



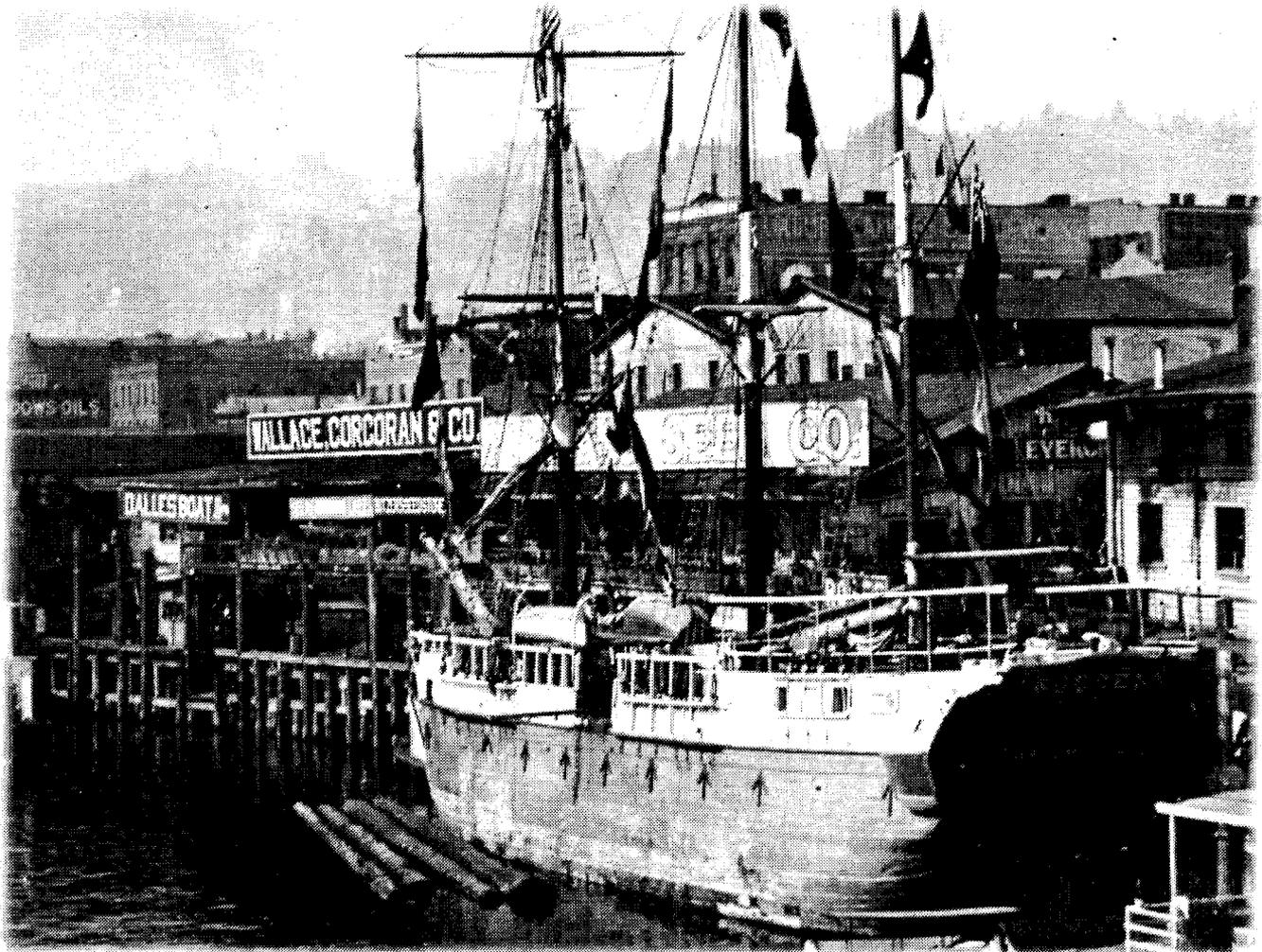
US Army Corps  
of Engineers®

Portland District

Appendix H, Volume III: Ocean Dredged Material  
Disposal Sites Coordination and Meeting Meetings

# Integrated Feasibility Report for Channel Improvements and Environmental Impact Statement

Columbia & Lower Willamette River Federal Navigation Channel



August 1999

*Portland Waterfront Circa 1900  
Photo Courtesy of Port of Portland*

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**APPENDIX H, VOLUME III**  
**OCEAN DREDGED MATERIAL**  
**DISPOSAL SITES**  
**COORDINATION AND MEETING MINUTES**

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**Appendix H  
Columbia River Ocean Dredged  
Material Disposal Sites**

**Volume III  
Coordination and Meeting Minutes**

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**Columbia River Dredged Material Disposal Site Workshop  
May 12, 1999  
Meeting Notes**

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***Introduction***

On May 12, 1999, the U.S. Army Corps of Engineers, Portland District (COE) and U.S. EPA Region 10 (EPA) convened a day long meeting at the Corps of Engineers, Portland District Offices. The meeting was called to further discuss the proposed disposal sites and the possible monitoring and management plans for these sites. Representatives from Federal, State, and local agencies were in attendance, as were individuals representing the crab and oyster fishing industries. A neutral facilitator, Valerie Lee of Environment International Ltd. (EI), Seattle, WA, led the meeting and the notes of the proceedings were recorded by Polly Hicks of EI. An attendance list is attached.

***Opening Remarks***

**The Facilitator** opened the meeting by expressing her hope for the group to come to a resolution by the end of the day. She believed that the parties were very close to agreement and as a result she was optimistic that a consensus could be reached. A draft of the April 14th meeting notes had been passed out and should be reviewed for comments, any and all comments should be e-mailed both to the facilitator as well as Laura Hicks. The facilitator wrote her email address as [exec@envintl.com](mailto:exec@envintl.com) and then introduced Laura Hicks.

**Laura Hicks** - discussed the outline and agenda of the day's meeting. Her thought was to begin with ideas on site management, with the COE/EPA discussing their thoughts with those of the group. The group would then move to a discussion of proposed sites and an adjustment of these sites. The COE/EPA would start off with a very brief explanation of how they got to the now proposed sites and then get more input from the different members of the group.

**Eric Braun** - stated that at the last meeting COE/EPA talked generally about site management. However, it was hard to discuss management since the different sites which may be designated will have different management techniques. Eric outlined some possible management and monitoring techniques (Slide 1).

### Site Management

- Repetitive vs Non-repetitive
- Annual review of what was done prior year and determine what should be done for the current year
- MOU or Taskforce
- Other Ideas

He noted that the COE could use repetitive dumping on the same spot and non-repetitive dumping, i.e., the dumps would be spread out over a larger area. With repetitive dumping you minimize the overall area impacted.

Eric then discussed having an annual review of the prior year's disposal which would occur before the subsequent year's disposal. Historically this discussion has been between the EPA and the COE. But with all of the considerations that there currently are at the MCR and people's interests, we are currently talking about having more involvement by those outside the COE and EPA in these discussions, such as having it structured in an MOU or Task Force to discuss how the material is behaving and where to go from there.

Eric explained that an MOU is a memorandum of understanding. He said that the EPA and COE would have to sort out the details of exactly to what they can agree, but they do want more involvement of others.

**Laura Hicks** - opened up the discussion about site management or an MOU for other ideas.

**Bob Burkle** - explained that there is a Grays Harbor Crab Group, which includes the Seattle COE, to measure disposal impacts and that this group is actually working. This effort involves the recognition of the Seattle COE that there are impacts to crabs and other organisms. It also involves scientific data and mitigation considerations, primarily for crabs and other resources. Bob is willing to send the COE a copy of the Grays Harbor Crab strategy. The mitigation involves crabs, other resources, timing restrictions and avoidance methods. Over the years they have collected enough data to predict where the crabs are and their abundance. This information is used to determine when it is safe to use a dredge, and to dispose, and when not to. Bob stated that there is annual variance and that the Seattle District wants to maximize dredging. Therefore, they use a beam trawl to take quick samples to determine how far to go with disposal in a given year. There are other tools that can be used here and the tools used at Grays Harbor were developed with the cooperation of the Seattle COE. They use pots to calibrate the catch per effort against the beam trawl data and to develop a comparison to get a number of crabs per hectare. Bob recognized that there are lot of things to be done and he would be happy to send a copy of the Grays Harbor Strategy. Bob indicated his willingness to help the working group come up with ideas. For WDFW to enter into an MOU, the project must not result in a net loss of habitat.

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**Christine Valentine** - said that the concept that Bob talked about is similar to Oregon's ideas about having a site management Task Force. Oregon wants a more active voice in management and would like the Task Force to have the ability to set up research programs and provide recommendations to the COE. This group involves cooperation to seek funding for research so they are not stuck for funding. This research could apply to other sites. Oregon would also like outside expertise to help with the research. The key for Oregon, in entering into an MOU, is that they would want to know that the COE/EPA would take the group seriously and that the group couldn't just be disbanded. She also expressed concerns about the time and staff commitments that such a group would entail. Oregon had ideas about specific types of studies and she is willing to discuss them later.

**Facilitator** - asked for clarification about whether Oregon sought the establishment of a Task Force with funding so that members of the Task Force would be paid.

**Christine Valentine** - said that yes she would like to see some partial compensation because of limited staff resources. This would also get the staff committed so that they are there at the meetings. The details of this need to be worked out.

**Eddie Beasley** - asked for the definition of a Task Force as compared to an MOU.

**Ben Meyer** - said that this working group is a task force. Under an MOU, you would have a signed agreement from those involved in a task force.

**Christine Valentine** - in order for a Task Force to work out it has to have ground rules and an official commitment. The Oregon position, for the initial 5 years, is that it would be a line item in the channel deepening budget. Looking at the overall project cost over time, it is a relatively small amount of money.

**Facilitator** - summarized elements of Oregon's proposal on flip charts and asked for other suggestions with respect to the Task Force.

**Dick Sheldon** - said that he listened to Bob and he has a long term association with the Grays Harbor Project. There are pluses and minuses on the mitigation attempts there. There are problems with the true value of the Grays Harbor Project to the resources and its cost. The agencies have different priorities from the fishermen. The Crabbers' concern is the loss of the fishery to the fishermen. Mitigation is money paid to the State, but if mitigation money is paid to the State, then there is no compensation to the fishermen. He has not heard any admission by the COE that there is a loss. The grounds are sterilized from disposal. Mitigation should go to the fishermen. He disagrees with the conclusion that mitigation money should be paid to the State and that is compensation.

**Facilitator** - asked what Dick meant by compensation.

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**Dick Sheldon** - explained that mitigation is compensation and one tries to neutralize a loss with mitigation. You have both resource and economic portions of the loss. His main point was to not forget the economic losses.

**Facilitator** - so you are suggesting a monetary compensation to the Crabbers?

**Dick Sheldon** - you have a loss, so how else would you do it?

**Arlene Merems** - stated that mitigation in the form monetary compensation for fisheries needs to be addressed. This project will benefit the ports at the MCR; therefore, it is not unreasonable to compensate the fisheries. It is not hard to figure and calculate that number out and expand it.

**Facilitator** - asked for clarification about how Arlene would do that.

**Arlene Merems** - replied that you look at the amount of disposal. You assume lethal impact to crabs and determine lethal impact at certain depths of accumulation of dredged material. You multiply this number out by the size of the foot print, times the price of the crabs, times the number years. This is not an impossible resource assessment task. It can be considered in the mitigation. It depends on whether the Ports and the COE see it as important.

**Facilitator** - asked for clarification about how Arlene would address natural survival rates because there is natural mortality in populations.

**Arlene Merems** - there are models to do this and to do population assessments including the natural mortality. The models can also account for unnatural mortality.

**Facilitator** - asked Arlene how she viewed injury; what was its definition?

**Arlene Merems** - said that the natural mortality element would be removed from the calculation.

**Christine Valentine** - she said that Oregon did not propose mitigation with the Task Force because they are not convinced that physical habitat mitigation is feasible. The Task Force is to learn about what the dredged disposal is doing. Mitigation is another element.

**Arlene Merems** - stated that there is not just one approach to mitigation. The Task Force is a kind of mitigation because it allows for resource management at the site.

**Facilitator** - reviewed Oregon's Task Force proposal and asked if the mitigation is a part of their proposal.

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**Christine Valentine** - noted that it is something yet to be decided and wouldn't be a part of the Task Force.

**Bob Burkle** - wanted to clarify mitigation and said that he agrees with Dick about what mitigation is. Mitigation is the mitigation sequence codified in law. Avoidance of impacts is first and the collection of data. You minimize the impacts of disposal using best science and timing restrictions to avoid high densities of crabs. Dick's mitigation is highly experimental and not the best thing to use to mitigate the resource. You need to add something to mitigate not just the impacts to crabs, but also the impacts to the fishery. To take "X" acres out of production, it is not unreasonable to pay the Crabbers.

**Facilitator** - asked if the suggestion is to pay individual Crabbers, groups, or what?

**Dick Sheldon** - responded that he would let Dale discuss this. He also said that the crabbing industry is doing things, he doesn't think that they should have compensation go to individuals.

**Dale Beasley** - explained that there is a buy-back program in the industry to buy individuals out of the fishery that are damaged. This could be one form of compensation.

**Facilitator** - asked if Dale meant compensation would be putting money into the buy-back program. The facilitator then asked how the Crabbers determine where pots are set. How do you know whose grounds are whose?

**Dick Sheldon** - said that the Crabbers typically make the same mistake year after year and that Crabbers go back to the same points to fish. No one has a base homestead; however, they usually stay in the same place.

**Dale Beasley** - it usually works that way – it's like having a homestead. If Crabbers have to move, they will move into another homestead. There are fences out there to a degree.

**Dick Sheldon** - said that it is almost impossible to deal with mitigation for individuals. Contribution to a buy-back program to reduce the fleet and increase the catch would put you in good graces with the Crabbers.

**Steve Gray** - said that you have safeguards in place for the resource because you only have so many licenses. The industry is overcapitalized. 90% of the Crabbers believe that there are too many fisherman in the crabbing industry. He stated that he and others have crabbed in Site B. Because the COE/EPA mounded at Site B, he lost gear and couldn't place traps where he had before. The impact to me is there, how do you mitigate. You have to determine the individual fishery impacts.

**Facilitator** - asked what he did in response to the mounding at Site B and asked if he moved.

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**Steve Gray** - responded that you live on hope. But now he doesn't fish there because as you come to the mound you go from 15-18 crabs per pot to 3, 4 or 1 per pots for pots on the mound. However, there is more on the other side of the mound. When you come to the mound, you have to raise your pots. It takes a while to learn to move from a site you have fished.

**Dick Sheldon** - said that they should limit the number of pots that a boat can fish. There is no mitigation for removing fishermen. Removing fisherman would be beneficial to the crabbing industry.

**Steve Gray** - the Crabbers are trying to build a program to buy licenses.

**Kathi Larson** - asked if this type of program has taken place elsewhere.

**Dick Sheldon** - clarified that it doesn't yet happen in Washington. If Washington creates a buy-back program, others will follow.

**Bob Burkle** - commented that the buy-back program is biologically justifiable. For example, buying out the nearshore north site where grain size is different. You know crabs are harvested there and he likes the idea of a buy-out.

**Diane Perry** - stated that she would like to encourage some form of communication in the management option. She also pointed out that the Ports are the transportation planners and that any benefits from the channel deepening or O&M projects accrue to the economy of the States and not to the Ports.

**Facilitator** - asked the Crabbers their reactions to a Task Force or an MOU.

**Dale Beasley** - stated that this was an ongoing discussion, but the idea of a Task Force was not a bad idea.

**Christine Valentine** - stated that the Task Force should not be an agency-only Task Force, but that it should also include the Crabbers, Trawlers, Fishers, and other agencies.

**Facilitator** - asked if anyone else besides the stakeholders, State and Federal agencies, the COE, and the EPA should be involved in the Task Force.

**Bob Burkle** - suggested that the Ports should also be included.

**Christine Valentine** - agreed that the Ports should be involved.

**Eddie Beasley** - agreed that it was an excellent idea to have the Ports involved and also she agreed with the various points listed on the flip charts.

