic ramifications to commercial fishing from the proposed alleged “restoration” projects, also known as dredged spoil disposal sites, at Lois-Mott Island and the Miller-Pillar Rock pile dikes.

C. The DSEIS Fails to Consider and Evaluate the Issues Raised by Its Cost-Benefit Review Panel

The DSEIS fails to consider and evaluate the issues raised by its own hand-picked panel which produced the “Technical Review of the Benefit and Cost Analysis in the Draft Supplemental Integrated Feasibility Report and Environmental Impact Statement Dated July 2002: Summary Report of the Technical Review Process and Results,” September 9, 2002. For the reasons contained therein, the DSEIS analysis is deficient on its face. In addition, as the Cost side of the panel included three people, all three of whom are currently employed by an agency proven to “cook the books” for dredging projects or were previously employed by the Portland district, this side of the analysis – which, naturally, is particularly favorable of the Corps findings, requires additional analysis. Moreover, the cost panel declined to comment on the significant cost ramifications of the Corps’ gross underestimation of the dredging volumes, thereby rendering its own analysis facially flawed. The failure to correctly assess the dredging volumes over the next 50 years results in incorrectly lowered costs of dredging, land purchases necessary to

accommodate dredged spoils, mitigation required to mitigate dredged spoil disposal, environmental costs associated with dredged spoil disposal, etc. And, neither the costs nor the benefits panel was provided with any information whatsoever concerning the navigational and dredging issues related to the crossing of the Columbia River Bar.

D. The DSEIS Omits Altogether the Costs Associated with Dredging and Dredged Spoil Disposal of Contaminated Willamette River Sediments

Although the DSEIS omits both costs and benefits associated with the dredging of the Willamette River, a necessary and overdue adjustment to the FEIS, it is inappropriate for the Corps to ignore the implications of the contamination of Willamette River sediments in the DSEIS. First, the project must be taken as a whole. Despite the Corps correct decision to postpone consideration of Willamette River deepening, it has not renounced its intent to continue this part of the project but merely placed it on hold. Therefore, it is improper segmentation to ignore the Willamette portion of the channel deepening project altogether if it is a foreseeable part of the action. Second, toxic contamination from the Willamette River will continue to enter the Columbia River, whether from clean-up actions, dredging, and/or natural processes. Therefore, the Willamette as a source of toxic contamination associated with the project itself, must be taken into account. Third, the operation and maintenance dredging associated with maintaining access to the berths in the Willamette River – which amount to the vast majority of the berths in the entire Columbia/Willamette/Snake river system – is an associated part of this project because the project itself includes operation and maintenance for a 50 year period.

E. Oregon's Failing Infrastructure Must be Evaluated in Considering the Benefits of the Project

It is well known that Oregon is currently suffering from a severe and unremitting budget crisis that will have long-lasting implications on its budget regardless of whether it resolves the issue through borrowing, new taxes, and/or budget cuts. Meanwhile, the state's bridges are falling apart. As the Corps is no doubt well aware through the media, state inspections are revealing more and more bridges that have sufficiently significant cracks as to require the rerouting of traffic. The kind of traffic most likely to suffer long detours are trucks, as they present the kind of stresses to cracked bridges that car traffic might not. The situation is bad, and foreseeably likely to get worse with increased safety inspections, the effects of multiple detours, the high costs associated with fixing defective bridges, and the lack of sufficient state funds with which to do it. Nonetheless the Corps' DSEIS does not evaluate the effects on benefit calculations for the project from the current and future degraded infrastructure.

Conclusion

NWEA hereby incorporates by reference all comments made by Columbia River Alliance for Nurturing the Environment (CRANE), American Rivers, Channel Deepening Opposition Group (C-DOG), Columbia River Crab Fishermens Association (CRCFA), and Columbia River Estuary Study Taskforce (CREST) to the draft and final Environmental Impact Statements (DEIS and

FEIS) as well as to this DSEIS. NWEA further incorporates by reference the comments prepared by the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, the Washington Department of Natural Resources, the Oregon Land Conservation and Development Commission. In addition, NWEA incorporates by reference its own comments made in response to the DEIS and the FEIS, its FOIA requests, and the Corps responses to its FOIA requests. Finally, in addition to requesting an extension of the public comment period for this DSEIS, NWEA requests that the Corps issue a revised draft SEIS, and that the Corps provide a public comment period for the final SEIS. These steps are necessary given the late production of both the results of the “Technical Review of the Benefit and Cost Analysis in the Draft Supplemental Integrated Feasibility Report and Environmental Impact Statement Dated July 2002: Summary Report of the Technical Review Process and Results,” September 9, 2002 and the failure of both the Corps and NMFS to produce documents in response to numerous FOIAs, as discussed above.

Better yet, perhaps the Corps could stop attempting to build this wasteful project.

Sincerely,

Nina Bell
Executive Director