**Facilitator** - asked if the Crabbers were comfortable with Oregon's idea?

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**Dick Sheldon** - replied, yes, as long as the fishing industry was a factor discussed by the Task Force.

**Rick Vining** - stated that a large Task Force was fine, but that an MOU should only have agency signatures because his Director would not sign an MOU with all of these signatures. However, non-agency participation could be written into the MOU.

**Dick Sheldon** - noted that if the Crabbers hadn't been here, the agencies would have crashed a long time ago. In his opinion, who has the power on the Task Force makes a difference. The MOU process will only go so far in certain ways.

**Facilitator** - said that the MOU could be written in such a way to allow inclusion of stakeholder and their interests and concerns.

**Dick Sheldon** - replied that would work for us.

**Bob Burkle** - stated that his manager at WDFW would sign and MOU with stakeholder signatures on it.

**Kathi Larson** - said that she had no problem with it.

**Ben Meyer** - said that he was also fine with it.

**Facilitator** - asked for clarification about whether the parties were comfortable with having an MOU with a Task Force.

**Christine Valentine** - asked Kathi and Ben whether would be willing to participate in a Task Force.

**Kathi Larson** - said that they would have to talk about it.

**Kathy Taylor** - stated that it was a good idea to have a Task Force with an MOU. Her support is contingent on the Task Force including the aspects as proposed by Oregon and discussed by the Group. She stated that it would rough finding staff time for the Task Force; therefore, participation in the Task Force would have to be worth it and there needed to be a reasonable goal for the Task Force.

**Facilitator** - clarified with Kathy that CREST was willing to support and participate in a Task Force as proposed by Oregon. The Facilitator also asked the Bar Pilots if they would like to participate in the Task Force.

**Thron Riggs** - said that he was happy to participate in the Task Force as long as it addressed navigation issues.

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**Facilitator** - stated that unless there were objections, that pilot involvement would be a good thing in the eyes of members of the working group. She noted after a reasonable time that there were no objections and then she asked the note-taker to reflect that the Working Group had concluded that the Task Force should have Bar Pilot involvement.

**Kathi Larson** - asked who would write the MOU?

**Facilitator** - noted that there was a good question that the Working Group should address.

**Rick Vining** - observed that the Grays Harbor MOU was first written by him and USFWS and then it went to the COE to be adjusted and signed. This route had been taken because WDOE preferred that it create the first draft rather than the COE. He noted that the MOU in Grays Harbor reflected what the WDOE had been asking for in this matter – a research component to bring in experts for tougher issues.

**Laura Hicks** - stated that she appreciates the time Oregon spent in developing the Task Force proposal and she liked the way Christine Valentine/Oregon had worded it. She noted that there may be issues with FACA and that they would have to work through the details and circulate a draft. She underscored that she thinks that the idea is good. Other research could be folded into the Task Force but it may not be funded exclusively by the COE. She said that there is lots of potential.

**Christine Valentine** - noted that she understands that the COE will have to address legal issues. She also said that it sounds like the COE is really interested and that is good to know.

**Laura Hicks** - explained to the Working Group that the COE there is a pre- and post-construction and engineering design phase and they have funding for this for 2 years. After this time, the COE will not have funding and the COE would have to look at how to continue the funding to support the Task Force effort. The COE doesn't have funding for an extended period of time for this.

**Facilitator** - asked the Working Group whether they needed to resolve an MOU before they could discuss sites. There was brief exchange among the participants about the challenges in developing an MOU and the time that it would take to work out the details and the Working Group engaged in a discussion of management and monitoring and proposed sites. The facilitator asked what the Working Group wanted to see for management and monitoring and does what they want depend on specific sites.

**Dick Sheldon** - said it is shaky if management and monitoring is set in stone for 50 years at a site. He asked if the Task Force would have the authority to adjust things and fix it. He noted that he has sat on a lot of task forces that have done nothing. He wanted reassurance that this task force would be good. He noted that in 50 years you will have

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different equipment and more information and that there will be a lot of holes in this thing. Could we deal with this on a 5 year basis with an emergency provision.

**Arlene Merems** - stated that the site selection was a Catch-22. They are trying to select sites and determine the power that the Task Force has in the process. Oregon needs a level of comfort. She suggested selecting a large site and doing the studies to make the comfort level increase. Because if they do not have that power, Oregon is not sure if the Task Force can appropriately manage the site. These things go hand in hand. Pre-assessment of the site is key. Without good baseline information trying to determine what will happen from disposal is moot. Oregon has different ideas of what pre-assessment and monitoring are.

**Christine Valentine** - commenting on what Dick said, stated that the Group [Task Force] ought to be able to address areas within a site or change a site boundary or select another site.

**John Malek** - clarified that under the COE and EPA regulations it is the EPA. The EPA must have a monitoring and management plan for the site and the EPA is required to manage the site.

**Bob Burkle** - said that he believes that the Working Group has no business discussing a 50 year site because there are too many unknowns. He believes that the buy-back program for Crabbers will take pressure off of designating sites. If the buy-back could free up areas that he might like to dispose at but for Crabber interests.

**Facilitator** - sought clarification from John Malek that under the Ocean Dumping Statute that EPA is required to designate a site for perpetuity. John Malek provided this clarification to the Working Group.

**Christine Valentine** - noted that the site is designed for 50 years of dumping that is designated in perpetuity. Therefore, she asked how is the Working Group going to make site designation reasonable. She noted that there should be feedback for management.

**Eric Braun** - stated that they would accomplish this through the MM Plan.

**Christine Valentine** - said that it would help to know that the COE understands this.

**Mark Siipola** - tried to explain the concept of designation in perpetuity under the Ocean Dumping Act by analogizing to channel maintenance. He said that in the Columbia River Congress had specified that the COE shall maintain the channel at 40' . This is forever until Congress changes it. In our case, we have sites that have been designated and Congress says that they are forever. However, we are changing the sites after 10 years. Site designation is forever until we change it. The COE/EPA can manage an area within a site. If we decide it is too small, then we can't change the boundaries of the site.

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**John Malek** - we would like to designate a site that gives the COE and EPA some flexibility. Under the Ocean Dumping Act EPA has to designate in perpetuity. Management goes along with designation. The EPA can respond to adjustments through management of the site.

**Mark Siipola** - if a designated site is too small, the COE does not have the flexibility to manage disposal within the designated site.

**Arlene Merems** - this makes monitoring very important. I assume that we will go back and monitor sites to determine resource impacts. She noted that a nearshore site will have possible mounding, but with a deeper site you would not see those physical changes which have traditionally served as a trigger to set-off monitoring. She expressed concerns that, as a result, in a deep water site monitoring may not be triggered because there is no mounding even in the case where there is a biological impact.

**John Malek** - said there is an MM Plan for each site. The MM Plan accompanies site designation. As a result, there is no MM Plan because there is no site. You have to designate and identify the site to craft an appropriate MM Plan.

**Arlene Merems** - asked about the MM Plan that Oregon had seen.

**John Malek** - said it was a draft.

**Arlene Merems** - asked if it was a generic form.

**John Malek** - replied that it was a generic form to get comments on the EIS and that they have not gotten to the development of a specific MM Plan for a site. We do need to focus on where a site is and what are its characteristics. Right now it's open.

**Facilitator** - clarified that John Malek/EPA was saying that he is open to the participation of others in the development of a MM Plan. The facilitator then directed the group toward a discussion of possible objectives of an MM Plan.

**Bob Burkle** - asked for a clarification from Mark Siipola. He asked if they decided to designate a site, such as a nearshore north site, would the COE/EPA agree not to use the site until a buy-back program kicked in for the Crabbers. He also asked would such a site fulfill the requirement for a 50 year site.

**John Malek** - stated that site designation under the Ocean Dumping Act is like putting blocks on a map and designation has little relationship to subsequent use. Some sites never received material. The response to your question is "not quite yes" because you can't put conditions in the site designation. Nothing says that if a site is designated it has to be used. John further explained that under the Ocean Dumping Act from the low tide line to Japan is "ocean," except for a few islands in between. Disposal is putting material into the "ocean" for no purpose. Section 404 of the Clean Water Act applies to

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the situation where you are trying to construct something. For example, something for erosion control would be under Section 404. Section 404 goes from the high tide line out to 3 miles.

**Steve Gray** - said that he will oppose nearshore dumping. He is opposed to a situation like in Long Beach because they can only crab within 4 miles. But if you want to buy out the Crabbers lock stock and barrel, have a mitigation plan. The buy-back plan is not to buy the individual out. The Crabbers feel that wherever you dump is unfair to our industry. He likened the disposal to the situation where you put dirt on a farmer's potato field. You would pay the farmer. When you dispose, the Crabbers have to adjust. There will be impact from disposal and you have to mitigate for it.

◆  
**Break**  
◆

**Facilitator** - observed that a number of people had noted that they would have difficulty talking about MM objectives without knowing what site they were talking about. However, she suggested that the Working Group focus briefly on some general MM objectives that could apply to any site and then discuss various proposals for sites that had been developed since the last meeting.

**Eric Braun** - explained the COE/EPA current sites. Expanded Site E and the North Jetty will not accommodate O&M and the Channel Deepening; therefore, they are looking for another alternative. At the last meeting, he noted that the COE/EPA had reduced the size of the sites that had been proposed in the DEIS. He noted that they had heard that a number of people wanted Site 8 (Dale's Site) or another similar site. After checking on the benthics and consideration of other factors, he noted that the COE's primary purpose is to maintain the MCR. Eric described a double-box proposal that was circulated among the participants since the last meeting. He explained it was further offshore to avoid nearshore conflicts and it is more outside than inside the ZSF. He elaborated that there was confusion among some about the box within a box. The COE's target disposal area will be inside the inner box and the outer border will serve as a buffer for fine dusting which may occur; this ensures that all material disposed remains inside the designated site boundary. In the inner box the COE can fit their estimated quantity of disposal material over 50 years. The COE will continue to put material into Site E but there concerns with Site E. There is a potential that Site E's use will be cut back. The COE and EPA need a site that meets all of their disposal needs. We may not use all of the site; that is where management comes into it, i.e., determines how to use the designated site. The previous point that management for this site [double-box] as compared to Site E is true, because at Site E we are looking a shallow area that it is heavily transited. Therefore, mounding and wave safety is an issue. The offshore site has considerations too. The COE/EPA has to ensure that the use of it creates no wave or navigational problems. These considerations will factor into the creation of an MM Plan for the site.

**John Malek** - emphasized that the COE has the requirement to look at a site and plan for a 50 year disposal time period under the COE regulations. EPA has to designate a site as permanent; however, that is not precisely true in the sense it can be de-designated. He further explained that site use does not necessarily have to come with site designation and that these are two separate issues. He said that there is flexibility regarding how the material is disposed as long as you stay in the box. With respect to management of the site, he noted that you don't want adverse wave conditions. This is the minimum criterion for management; however, you have to do more and consider additional objectives. In his experience, all sites have been too small resulting in material going outside of the site, which is a violation. On the East Coast and in the Gulf, their sites are huge and their philosophy is to use a big site forever. The COE/EPA tried this approach when they developed the large north and south sites; however, the parties did not like this compromise.

**Eddie Beasley** - asked if any deep water sites were large.

**John Malek** - said that there are no large deep water sites in the East or the Gulf.

**Eddie Beasley** - replied that there are deep water sites but they are small. She said that she would read from a COE procedural guideline. She said that the guideline stated that most dredged material disposal sites are small. Some 82% of them are less than 2 n. mi. sq. and over half of these cover less than .5 n. mi. sq. The only large sites are in shallow water and none of the size of the double box compromise site, circulated by the COE/EPA, are in deep water.

**Laura Hicks** - said that site designation works in conjunction with the things we have discussed. If we want to continue to monitor the Double Box Site, there is flexibility because of its size and the COE's ability to monitor it. As the site becomes smaller, monitoring becomes less.

**Eddie Beasley** - replied that it is a goal to minimize the foot print. The Crabbers know that if a site is covered, it is out of production. The foot print is too large.

**Facilitator** - sought clarification regarding whether Eddie was referring to the foot print of the site or the foot print from disposal. Eddie confirmed that she was referring to the foot print of the site itself.

**Eddie Beasley** - said that the foot print of the site should be the minimum size needed. She outlined that she believes that this size for the MCR is 3 sq. n. mi. In reaching this conclusion she used the ODMDS manual and also used the example of a New York Harbor managed site to support her conclusion.

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**Facilitator** - noted that she understands that Crabbers care about the resource. The Facilitator asked whether it was the physical foot print of disposal that Edie really cared about as a means to protect the resource.

**Edie Beasley** - replied that she considers the size of foot print is defined by the size of the designated box and the EIS will use the parameters for the box; therefore, the appropriate focus is the size of the designated disposal site.

**Arlene Merems** - asked about the way the COE/EPA sized the box. She asked if the COE/EPA used the size of the mound as a basis for sizing the box. She also asked if the COE/EPA drew the size of the box on the basis of assumptions that the maximum amount of material on a yearly basis will go into the box. **John Malek** confirmed this. Arlene noted that from Edie's perspective that the box is completely written off. **Eric Braun** said that the amount of material was based on a mathematical computation assuming that all 225 mcg were taken to that site and **John Malek** added that this represented the inner box of the double box.

**Edie Beasley** - stated that the box was actually 7.03 mi. sq. She asked why the COE/EPA used a 3,000' buffer for the Double Box Site when at Site B the COE/EPA was currently using a 1,000' buffer. Edie asked whether a 3,000' buffer had been used anywhere else.

**John Malek** - responded that it depended on the site.

**Facilitator** - asked Edie if she had an idea for a proposed site that she would like to display on the projector.

**Edie Beasley** - responded that she had nothing that she was willing to present.

**Facilitator** - then focused the group on a discussion of management objectives for a site that might be designated.

**Eric Braun** - made a brief presentation on what the COE/EPA generally uses as management objectives for sites. The points of presentation are outlined in the slide itself which is reproduced below.

## Site Management Objectives

- Safe and efficient disposal of dredge material while at the same time minimizing the impacts to coastal resources
- controlling wave height
- minimize impacts to marine resources
- safe and efficient use of hopper dredges
- prudent use of available funds
- minimize conflicts with other uses
- practical beneficial use of dredged material

**Steve Gray** - said that he believed that the North Jetty site was a win-win situation and he had no objections to it. In the case of Site E the amount that they have been able to dispose has fluctuated because part of the material moves offsite. Steve explained that he believes that they will have to conduct continued assessment about where the sand moves for safety and navigational reasons. It will be specifically for the recreation boaters that try to cross the Peacock Spit and don't understand what is going on and they are at risk. He worries about the weekend boaters and their safety crossing the Spit.

Steve believes that the projection of placement of 1.5mcy of material in Site E is fair as long as the COE/EPA assess to determine to where the deposited material is moving. As for Site B, it is not going to be used anymore. The Crabbers have lost it and that is why the Crabbers want mitigation. He requested that the COE/EPA place Site 2, the double-box site, in deeper water and even split it into three sections because the COE/EPA does not know how much they are going to use. He expressed concerns about the COE/EPA's use of a 50 year planning time for the disposal period. He also believes that the COE and EPA have designed the Double Box Site too large because Steve believes that not as much material as the COE has estimated will go there.

After a question by Laura, Steve indicated that he believes that the Double Box should be moved closer to Site 8 as a result of safety concerns. Steve also indicated that the seaward part of the COE/EPA's Double Box Site was fine and he stressed the need for monitoring because of navigation concerns.

**Dale Beasley** - said that he believed that they do not need the full area that the COE/EPA has proposed in the double-box site and suggested that the COE/EPA size the box upon the basis of what is actually needed.

**John Malek** - thanked Steve for pointing out why the COE/EPA felt it was important to have several sites and also a deep water site to accommodate safety concerns. John believed that Steve captured well why putting 4 mcy in Site E was bad.

**Thron Riggs** - explained the concerns of the Bar Pilots. He indicated on the projected map the area of the sea buoy and where the ships meet the pilots. If a dredge is dumping in the area where the Bar Pilots board, there is a high probability of a collision with ships coming in from the W and NW and those coming in from the S. He explained that the captains of the incoming vessels are strangers to the area. Often they do not speak English and usually are tired. Therefore, the captains are only thinking about getting to

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the pilot ship. If the captains cannot identify a vessel as a pilot boat or a dredge, then there is a chance they will wrongly assume that the dredge is the pilot boat and a collision will occur. As a result, Thron suggested that the Double Box disposal site be centered on the ranges to best avoid a collision. He also said that there are fewer problems with the towboat lanes because the captains of the towboats are local and they know what is going on in the area.

**Steve Gray** - emphasized that these considerations are why he wanted the disposal site to be deeper out and out of the area of vessel traffic congestion.

**Arlene Merems** - requested that Rod Moritz of the COE be present to explain the calculation of the estimate of material to be disposed in the double-box site.

**Kathy Taylor** - expressed her concern about the size of the Double Box Site and that it was calculated to be a worst case scenario rather than a minimum foot print.

**John Malek** - confirmed that he did not want any disposal material going outside of the boundaries of the site and that is why the EPA creates buffers around sites.

**Kathy Taylor** - explained that she was unclear about how designation of a bigger site would help manage foot print size.

**Laura Hicks** - explained that as you do monitoring steps you may find that in some places you can add more disposal material or go to a higher mound of disposed material. A large box allows the COE to create preference areas so that if they can fit their material higher in a small physical area, they reduce the physical foot print of cumulative disposal.

**Eddie Beasley** - expressed her concern that the COE and EPA were not dealing with real world data. She expressed concerns about the accuracy of the estimate of the material that was used to size the double box. Eddie explained what she believed were discrepancies between the what the estimated amount to be disposed in the Double Box Site and the COE/EPA estimates from prior work. In short, she indicated that COE/EPA may have mis-estimated the amount of material to be disposed in the double box. Eddie also expressed her concern that the Double Box overlaps flat fishing areas.

**Facilitator** - after a brief exchange on buffers and maps, the facilitator focused the group on the difference between real dumping and theoretical dumping. She noted that only real dumping can cause injury to crabs. She also noted how the different parties look at "use" and "designation." She noted that the Crabbers assume designation is equivalent to use while the COE/EPA state that designation may not equal use.

**Eddie Beasley** - described a history of past management problems with Sites A and B and that promises were made and not kept with respect to mounding. Therefore, the Crabbers believe that they have to be cautious. Eddie underscored that she believed that the Crabbers and the EPA/COE were on the same page and that the parties were getting close

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to agreement. After a brief exchange with **Eric Braun**, she asked if the group could consider real world data.

**Steve Gray** - noted that the Crabbers are nervous about dealing with agreements with the COE/EPA because things have not always occurred as stipulated. Therefore, this is why the Crabbers would like real world definitions. He understands the COE must plan for 50 years and he agrees that the North Jetty site works. He said that he would like the COE to provide an estimate of the absolute amount that actually would be placed in the Double Box and not the worst case scenario estimate. He wanted to size the box on the actual amount rather than the worst case amount. He also wanted to move the Double Box Site further out to sea or into the tow lanes. Steve again stated his concerns about siting to accommodate navigation and fishing grounds issues. He also said that Dale has a proposal.

**Eddie Beasley** - asked why there is no buffer around Site E.

**John Malek** - said that Site E is dispersive and the COE/EPA recognize if they put any material there it will move. On the other hand at a deep water site if you say that the sand is supposed to stay within the site and it moves outside, it is bad management.

**Dale Beasley** - described considerations for siting. He said that keeping the site in the tow lane will minimize impacts to fish and will minimize traffic pattern problems. He showed that the corner of the Double Box Site, which is closest to Site B, has conflicts with all of the other uses, such as flat fish habitat, crabbing, and navigation. He wanted to discuss how much room the COE/EPA actually needed for a site because he believes that with a larger site the COE/EPA will be willing to dispose in a larger area. Dale asked to get the Punaise working in order to reduce the amount of disposal material. He also asked to see the juvenile flat fish overlay because it goes in the corner of the double box. This corner is also an area for crabs. Dale suggested tearing the box in two and pulling it back a ways. He said that such a new site would be in the ZSF if you include Site E and the N Jetty site. He again mentioned the major conflicts on the northern side of the Double Box Site. He suggested a small area be used so that you could minimize the impacts. However, he said he was not sure of the exact placement.

There was an exchange among the participants about where such a new site would go. Suggestions were made to move it more into the tow boat lanes.

There was a discussion concerning different management options for the COE/EPA Double Box Site. **Laura Hicks** - suggested thinking of the Double Box in different sections for a management plan; with sections she said they could dictate more definitively where and in what order disposal material is placed. **Arlene Merems** - stated that she would like the COE/EPA to restrict dumping to the outer (seaward) portion of the box so that there would not be disposal in the water less than 200 ft deep until it is absolutely necessary. **Eric Braun** - said that they could look at that if it was within their budget. There was a brief discussion among the participants about various approaches to

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the location of dumping and how it would affect the budget for dumping. The participants discussed whether the increased costs of dumping in seaward sections could be balanced against the lower costs of dumping in expanded Site E and the N. Jetty.

**Thron Riggs** - stated that he could not under-emphasize the estimated danger from ships off shore. He added that the presence of GPS (Global Positioning System) on a ship can reduce the ability of a pilot/crew to think for themselves, causing them to hit a dredge thinking that it is a pilot ship. He also explained that often the pilots of these ships make a straight course for the pilot ship and expect/force others to get out of their way.

**Bob Burkle** - suggested sizing the box down for the amount of material left after Site E and the North Jetty are used, as stated by Steve Gray and Dale Beasley. He also asked if it would be possible to move the area where the pilot ships meet incoming vessels so that it will be out of the ZSF.

**Thron Riggs** - stated that they could not move the loading area because it is currently where the water is calmest and a boarding the safest.

**Dianne Perry** - asked if it was possible to have an intermediate step within the designation process in which a zone within a designated site would be marked for priority use.

**John Malek** - replied that it could be included in the MM Plan, which sets out how a sight will be used, but not within the designation process itself, since designation does not mean use. He further stated that it would be possible to have priorities set out in an MM Plan.

**Dianne Perry** - suggested creating a staging and tiering plan within the MM Plan that would help with trust.

**Dick Sheldon** - stated that he understood that John was saying that even if a site is designated, the COE/EPA is not necessarily going to dump there. Dick stated that all of the calculations and projections were based on today's technology, which will improve and may become less expensive in the future. Therefore, Dick suggested that if the COE/EPA wants a larger site then they should elongate their Double Box and then move it out of the ship/ tug boat lanes. This would only increase the cost of transportation which will be improved. Dick also recollected that the COE/EPA said that the COE could not dispose outside the ZSF and then the COE informed the Working Group that the dredges could later move out of the ZSF. Given this, he asked why the COE could not pull the site out farther.

**Steve Gray** - compared the procedure of going to a North Site in which the dredge would have to turn instead of going straight to sea. Dick stated that a straight line is the most cost-effective and is potentially less damaging to crabs than turning to reach a North site. He suggested dumping the disposal material into the deep ocean canyon or shifting the

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Double Box into the Crabbers proposed Site 8. He retouched on the issue of safety since the MCR pilots are some of the busiest pilots.

**Eric Braun** - explained that there are two separate projects involved here, the MCR O&M and the channel deepening, both of which have different equipment. The ZSF circle is for the maintenance of the MCR which creates 4 to 5 mcy per year and has a set budget. He stated that the COE/EPA was reluctant to go beyond the ZSF because they would not be able to maintain the O&M project at that distance. He also stated that going to the North site is not his first choice and that the COE recognizes that it is not a straight line.

**Dale Beasley** - replied that Eric's projection is with today's technology. Dale explained that there are dredges which can already hold 25 mcy while the dredges that the COE is currently using hold less material.

**Dick Sheldon** - stated that the COE was talking with "two mouths" because they are talking about the future and technology but they are computing with yesterday's technology.

◆  
**Lunch**  
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**Facilitator** - reconvened the meeting after lunch. She noted that during lunch various groups had talked and there were two new proposals displayed on the projector.

**Laura Hicks** - displayed Dale's pink proposal on the projector which she explained was a diamond for talking purposes.

**Facilitator** - elaborated that the group needed clarification on a couple of topics. The first topic dealt with the "chicken and egg" question about site designation and use. Secondly, there was the discussion of the theoretical and actual foot print for a disposal site. She explained that there was the option of a box within a box; if the Working Group could create a level of comfort about the carry-through of a management plan. She asked John Malek to explain what could be included in the designation document about a management plan.

**John Malek** - explained that in order to designate a site you had to include an MM Plan that elaborated on how the site would be used. He gave an example of cutting the box into 8 pieces which are set in a priority order of usage. The designation document itself will say that the site use is specified in the MM Plan which would set these boxes in a priority order. Therefore, the areas within the site are prioritized and this prioritization does not have to occur before designation. It can be worked out later.

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**Arlene Merems** - asked if the MM Plan would be as binding as the designation document.

**John Malek** - said that it would be in the terms which he had described.

**Dianne Perry** - stated that with these conceptual distinctions, there might be a way to “designate” a box within a box and have an additional smaller box subject to management conditions. In the management plan, the COE/EPA could manage a smaller site but have the capacity for a larger one.

**Christine Valentine** - asked what type of guarantee would exist to ensure that the small box had top priority. She stated the need for a system of checks and balances.

**Eddie Beasley** - asked to direct the focus of the discussion to a decision on the capacity of a site. She asked for the Double Box Site to be compared against the overlays and the conflict matrix as was done for previously proposed sites.

**Facilitator** - stated that she believed this double box proposal to be at the tail end of the process in which the conflict matrixes and overlays were considered.

**Eddie Beasley** - asked for all the composite overlays to be displayed. **Laura Hicks** began to display the different overlays. **Eddie Beasley** expressed her belief that the flat fish overlay was incorrect because it only displayed two darkened circles instead of three. After comparison and consulting with previous overlays, it was determined that the overlays accurately reproduced what the Working Group created.

**Arlene Merems** - expressed her belief that the overlays are subjective because the Working Group doesn't know the true extent of the regions and their boundaries, therefore, the boundaries should not be considered rigid.

**Laura Hicks** - continued to display the other conflict overlays. During this discussion, **Eddie Beasley** - noted that the Double Box overlapped some of the flat fish area and she asked John if he noted this conflict of flat fish and crabs with the COE/EPA's proposed double box.

**John Malek** - stated that he agreed that the Double Box was not entirely clean and that some conflicts were present.

**Eddie Beasley** - asked John to adjust the Double Box out of the conflict areas.

**John Malek** - replied that he didn't say he would be able to do that.

**Eddie Beasley** - stated that Site 7 had seven actual conflict areas and four potential conflict areas and that Site 5 had seven actual areas and eight potential conflict areas. However, Site 8 had no predominate conflicts and only four potential conflicts.

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**John Malek** - acknowledged that these sites had conflicts and that this was factored into the decision.

**Eddie Beasley** - asked how it was factored in. She further asked for it to be noted that Site 7 and 5 had conflicts while Site 8 had none.

**Arlene Merems and Christine Valentine** - said that they did not need to see any more of the conflict data.

**Steve Gray** - stated that he agrees that 225 mcy is not needed, but John says that we have to calculate for 225 mcy. Steve suggested determining the actual disposal amount which would be placed in a deep water site. He then asked how do we get the site into deeper water.

**Facilitator** - stated that maybe the Working Group should discuss real numbers for disposal amounts as Eddie requested which John could then address. At this point Rod Moritz arrived to provide information about the modeling and calculations for site capacity.

**Rod Moritz** - introduced himself to the group and stated that he helped in the development of the physical appendix for the OMDS report.

**Arlene Merems** - asked Rod to explain how sites were sized in terms of accumulation of disposal material and whether or not this was calculated by averaging over the whole area of a site or just its nearshore component. She also asked for background information including the error bars on their calculations.

**Rod Moritz** - replied that for the site the COE looked at the average depth of it.

**Arlene Merems** - asked Rod if that meant, for the double box, it would be a depth of 275 feet.

**Rod Moritz** - replied that Arlene was correct and this was determined by averaging the closest and farthest inland depths. Then the COE determined the safest maximum height which would not effect wave and added the geometric shape of this mound in order to determine the volume of material which can be disposed into the Double Box Site. After being asked by **Arlene Merems**, Rod explained that the wave height is an indirect function of incident waves effected by mound height. He stated that the higher the mound was the more effect it would have on waves. The COE chose a threshold by calculating the height which would cause the waves to increase by more than 10% of their current conditions.

**Thron Riggs** - asked if Rod was talking about the size of the waves.

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**Rod Moritz** - replied that it was the period of the waves which was important and not so much the wave height. He used linear wave theory to make his projections and said that potential for amplification was determined by the wave period [the time between wave peaks].

**Facilitator** - confirmed with Rod that it was related to wave height that the time between wave peaks.

**Kathy Taylor** - asked how the buffer area which allows material to slop out of the disposal site was reconciled with the size of the calculated disposal area.

**John Malek** - replied that there was no connection between the calculated site area and the buffer size. John explained that Rod calculated the box size and he asked for a buffer because the disposal material does not fall in a straight line. He stated that he wanted assurance that the material would not go out of the buffer area.

**Rod Moritz** - stated that the COE/EPA's main concern was whether an available site would become unavailable.

**Facilitator** - asked Rod what the likely amount of material going into a deep water site would be if Expanded Site E and the North Jetty Site were used to their capacity.

**Rod Moritz** - replied that he was unsure of the amount which the North Jetty and Expanded Site E were assumed to get.

**Eric Braun** - stated that the COE/EPA was assuming that 2 mcy would go into the North Jetty and Expanded Site E, but that these numbers could change especially if Expanded Site E get cut back and more has to go offshore.

**John Malek** - stated that if the average is 4 mcy, then 2 mcy would go offshore.

**Rod Moritz** - stated that he would have to sit down and put a pen to paper in order to calculate it out.

**Laura Hicks** - said that the COE originally projected 4.5 mcy per year and to size it now it would be 2.5 mcy per year.

**Rod Moritz** - responded that given those numbers, half of the original Double Box sounded good.

**Arlene Merems** - expressed her concerns that in different sections of the DEIS different amounts of dredge material have been stated as accurate.

**Eric Braun** - replied that the estimate is 4 to 5 mcy from both the O&M as well as the deepening project, but this can change on a yearly basis.

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**Arlene Merems** - stated that for the management of a site these differences add up. If they want to put material in a certain site, then the Working Group needs to know how much material.

**Facilitator** - engaged Arlene in a discussion about the permanence of policies in Ecology – do they change over time or they static for long periods of time.

**Arlene Merems** - replied that even if there will be change over time, the Working Group still needs to get a handle on the basic amount of material which is coming out of the MCR each year.

**Kathy Taylor** - stated that Adeline's request was not unreasonable and that the Working Group has to deal with 50 years since the COE has to deal with 50 years.

**Laura Hicks** - stated that the numbers in the FEIS for deepening will be different due to changes that she explained and that the Group will see more numbers later. She wanted the Working Group to expect changes and that there was a basis for them.

**Arlene Merems** - stated that the COE/EPA is sizing the Double Box for 225 mcy not for another number.

**Eric Braun** - explained that one year they may have 1 mcy, while another year they may have 9 mcy for the O&M project. The COE/EPA has to work with averages because there are things which are beyond their control. Therefore, you will see discrepancies in their information.

**Laura Hicks** - mentioned the possibility of having a different box for the channel deepening material.

**Facilitator** - asked if a box within a box would create comfort among the group. She suggested creating a hierarchy of boxes to which more material can be placed if it is needed. This would prevent the designation of site size and dealing with projection to no longer be slippery because there will be a set procedure to follow. She stated that a box for 2.5 mcy is good, but what if more material is dredged in one year?

**Steve Gray** - stated that there had been a lot of talk about erosion and asked if there was any real indication of less erosion as is often reported in the news paper.

**Eric Braun** - replied that the COE doesn't say it in the papers; others have said and reported it.

**Steve Gray** - stated that John is asking for 50 years and that the proposed site of the Crabbers can account for 1.5 to 2 mcy per year. He said that if the COE/EPA is going to have to size the box based on management over 50 years, and he can understand where

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the COE is coming from on this, then it is fair to the Crabbers for the COE/EPA to move down the Double Box Site.

**John Malek** - states that there are economic concerns. There was a brief discussion about the different economic implications of traveling to different sites and why moving material to one site may cost more than moving it to a different site. There was a discussion regarding how the budget could be maintained by “balancing” disposal costs using different site. John stated that the economics of the project are actually very tight and they have sized the Double Box and estimated the cost assuming that all the material is placed out there.

**Steve Gray** - stated that this discussion comes back to how important this project actually is. He expressed that the project means nothing to the Crabbers. He asked the COE/EPA to reassess the need for it to happen and to generate a low cost program. He stated that the Crabbers will continue to work with it and that he would like mitigation to happen because of Sites A and B.

**John Malek** - stated that he understood.

**Eddie Beasley** - noted that in the Appendix H Volume 1, it is stated that for a site to be nondispersive it should be in water deeper than 240 feet.

**John Malek** - stated that the Double Box straddled the 250 ft contour.

**Eddie Beasley** - disagreed with John and stated that on the hard copy only the buffer zone goes to that depth. She summed up her point as being that if they need a nondispersive site then the COE/EPA would have to move it down into deeper water.

**Laura Hicks** - stated that if they use all of the MCR budget for the O&M then other MCR side projects would be in jeopardy. She asked Shari Hildreth of Sen. Slade Gorton’s office if there would be the potential for additional funding.

**Shari Hildreth** - replied that right now in Congress there is some leeway in the construction budget, but that she could not say the same thing in five years because the Congressional composition may be different. She stated that perhaps there is some leeway to get more dollars for a the construction project for a deeper site, but she had no way of saying for the O&M.

**Eddie Beasley** - again asked about the depth of the site to be nondispersive.

**Rod Moritz** - replied that this depth which Eddie was quoting (240 ft) was used to try to describe a zone. Waves do not move sand in deep water. Inshore of 240 ft, there will be more and more movement of sand projected. Movement of material will not be substantial until a depth shallower than 100 ft of water.

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**Edie Beasley** - stated that the comment is made for a nondispersive site to be under 240 ft.

**John Malek** - replied that the passage which Edie was reading does not deal with the site management.

**Arlene Merems** - stated that in 200 ft of water with a 40 ft mound height for 100 mcy the size of a site should be 3.6 mi. sq.. She asked how that calculation went from 6.5 mi. sq. with an average of 200 ft to 11.6 mi. sq. She explained that these numbers were from Rod Moritz' presentation on Oct. 8.

**Rod Moritz** - stated that all of his calculations have been triple checked and that to determine how those numbers were calculated he would have to look at his notes from that presentation. He stated that he was fully confident in the size of the proposed double box. He explained that the length and area are hard to relate to one another, especially with decimals. The relationship between the disposal volume in a site and the length of the side of the site is not easy to guess; the volume is calculated very differently from area.

**Arlene Merems** - expressed the need for a clarification of these calculations because everyone is concerned about them. She stated that she was just trying to understand the needed dimensions of the box for the predicted material to be disposed at that site.

**Facilitator** - stated that the Working Group may have to agree to disagree on certain issues and to agree on other issues. The COE/EPA wants a big box with some subsets. Other members of the group are concerned with minimizing the foot print. You can set the size of the foot print through management.

**Edie Beasley** - stated that because 1 mcy covers 1 mi. sq. 1 ft. deep then 2 mi. sq. with 2 mcy will cover 1 ft deep? She further mentioned dispersal and compaction. She asked for the use of real world data and for the COE to consider the use of the Punaise in their projection of site size.

**Rod Moritz** - replied that because this site is in deep water there will be no dispersal and there might be some compaction. Rod also pointed out that in calculating depth he does not include the portion of the material, which is very small, that will fall outside the inner box.

**Facilitator** - suggested using the area where Site 8 and the Double Box overlap as a starting point.

**Edie Beasley** - stated that Thron had already explained safety conflicts and that the Crabbers were willing to move over to the ranges. The Double Box needs to be in the 250 ft contour along the center of the site.

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The site was moved on the overlays to get a better idea of where this would place the double box.

**Thron Riggs** - stated that with the Double Box centered right on the ranges he is willing to compromise with the Crabbers. He stated that boats come in on either side of the sea buoy.

**Arlene Merems** - stated that the Working Group would have to consider this map of the various ground types for potential habitat conflicts. The map which she was discussing had not been seen by the group. It displayed habitat ground types. She stated that Steve Barry had drawn new ground sites and that the group has to keep in mind the different bottom characteristics.

**Laura Hicks** - stated that the downsizing of a foot print will constrain the COE/EPA's ability to do adaptive management.

**Facilitator** - summed up the situation that the pilots like the new site, but ODFW has problems with it because of the new bottom type map. The COE/EPA have mentioned limitations for management and monitoring which address agency and Crabber concerns that could be placed in the designation document. She asked if there were any other concerns.

**Thron Riggs** - stated that he was only concerned with safety.

**Laura Hicks** - stated that the COE/EPA has compromised down from 81 mi. sq. to 16 mi. sq. and that they would like to have some of the site within the ZSF.

**Eddie Beasley** - noted that the Pink Site which was added during lunch was in the ZSF. She added that the ZSF was an average haul distance and therefore the site does not actually have to be within it.

**Dale Beasley** - mentioned averaging out of the disposal amounts with the use of Expanded Site E.

**Eddie Beasley** - stated that the COE has economic concerns and so do the Crabbers.

**Thron Riggs** - stated that he doesn't want the site inside of the sea buoy, he wants it on the seaboard side. He also said that the Bar Pilots will live with whatever the COE/EPA does, even if it is further into the approach zone.

**Facilitator** - stated the option of creating a management plan for the proposed site.

**Diane Perry** - asked about having it a boot shape.

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**Facilitator** - stated that these were just some options and asked with what the Working Group could agree to and what they can live with.

**Edie Beasley** - asked then if the conflict matrix was just going to be thrown out completely, even though it addressed the conflicts.

**Laura Hicks** - replied that through management the conflicts can be avoided.

**Edie Beasley** - stated that management and monitoring is just a way to say that the COE/EPA wants a bigger site.

**John Malek** - replied that management and monitoring are in the regulations and come from work done in the Puget Sound area. He noted that the need for an MM Plan was his contribution to EPA. He stated that Site A and B were before his time with EPA and that they will not happen again. Management and monitoring are a part of conflict resolution. Now the federal government and EPA ensure better management and monitoring.

**Edie Beasley** - noted that it would be helpful to minimize the size of the foot print of a site and find out the limitation on wave height.

**Facilitator** - restated the concern as EPA having a MM Plan for a bigger site and asked the Crabbers if they were willing to consider a large site with a smaller foot print under a MM Plan.

**Edie Beasley** - replied that the Crabbers were not there with this idea.

**Facilitator** - stated that she would be happy to see if the EPA/COE would be willing to have a smaller foot print if it can be addressed in terms of management and real dumping and impacts.

**Steve Gray** - stated that the Working Group was in the same place that they were 15 minutes ago. He said that they have the same concern of real dumping and that where the yellow Double Box meets the proposed pink box is where real dumping occurs. He asked for the COE/EPA to give the Crabbers real assurances if real dumping is or is not going to happen.

**Facilitator** - noted that the groups were looking at things differently. From the COE/EPA perspective designation was not equivalent to real dumping. Whereas from the Crabbers' perspective, designation was equivalent to real dumping. The groups had two very different views of the world. The facilitator suggested that the groups break up and think about what priorities they would have for monitoring and sites for designation. Then the Working Group can reconvene and proceed from there.

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**Small Group Caucusing**  
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**Facilitator** - stated that during the caucusing there were a number of discussions and an option, in which the Crabbers played a major role, was created. She summarized that the COE/EPA, and the Crabbers agreed to the option, as well as Rick from WDOE and CREST. She asked Rick if he had the authority to speak for the State of Washington since the WDFW was no longer in attendance.

**Rick Vining** - replied that he had the authority to speak for the State of Washington.

**Facilitator** - stated that the agreed upon Red Box was larger than the Crabber's proposal and smaller than the COE's double box. The Red box would have a buffer. The Crabbers agreed to work with a task force and, from the Crabbers' perspective, they would have no specific limitations on the task force or maintenance of the Red Box. She described a caucus discussion in which the Crabbers and the EPA/COE said they were comfortable with a management proposal for Site E in which the outer 5,000 ft disposal would stop after August 15 every year. She asked if this was okay with the EPA/COE and the Crabbers.

**Steve Gray** - stated that an appraisal was needed. \_

**Dale Beasley** - asked for bathymetric surveys.

**Steve Gray** - said that with the bathymetric surveys the COE may be able to do more disposal at one site.

**Facilitator** - asked if the Crabbers will work with the Task Force.

**Edie Beasley** - asked for the parameters on expanded Site E regarding its management.

**Facilitator** - asked whether she was referring to the outer 5,000' of the site.

**John Malek** - said that the COE/EPA will limit the use of the outer 5,000' and will restrict use in this area after August 15.

**Steve Gray** - suggested that the COE/EPA get everything they can into expanded Site E before August 15.

**Edie Beasley** - asked if there would be bathymetric surveys 2 miles north of the site and up to 50 fathoms.

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**John Malek** - said that a monitoring and management plan will be developed and that he could not say specifically what the bathymetric surveys would entail.

**Eddie Beasley** - stated that she was confused about whether it will be written up.

**John Malek** - stated that the bathymetric surveys will be in the management and monitoring plan which will be shared with the Crabbers. EPA is required to write a management and monitoring plan and there will be public input on the plan.

**Eddie Beasley** - believes that everything in the stipulation summary from the litigation between the Crabbers and the COE/EPA should be maintained and addressed.

**Facilitator** - asked the Crabbers if the Crabbers wanted to stand by the agreement made regarding the Red Box Site. **Facilitator** - responding to reactions from the Crabber group to this question, the Facilitator asked if the Crabbers wanted to have a caucus.

**Dale Beasley** - responded that a caucus was not needed. He stated that without some type of guarantee on 10% wave amplification there could be a problem.

**Facilitator** - asked the Crabbers' from their perspective did they need specifics because John Malek/EPA had already agreed to bathymetric surveys.

**Dale Beasley** - replied that he wanted a limitation that disposal would create no more than a 10% wave amplification.

**John Malek** - replied that there will be a top limit of disposed material height and that EPA realizes if disposal generates greater than 10% amplification – that's bad.

**Dale Beasley** - said that is good.

**Eric Braun** - asked do you want us to monitor the spit or the disposal site.

**Steve Gray** - emphasized that the spit was an area of concern.

**Eric Braun** - said that the spit area of concern was 2 miles away from expanded Site E and that area had many factors impacting it.

**John Malek** - if material moves from expanded Site E to someplace else, the EPA/COE will trace it and if it is causing a problem they will change it. There must be a tie between the problem and the site. The EPA/COE will have surveys and modeling to help them determine how to manage the system because we do not want to generate hazardous conditions.

**Facilitator** - asked what Steve Gray heard John Malek say so that she could be sure that she was recording accurately the points on the flip chart.

**Steve Gray** - stated that he heard John saying that the COE/EPA will be responsible for what they dispose of and that they will not create a situation where the wave height is 10% greater than current conditions. He also heard that Eric Braun said that this change might be 2 miles away.

**John Malek** - stated that there is some limit to how far they will look from the disposal site for increases in wave height; however, 2 miles does not sound unreasonable. He further clarified that he needed to speak with the COE experts to better understand what a reasonable distance to look for wave amplification is. The EPA/COE understand that if they cause a problem, they are responsible for alleviating it.

**Steve Gray** - noted that, from what he has been seeing, the sand travels a good distance. He expressed a concern that the COE/EPA look far enough away for wave amplification that could be caused by disposal at the site.

**John Malek** - replied that there has to be a connection between disposal and an area of possible amplification. They will look at the Rod's model runs to help determine what is a reasonable area in which to look for amplification.

**Steve Gray** - responded that if the EPA/COE are responsible for correcting problems, the Crabbers agree on managing the site to ensure that no greater than a 10% wave amplification occurs. He also expressed that he would like to see monitoring twice a year to help determine wave amplification.

**John Malek** - responded that the EPA/COE would have to work out the exact details of a monitoring plan later.

**Dale Beasley** - observed that fall monitoring is important because fishermen have to deal with wave amplification in December.

**John Malek** - said he would have to consult Rod to determine a better way to predict wave amplification. John indicated that he could not yet agree to the exact details of monitoring.

**Facilitator** - captured the agreements on flip charts. She confirmed with the Crabbers and the COE/EPA that they were comfortable with the language placed on the flip charts.

**John Malek** - referring to language placed on the flip chart including the word "baseline", John asked what was meant by "baseline."

**Rod Moritz** - said that there was "baseline" at expanded Site E and that the COE will determine another baseline before they put material in Site E, but beyond Site E they cannot use the 1997 information.

FINAL

**John Malek** - suggested the word “current conditions” be used on the chart. John said that he would work on what baseline/current conditions means with experts in the COE and, if later because of because of science changes are warranted, the EPA/COE will talk to the Crabbers before changing the definition of what is “current conditions.”

**Steve Gray** - agreed to what the Facilitator had recorded on the flip charts as a summary of the agreements made.

**Facilitator** - recorded that monitoring will happen. After a specific request by John Malek, the facilitator recorded that the EPA/COE will give careful consideration to fall monitoring. Inclusion of fall monitoring was of concern to the Crabbers.

**John Malek** - agreed to the information on the flip chart as properly recorded.

**Rick Vining** - asked about the timing limitation for disposal at Site E and if the stopping of disposal in the outer 5,000’ at expanded Site E would be included in the management and monitoring plan.

**John Malek** - responded that it would be recorded somewhere. He said that he was not sure whether this condition to which the EPA/COE had agreed would be included in the management and monitoring plan or in some other document.

**Rick Vining** - requested that it be included in the management and monitoring plan.

**John Malek** - agreed that he wanted in the management and monitoring plan but the plan has to be coordinated and reviewed first.

**Kathy Taylor** - said that when she had agreed to the proposed Red Box Site, she had agreed with the idea that CREST would have input to the MM Plan. She wanted to make sure that CREST still had input.

**John Malek** - responded yes.

**Kathy Taylor** - replied good.

**Steve Gray** - requested one more bullet. He asked for clarification about how the dredge vessel proceeds to the disposal sites.

**John Malek** - responding to Steve Gray’s concern about the route that the dredges take, requested that the note-taker record that EPA would work to ensure that the COE/EPA specify the route that the dredges will take through contract, permit, or some other approach.

**Eric Braun** - asked whether EPA’s commitment pertained to dredges going to expanded Site E.

FINAL

**John Malek** - said yes, wherever the dredges are going.

**Steve Gray** - agreed that he would like to see that wherever the dredges are going; he would like to see the dredges follow the channel.

**John Malek** - observed that the COE/EPA would include the consideration of the routes that the dredges take in the MM Plan.

**Facilitator** - sought clarification from the EPA/COE that the COE/EPA would work with a Task Force on management of the proposed Red Box Site.

**John Malek** - said that the EPA/COE would certainly work with some group.

**Arlene Merems** - asked the EPA if EPA did not want to call it a Task Force and why.

**John Malek** - responded that there was a lot going on internally with the EPA. Right now, EPA is trying to develop a Regional Dredge Team which may be the same thing as this group or it could be that there will be a project specific task force. He doesn't know if he has the power to create a task force, but he can participate in one. He does want a body for stakeholder input.

**Steve Gray** - asked John whether the group is there, but just with a different name.

**John Malek** - indicated that the group would be there and elaborated that his lawyer has informed him that he cannot use the name "Task Force."

**Arlene Merems** - asked him if he had recently talked with his lawyer and then asked whether the group would be able to offer suggestions to the COE.

**John Malek** - clarified that the EPA is the site manager and the COE is a type of co-manager. The EPA has the statutory responsibility for site management and decisions regarding management have to be made by the EPA. The EPA is responsive, however, to public advisories. The EPA will give weight to the suggestions of the agencies and task force. The name "Task Force" has a specific meaning under laws that I don't understand.

**Facilitator** - confirmed with John that EPA was still agreeing to work with a group that was the functional equivalent of the body that the work group participants had agreed to earlier in the meeting. **John Malek** - confirmed, yes, that EPA was willing to work with such a body. **Facilitator** - also confirmed with John that were concerns among some in EPA regarding the "Task Force" as it might connote a group that was subject to the Federal Advisory Committee Act (FACA). **John Malek** - said, yes, there were such concerns and that he is happy to have a body as long as it is not called a "Task Force."

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**Facilitator** - asked Arlene Merems if she was comfortable with his response.

**Arlene Merems** - responded, yes, as long as John was talking about the functional equivalent of the body over which there had been a consensus earlier in the meeting.

**John Malek** - confirmed that she was correct.

**Facilitator** - asked if individuals would like to make any other comments related to the management of the proposed Red Site.

**Dale Beasley** - said that he wanted the foot print to be kept small.

**Facilitator** - asked for clarification on the word "foot print." Did Dale mean real physical foot print from disposal operations?

**Rod Moritz** - interjected a question, asking if Dale was talking about a year or over time.

**John Malek** - said that management of the size of the physical foot print will be discussed.

**Steve Gray** - stated that the EPA/COE should keep the main physical foot print as small as possible.

**Kathi Larson** - asked about the size of the red box that constituted the area in which dumping can occur in the proposed site.

**Arlene Merems** - interjected that the Facilitator had not asked Oregon what they thought about the proposed Red Box Site. She also expressed her opinion about the size of the proposed red box being larger than the COE/EPA compromise Double Box Site proposed before this meeting.

**Facilitator** - took the original of the proposed Red Box drawn by Dale Beasley and showed it to Arlene. She pointed out on the map annotated by Dale that the proposed red box was smaller the COE/EPA's compromise double box proposal and larger than the Crabber's compromise site brought to the meeting.

**Arlene Merems** - agreed. She noted that upon comparison of her drawing and the original she found that in her drawing she had not accurately reproduced what Dale had drawn as the proposed red box site.

**Arlene Merems** - stated that there may be some resource uses and the proposed Red Box Site was a fairly good compromise. She said that the depth range of the proposed Red Box Site was good. She also noted that with the new information she had on bottom types, that looking at the map, it was hard to tell, but it appeared that the proposed Red Box Site could overlap with the mud. She requested that if surveys along the north side

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of the proposed Red Box Site show mud that the box be shifted, but maybe not that much. The way that it is sitting now it is on mud which is productive and diverse. She further suggested that maybe the group could take a wedge out of the proposed Red Box Site.

**Facilitator** - asked whether this concern could be addressed in the MM Plan.

**Arlene Merems** - responded, yes, it could be added as a management issue but she was nervous about it.

**Facilitator** - asked the Crabbers for clarification about whether or not having the proposed Red Box Site fixed was essential to them.

**Facilitator** - noted that Ben (NMFS) and Rick (Ecology and Washington), was ok with the proposed Red Box Site and asked Arlene Merems (ODFW) whether or not she could agree to the proposed Red Box Site.

**Arlene Merems** - said that it was mostly OK and noted that she wanted unique habitat concerns addressed in management.

**Kathi Larson** - inquired how Arlene had come up with the new bottom-type map that she had brought to the meeting.

**Arlene Merems** - replied that it was a NOAA map based on an '86 survey for areas off of Washington and it included bottom-type and fill. She explained that they were able to trace the map and get a copy. She asked the COE and EPA to map this information and place it on overlays. She requested that the COE/EPA use the map until there is more survey information.

**Kathi Larson** - pointed out that because the survey was conducted in 1986 that you don't actually know if the map represents the current bottom types.

**Arlene Merems** - agreed and said that a lot of our data is old.

**Kathi Larson** - observed that the bottom can shift and they would have to have current base line data to draw conclusions about the bottom type.

**Arlene Merems** - agreed.

**Facilitator** - after these exchanges, sought clarification as to Oregon's position on the proposed Red Box Site. She asked if Oregon could agree to the proposed Red Box Site or would they not be able to.

**Christine Valentine** - responded for Oregon and said that she can conceptually agree to the proposed Red Box Site and that Oregon will just see how management works out.

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**Laura Hicks** - said that there would be pre-assessment of the proposed Red Box Site.

**Arlene Merems** - asked if there will be extensive bottom surveys and what happens if there is 50% mud?

**John Malek** - said that in the case of the proposed Red Box Site, if the EPA designates it, the proposed Red Box Site will be used.

**Steve Gray** - explained that he thinks that the proposed Red Box Site is a stable area. He pulls traps all the time out there (he has 1000 traps) and mud does come up with the traps. In the proposed Red Box Site he finds no mud in his traps. He said that he does not want to see the box for the proposed Red Box Site changed because of navigational problems.

**Thron Riggs** - said that he can live with the proposed Red Box Site and that it was much better than the double box compromise site proposed by the EPA/COE.

**Rick Vining** - stated that the purpose of the group was to find the area with the least impact and this was the best that they could come up with. He feels that more surveys would be starting over, but they could have some pre-assessment surveys.

**Arlene Merems** - said the Task Force is to characterize the site in order to see what impact occurs. Therefore, we should collect additional information.

**Kathy Taylor** - said that if they were writing off the proposed Red Box Site, then she is off the ship.

**Rick Vining** - replied that writing off the proposed site was not what they said.

**Arlene Merems** - responded that it sounded like that.

**Steve Gray** - stated that it takes up a lot of space and it makes good sense to shift it if needed.

**Arlene Merems** - said that she just wanted to clarify.

**Facilitator** - asked Oregon if they could live with the proposed Red Box Site “as is” and see management as going hand in hand with designation.

**Christine Valentine** - responded for Oregon and said Oregon can live with it. Oregon can live with what the facilitator had memorialized in the flip charts as the consensus among the parties to the Working Group. However, she made it clear that Oregon wanted to see management be a part of the mix.

◆  
**Confirmation of Consensus Reached**  
◆

**Facilitator** - reconfirmed that a consensus had indeed been reached by all those present, participating in the Working Group. She went around the room and confirmed that the participants were comfortable with the consensus points for expanded Site E and the proposed Red Box Site, summarized on the flip charts.

**WA** – Rick Vining speaking for Washington State and Ecology – yes.

**OR** – Christine Valentine and Arlene Merems – yes, and it was emphasized that management is an important concern to Oregon.

**CREST** – Kathy Taylor -- yes, and management is an important concern to CREST.

**River Bar Pilots** – Thron Riggs – yes, the pilots can live with it.

**Crabbers** – Dale Beasley and Steve Gray – yes, they can live with it.

**USFWS** – Kathi Larson – yes.

**NMFS** – Ben Meyers – provided authority to the facilitator to register approval as he had to leave earlier.

**COE/EPA** – Eric Braun & John Malek -- yes.

**Rick Vining** – clarified that he was speaking of the State of Washington and the Department of Ecology but not WDFW.

**John Malek** - said, now that the proposed sites have been identified, the COE and EPA will discuss the whys and hows of the MM Plan because without it EPA will not move forward.

**Christine Valentine** - asked if the group would hear from the COE/EPA next week about the MM Plan.

**John Malek** - stated that he is hopeful that they will do so.

**Laura Hicks** - said that she hopes that EPA will use general terminology in the EIS and through PED, the COE/EPA will put the nuts and bolts in place for the MM Plan. She invited the participation of everyone involved in the Working Group to participate in the development of the nuts and bolts of the MM Plan through PED. She mentioned that there was funding in PED that could be used in for this purpose.

**Arlene Merems** - agrees with the MM Plan approach and would like some type of agreement as a basis for the group providing input to the COE and the EPA on management and monitoring.

**John Malek** - hopes to get out a preliminary draft MM Plan and they would like to get comments back. He emphasized that it would be somewhat less specific in the first draft, without all the details, and what happens next is up to your responses.

**Steve Gray** - mentioned that earlier in the meeting that he brought up a point and talked to a few of the participants individually, but he would like to bring it up to the group. He also stated that he believed the group had done a good job to get the proposed Red Box Site. He said that the Crabbers were giving up ground and that how to do a mitigation package was a whole other discussion. The numbers that the Crabbers have tried to give the group are for a buy back program. They have 238 crabbing licenses out there and the government recently gave 25% of the crabs to the Indians. The fishing licenses need to come down to 100 which means that someone has to buy 100 licenses. Given the allocation to the Indians, the government should have provided funding to buy back 50 licenses. Not to say you should pay for everything.

**Facilitator** - upon seeing Arlene Merems leaving, interrupted Steve briefly to thank Arlene and the rest of the Working Group for their hard work over the last 2 years. She noted that at times passions had run high, however, the Working Group had reached consensus and they should take credit for a hard job well done. She thanked all.

**Steve Gray** - summarized that the point of what he was saying was that he thinks that you need to consider mitigation.

**John Malek** - commented that there are lots of official reasons why he specifically can't agree to mitigation. The EPA is the pawn of Congress and, if Congress says to do it, EPA will. So talk to the lady in the back of the room [referring to Shari Hildreth, Sen. Gorton's Staffer].

## Attendees of the May 12, 1999 Working Group Meeting

Name:	Organization:	Phone Number:	e-mail:
Beasley, Dale & Edie	CRCFA	(360)642-3942	crabby@aone.com
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Eriksen, Karl	COE	(503)808-4705	
Gray, Steve	CRCFA-Crab Processors	(360)642-2408	
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Valentine, Christine	DLCD	(503)373-0050 x250	
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Windsheimer, Rian	Sen. Smith's Office	(503)326-3386	Rian_Windsheimer@gsmith.senate.gov



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## Welcome Back



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## Today's Agenda

- Opening Remarks
- Discussion of Site Management
- Discussion of Latest Proposed Site
  - 10 minutes on how the COE/EPA developed it
  - Group Discussion
- Where Do We Go From Here



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## Site Management

- Repetitive vs Non-repetitive
- Annual review of what was done prior year and determine what should be done for the current year
- MOU or Taskforce
- Other Ideas



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## Nearshore Site

- Challenges
  - Material will remain part of the littoral zone however, it has not been established how helpful it will be to coastal erosion
  - Potential Impacts to Commercial Fishing Navigation Routes
  - Potential Impacts to Commercial Crab Fishery
  - Resolution with stakeholder groups is not currently in sight
  - Lack of trust among stakeholder groups



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## Ocean Dumping Criteria

- Balance Among and Between Environmental Factors and Economic Values
- COE/EPA believe nearshore disposal to be in compliance with these criteria
- Working Group is not convinced, ie, No Stakeholder Agreement



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## Nearshore Area

- Decide if there is a way to determine if the material would assist in deterring coastal erosion
- Is there a way to accomplish placement nearshore in the future which does not impact ability to maintain the MCR project?
- Discuss means to increase trust between stakeholder groups



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## Options to Revisit Dredged Material Placement in the Nearshore Area

- Clean Water Act
  - Section 404 Permit (Purpose is fill)
- Ocean Dumping Act (Purpose is disposal)
  - Section 102 Designation (Permanent)
  - Section 103 Selection (Temporary)
    - Research Action



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## Ocean Dumping and Clean Water Act

- Who can use sites under these Acts
  - Corps of Engineers
  - States
  - Private Citizens



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## Tradeoffs Between Nearshore and Deep Water

### Pros

#### Nearshore Site

- Retains sand in Littoral System
- Similar Sediment
- Lower benthic productivity
- Benthic community more adapted to moving sand

#### Deep Water Site

- Minimizes conflict with crab fishery
- Reduced Footprint



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## Tradeoffs Between Nearshore and Deep Water

### Cons

#### Nearshore Site

- Potential conflict with crab fishery
- Potential conflict with small boat navigation
- Larger area required to spread material

#### Deep Water Site

- Removes sand permanently from system
- More productive stable benthic community
- Permanently alters substrate (habitat)
- Potential conflict with deep draft navigation



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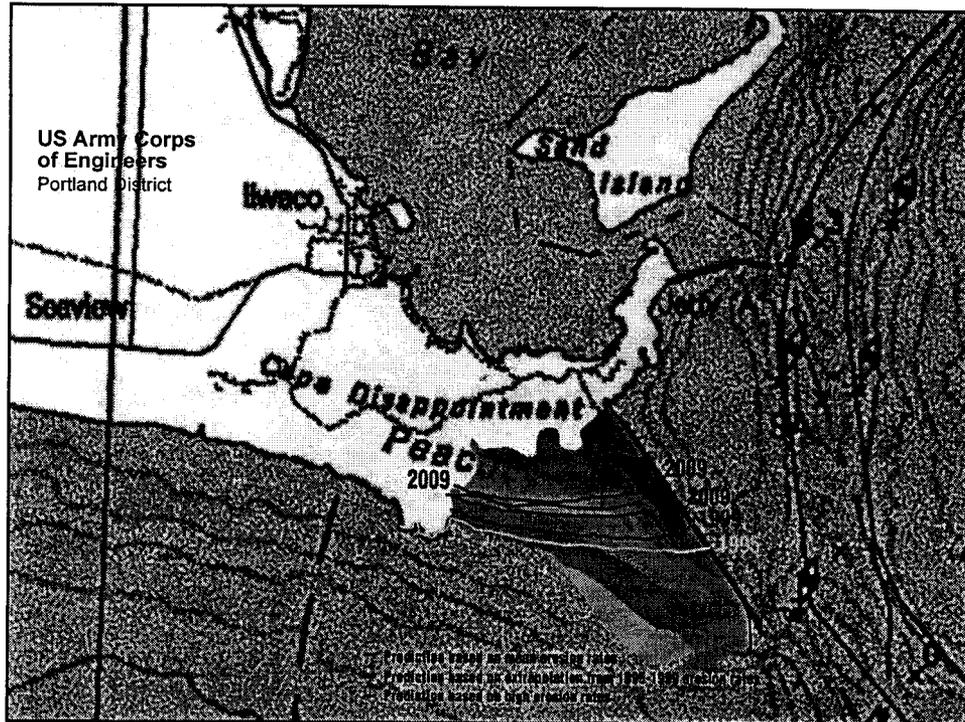
## Latest Proposed Site

- Size
- Travel Time
- Available Data
- Minimize Conflict to the Fisheries



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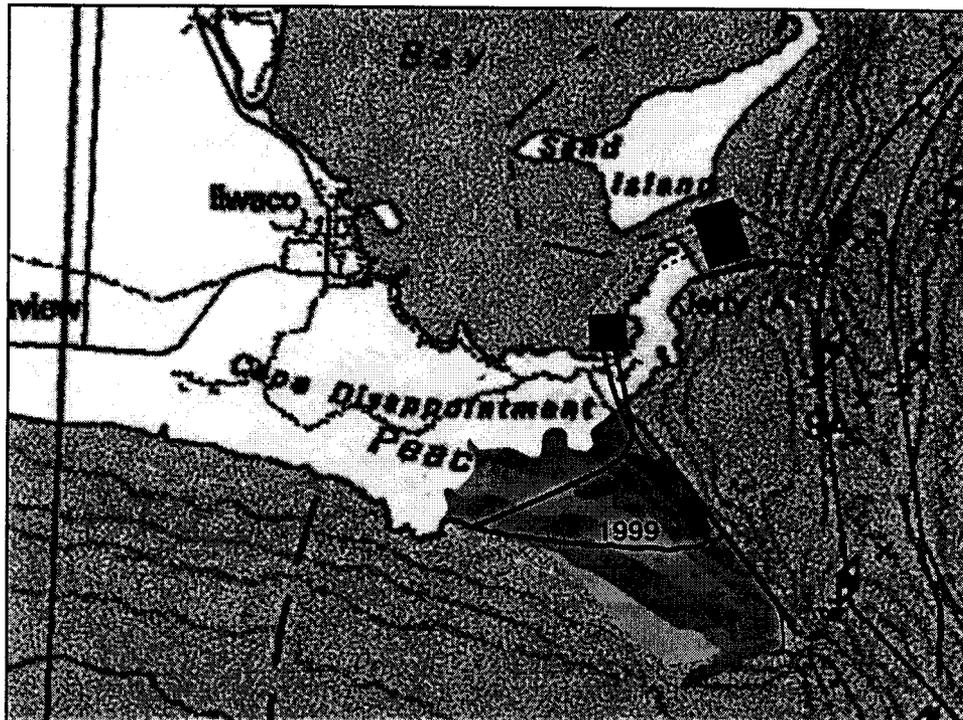
## Benson Beach



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## Benson Beach

- Requires Special Equipment to Place Material
  - Hopper Dredge Pump Ashore
  - Punaise Dredge (fixed in-place dredge)
  - Hopper-Sump-Pipeline from Baker Bay
- Disposal Capability 1/2 to 1 mc/yr
- Disposal Would Interfere With Park Use
- Capacity on Benson Beach Estimated at 8 mc/yr
- Requires Cost-Sharing Partner



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## Hopper Dredge Pump Ashore

- Requires Construction of an Access Channel and Turning Basin in Baker Bay (2 mcy)
- Hopper Dredge Not Currently Configured for Pump Ashore
- Takes Hopper Dredge Out of Production
- Requires 1-1/2 to 3 Hours to Pump Ashore



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## Punaise Dredge (fixed in-place dredge)

- Requires Location Within 6,000 feet of Disposal Site or Added Cost for a Booster
- Experimental Technology Not Used in the US Yet
- Additional Information Required to Determine Suitable Location



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## Hopper-Sump-Pipeline from Baker Bay

- Requires Construction of an Access Channel and Sump in Baker Bay (3.5-6.5 mcy)
- Requires Mobilization of a Pipeline Dredge



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## Preliminary Cost Estimates

	<b>First Costs (One Time)</b>	<b>Mobilization (Annual)</b>	<b>Incremental Cost (cy)</b>
<b>Hopper Pump Ashore Punaise</b>	<b>\$7m plus \$1.6 m for configuration</b>		<b>\$2.60-\$3.90 (no booster)</b>
		<b>\$550k</b>	<b>\$2.50-\$3.50 \$3.20-\$4.40</b>
<b>Hopper- Sump- Pipeline</b>	<b>\$14-22 m for construction</b>	<b>400-500k</b>	<b>\$3.50</b>



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## Objectives for Benson Beach Placement

- Protection of the Park
  - What is threatened?
- Replacement of the Beach
  - What does this look like?
- Feed Littoral System
  - How is success measured?
- Other?



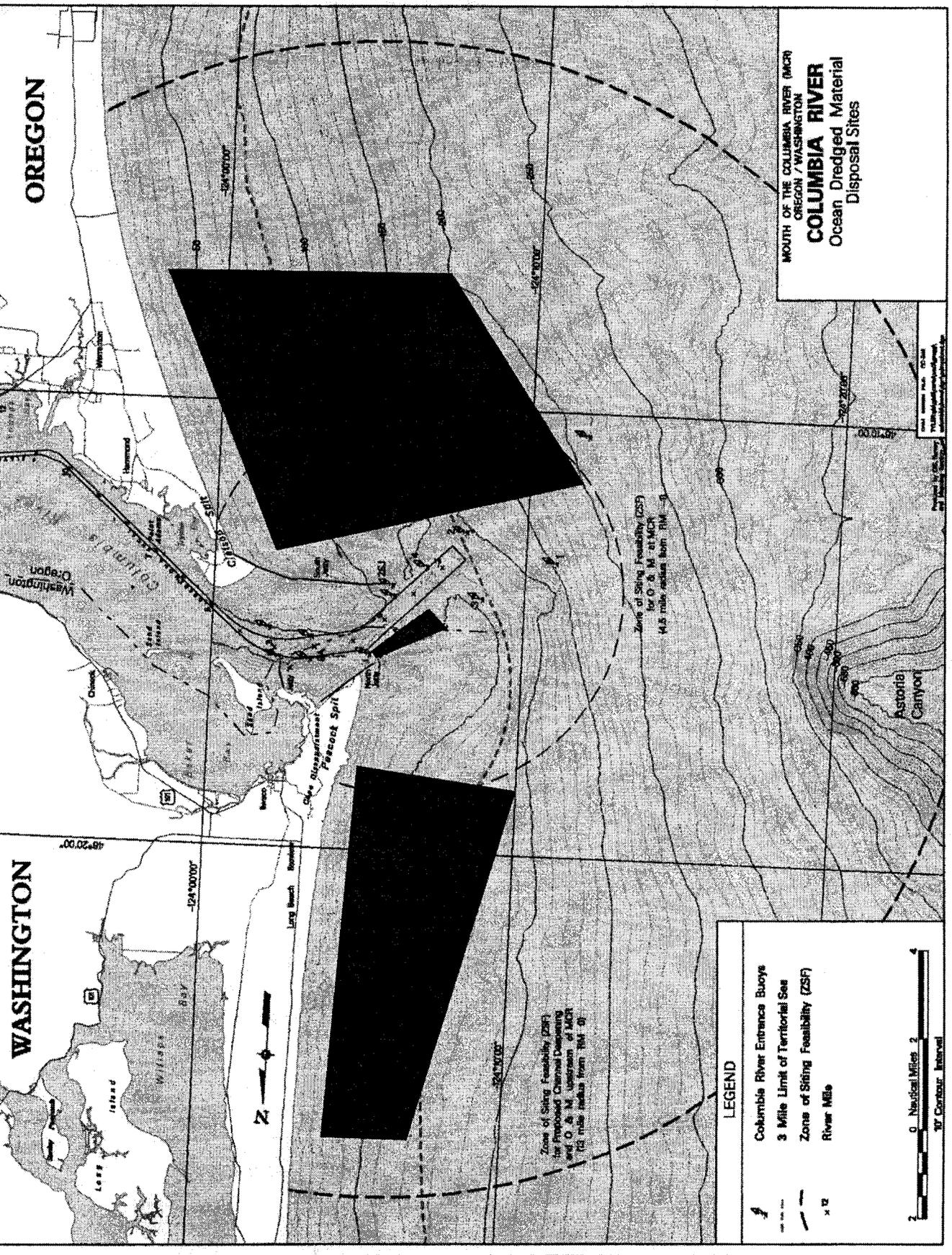
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## Planning Assistance to States

- Goal: Mutually understood goals for work item are agreed upon with the state before the COE begins assistance
- Submission Requirements
  - State Requests COE participation in PAS program
  - Specific scope of work
  - Agreement to cost share 50% of Planning, Limited to \$500,000 per year per state or Tribe

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MOUTH OF THE COLUMBIA RIVER (MCR)  
 OREGON / WASHINGTON  
**COLUMBIA RIVER**  
 Ocean Dredged Material  
 Disposal Sites

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LEGEND

- Columbian River Entrance Buoys
- 3 Mile Limit of Territorial Sea
- Zone of Siting Feasibility (ZSF)
- River Mile



Zone of Siting Feasibility (ZSF)  
 for Proposed Channel Deepening  
 and O. & M. upstream of MCR  
 10 mile radius from RM 0

Zone of Siting Feasibility (ZSF)  
 for O. & M. at MCR  
 4.5 mile radius from RM -3

Scale: 1:50,000  
 Vertical Datum: Mean Sea Level  
 Horizontal Datum: NAD 83  
 Prepared by: US Army  
 Date: 10/19/00

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MOUTH OF THE COLUMBIA RIVER (MCR)  
OREGON / WASHINGTON  
**COLUMBIA RIVER**  
Ocean Dredged Material  
Disposal Sites

LEGEND

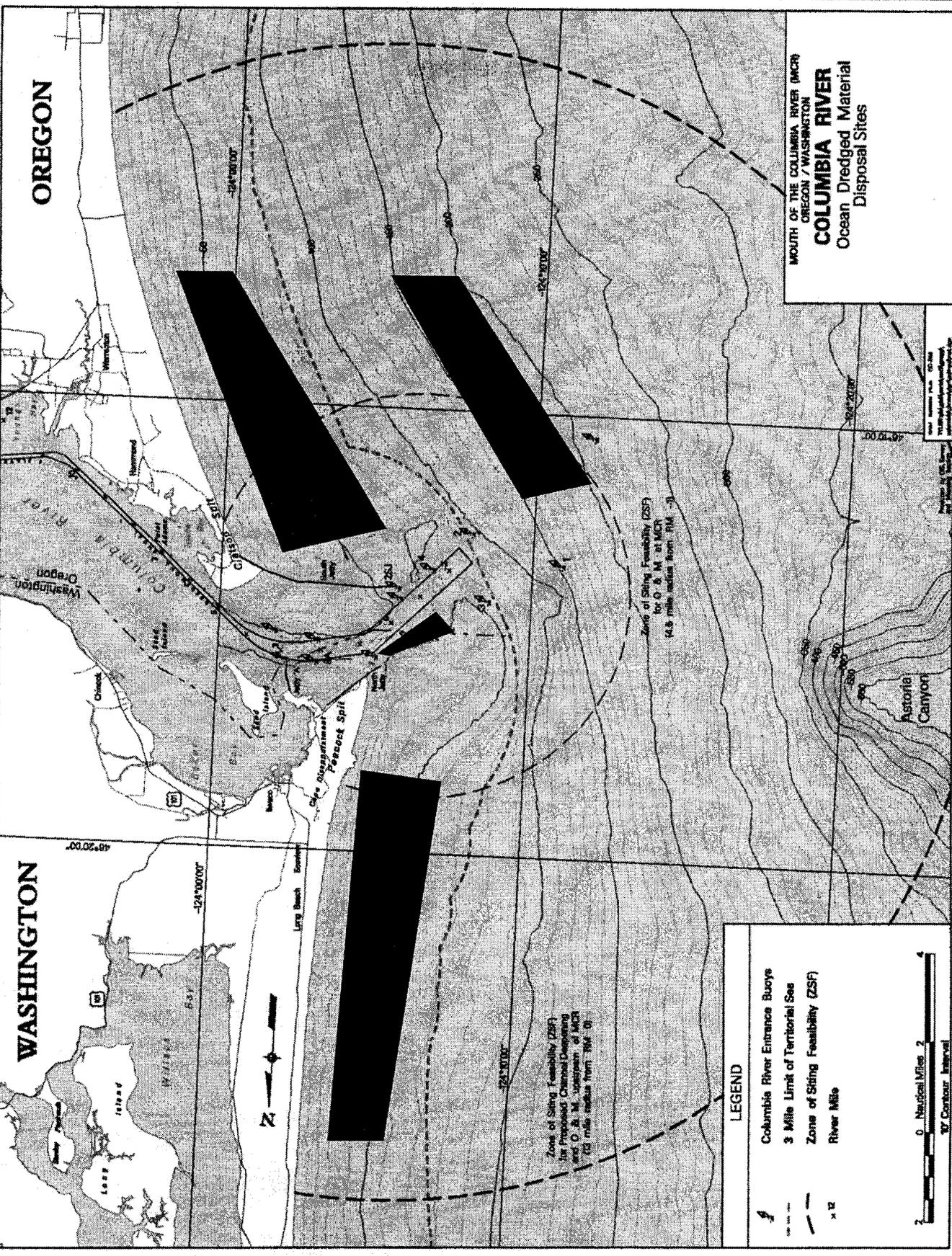
-  Columbia River Entrance Buoys
-  3 Mile Limit of Territorial Sea
-  Zone of Siting Feasibility (ZSF)
-  River Mile



Zone of Siting Feasibility (ZSF)  
for Proposed Channel Deepening  
and O. & M. upstream of MCR  
(3 mile radius from RM 0)

Zone of Siting Feasibility (ZSF)  
for O. & M. at MCR  
(4.3 mile radius from RM -3)

Astoria Canyon



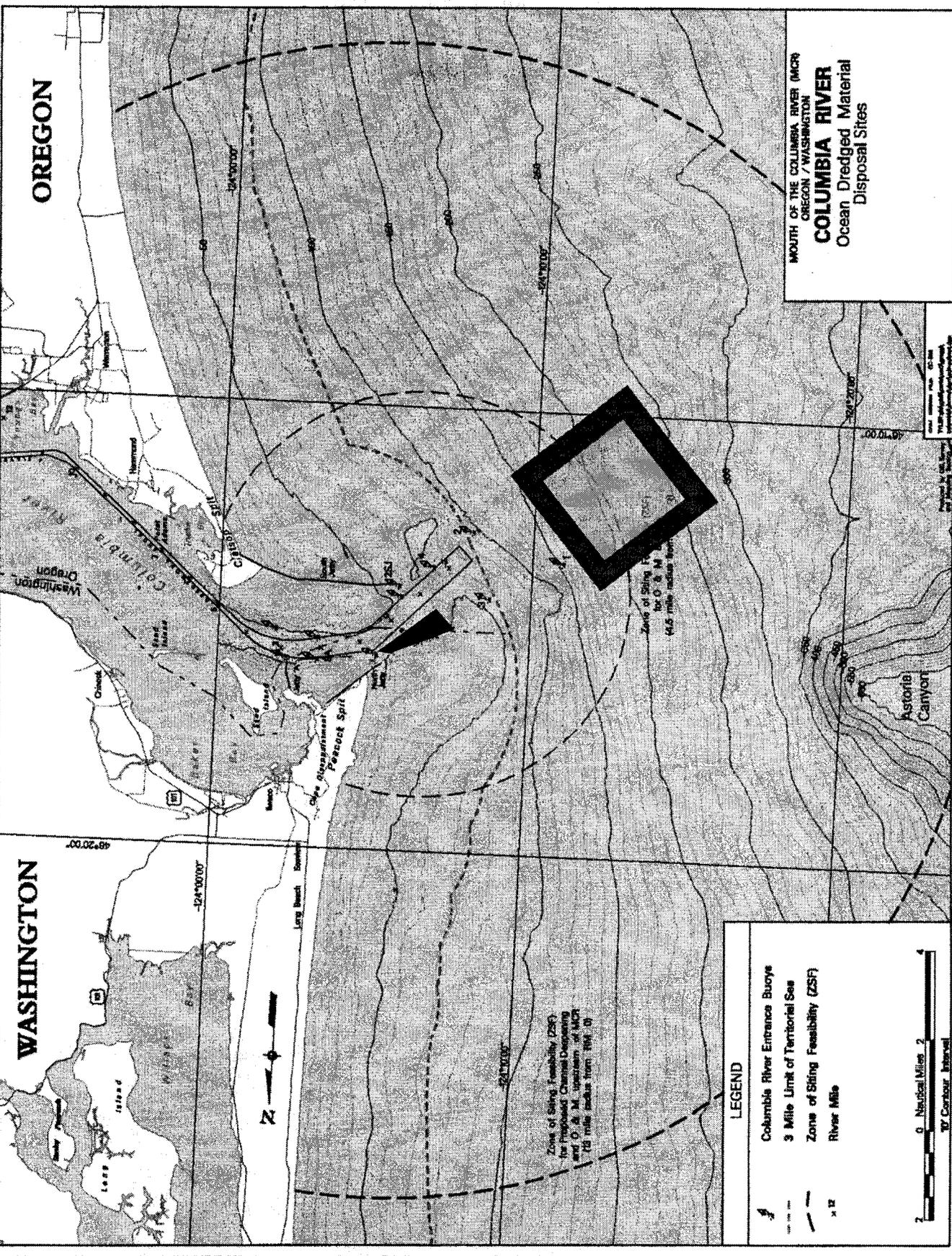
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MOUTH OF THE COLUMBIA RIVER (MCR)  
OREGON / WASHINGTON  
**COLUMBIA RIVER**  
Ocean Dredged Material  
Disposal Sites



LEGEND

- Columbia River Entrance Buoys
- 3 Mile Limit of Territorial Sea
- Zone of Siting Feasibility (ZSF)
- River Mile



Zone of Siting Feasibility (ZSF)  
for Proposed Channel Deepening  
and O. & M. upstream of MCR  
(10 mile radius from 104.0)

Zone of Siting Feasibility  
for O. & M.  
(4.5 mile radius from 103.5)

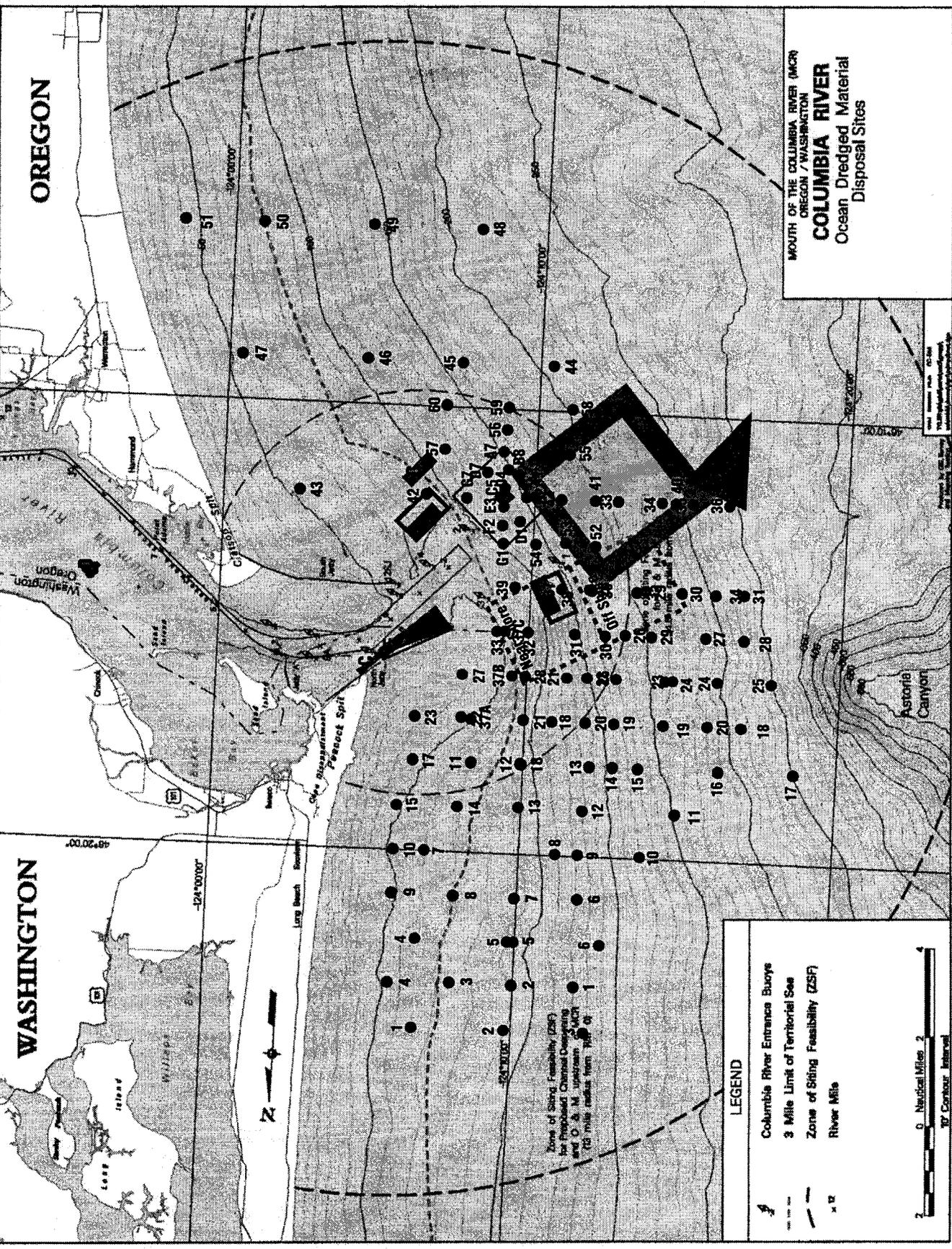
Scale: 1:50,000  
Contour Interval: 10 feet



OREGON

WASHINGTON

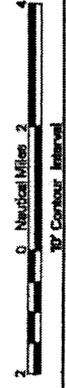
MOUTH OF THE COLUMBIA RIVER (MCR)  
 OREGON / WASHINGTON  
**COLUMBIA RIVER**  
 Ocean Dredged Material  
 Disposal Sites



Zone of String Feasibility (ZSF)  
 for Prebashed Chemical Operating  
 and O & M upstream of MCR  
 (30 mile radius from MCR)

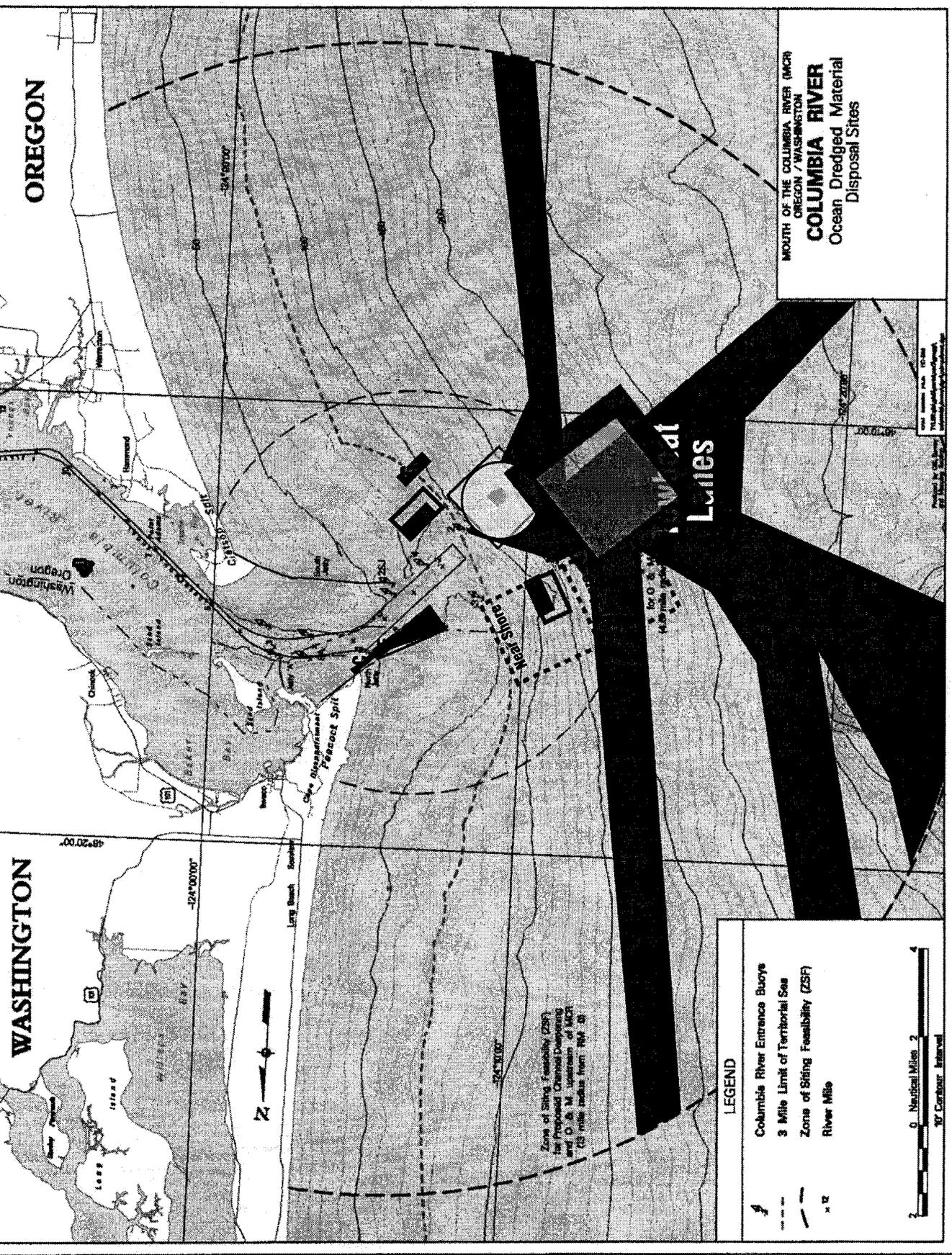
LEGEND

- Columbia River Entrance Buoy
- 3 Mile Limit of Territorial Sea
- Zone of String Feasibility (ZSF)
- River Mile



U.S. ARMY

OREGON



MOUTH OF THE COLUMBIA RIVER (MCR)  
 OREGON / WASHINGTON  
**COLUMBIA RIVER**  
 Ocean Dredged Material  
 Disposal Sites

WASHINGTON

Lewis and Clark River

LEGEND

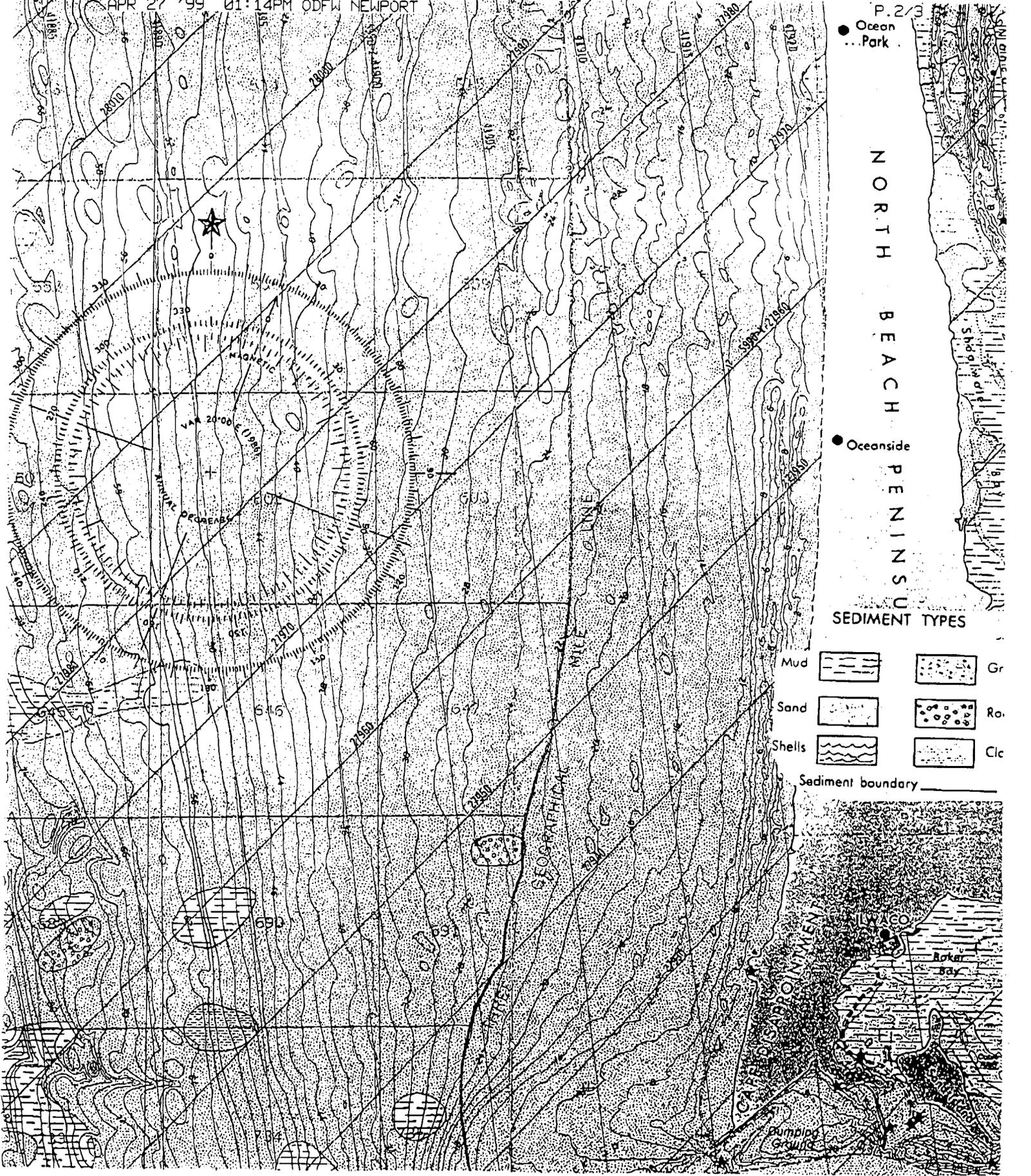
- Columbia River Entrance Buoy
- 3 Mile Limit of Territorial Sea
- Zone of Siting Feasibility (ZSF) River Mile



Zone of Siting Feasibility (ZSF)  
 for Proposed Channel Deepening  
 and O. & M. Upstream of MCTZ  
 (3 mile radius from RM 0)

CORPS OF ENGINEERS

Scale: 1:50,000  
 Vertical Datum: Mean Sea Level  
 Horizontal Datum: NAD 83  
 Projection: UTM  
 Zone: 18N



● Ocean  
● Park

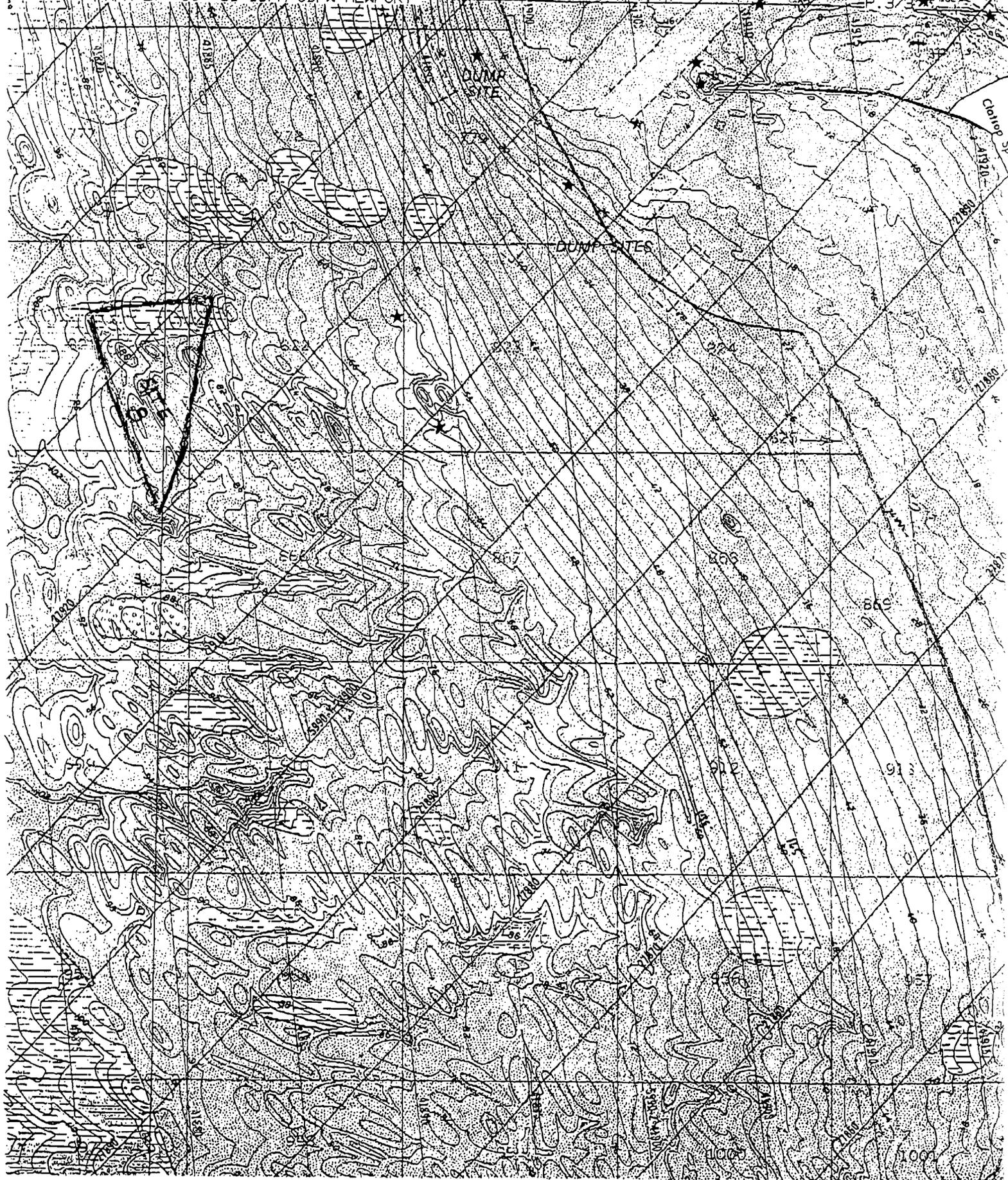
NORTH BEACH PENINSULA

● Oceanside

SEDIMENT TYPES

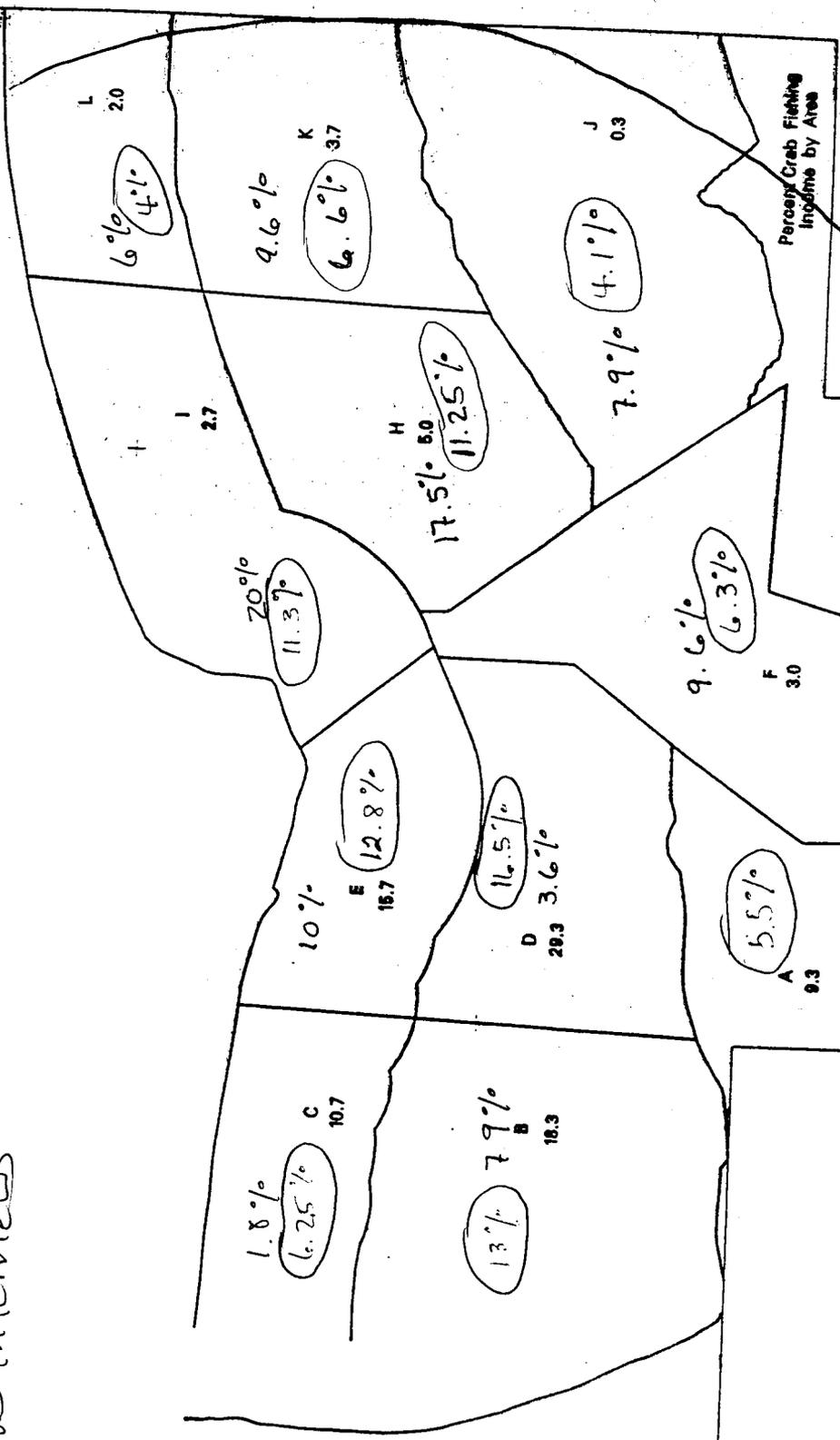
Mud		Gr	
Sand		Ro	
Shells		Cc	

Sediment boundary ———



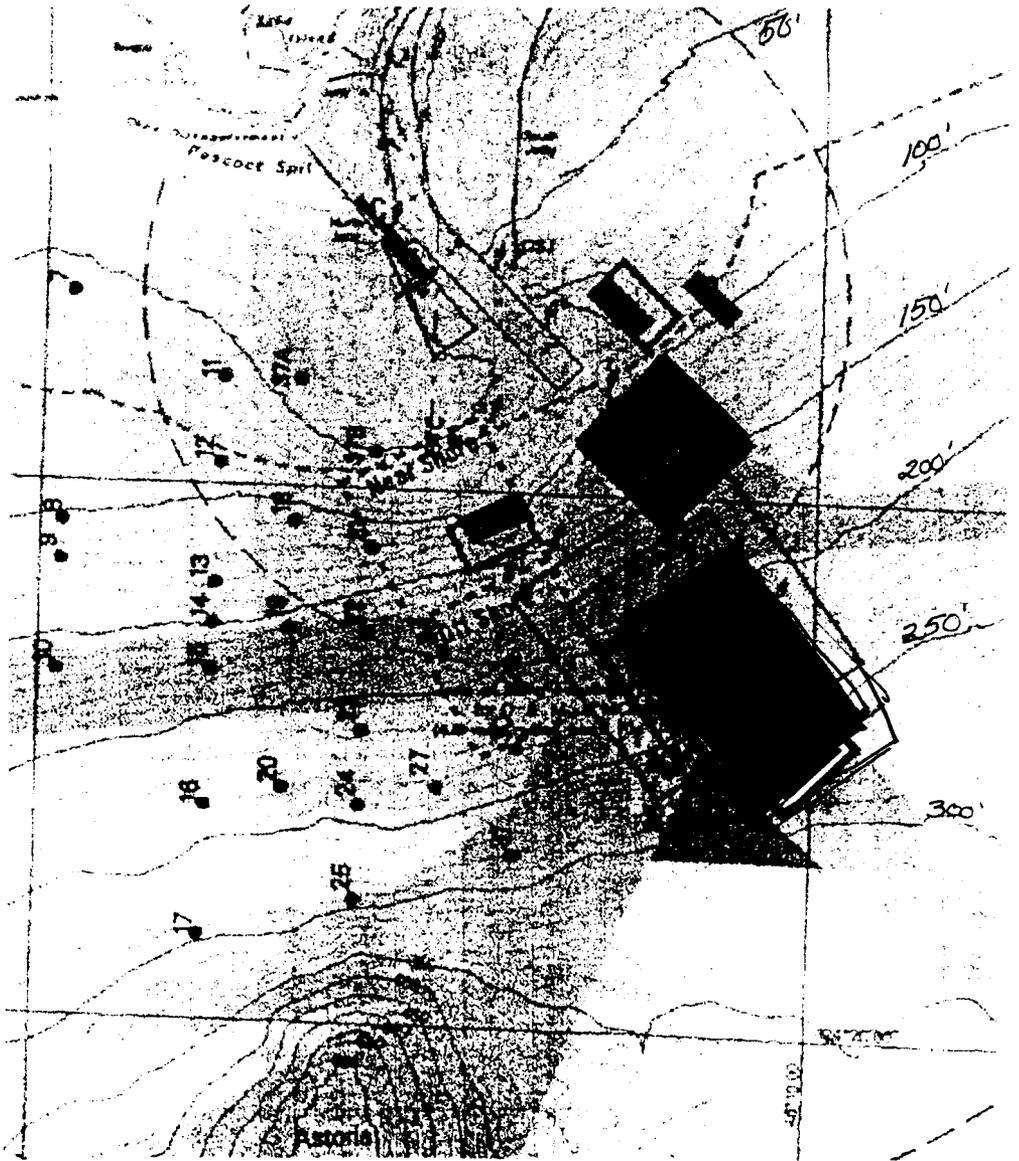
17 + 15 = 32

OR + WA Combined  
Grab Interviews



Percent Crab Fishing Income by Area

CRCFA Proposal	
	
225mcy	
250 feet	
4.02 sq mi (total)	
2.6 sq mi (inner)	
2,571 acres (total)	
1,653 acres (inner)	
8,000 x 14,000 ft or 1.5 x 2.7mi (total)	
6,000 x 12,000 or 1.1 x 2.3mi (inner)	
38' mound/225mcy/2.6 sq mi	
@ .17' per 1mcy in 2.6 sq mi	



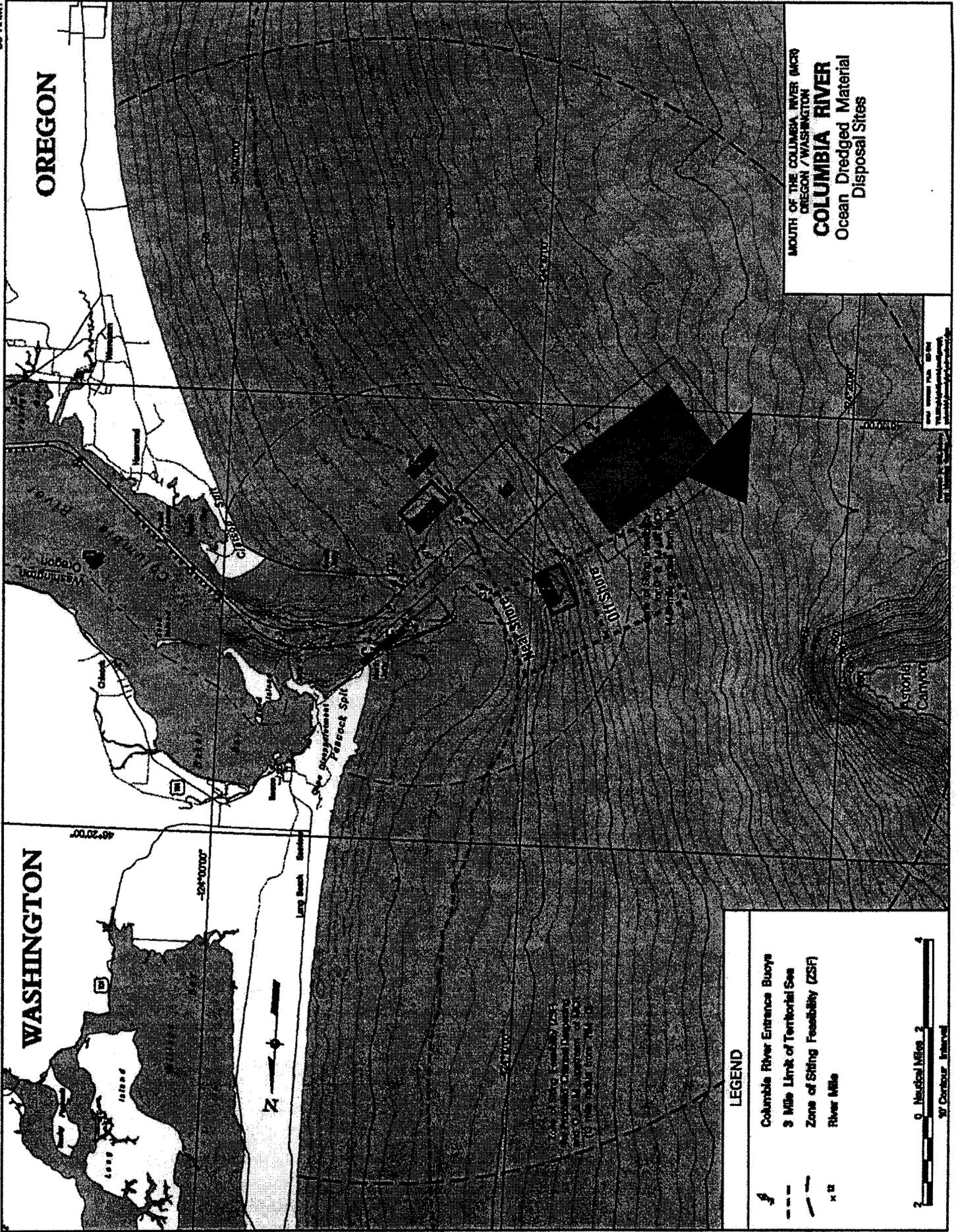
Using Site B real world data:

2.6 square miles = 10.4' mound height ( 61mcy @ 115' depth )  $27 / 2.6 = 10.4$

2.6 square miles = 38' mound height ( 225mcy @ 115' depth )  $225/61 = 3.69$   $10.4 \times 3.69 = 38.4$

WASHINGTON

OREGON



MOUTH OF THE COLUMBIA RIVER (MCR)  
 OREGON / WASHINGTON  
**COLUMBIA RIVER**  
 Ocean Dredged Material  
 Disposal Sites

**LEGEND**

- Columbia River Entrance Buoy
- 3 Mile Limit of Territorial Sea
- Zone of Siting Feasibility (ZSF)
- River Mile

0 Nautical Miles 2  
 100 Contour Interval

Zone of Siting Feasibility (ZSF)  
 Proposed Disposal Disposal  
 (U.S. Army Corps of Engineers)  
 (Scale: 1:50,000)

Sheet No. 10-101  
 Date: 10/1/88  
 Project: Columbia River  
 MCR Disposal Sites

## **Braun, Eric P NWP**

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**From:** Dale Beasley [crabby@aone.com]  
**Sent:** Friday, May 28, 1999 8:03 AM  
**To:** Malek, John  
**Cc:** Eric Braun  
**Subject:** MCR dredge disposal site

John:

I spoke with Eric Braun recently and we tentatively agreed to an actual disposal site with dimensions of 11,000 X 16,000 feet not including the buffer. SE corner of the site is at the CR buoy (46 11 08, 124 11 04). Hope this is acceptable to you. CRCFA still feels that the site is much larger than necessary, but are willing to live with it to keep the dredging on going without any interruption.

Guess management of the sites is the next step. We will call and discuss this with you in the near future. We believe that the size of the buffer is unprecedented, and does not need to be 3000 feet large. Also, I do not completely understand how the site will be written up so that dumping will not occur in the buffer in the future. Our goal of the disposal site is still to keep the actual footprint as small as possible, as this area supplies crab to the fishery even if not fished much directly.

Mitigation for unavoidable loss of habitat and resource needs to be worked out. Each square mile of crab habitat has contributed about 122,000 pounds of crab to the fishery over the last 5 or 6 years.

Can some type of financial aid be worked out for CRCFA research program? We attempted to gather information in the disposal area this winter and were unsuccessful, do to loss of test pots at each attempt. December is the time to check as tug traffic always picks up after the first of the year. Just for your information, yesterday our research pot had 69 crab (46 females) in it off Long Beach in 48 feet of water. I am glad that is not the disposal area.

Throughout all of this our goals have not changed.

- Navigational safety
- Preservation of Habitat and renewable natural resources
- Protection of local economics

Dale Beasley, CRCFA

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**MEETING NOTES**  
**APRIL 14, 1999**

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**Columbia River Dredged Material Disposal Site Workshop**  
**April 14, 1999**  
**Meeting Notes**

***Introduction***

On April 14, 1999, the U.S. Army Corps of Engineers, Portland District (COE) and U.S. EPA, Region 10 (EPA) convened a day long meeting at the Corps of Engineers, Portland District Offices. The meeting was called to discuss further the proposal disposal sites and to address and understand comments received on the DEIS. Representatives from Federal, State, and local agencies were in attendance, as were individuals representing the crab and oyster fishing industries. A neutral facilitator, Valerie Lee of Environment International Ltd., Seattle, WA (EI), led the meeting and the notes of the proceedings were recorded by Polly Hicks of EI. An attendance list is attached.

***Opening Remarks***

The COE Deputy Commander, Lt. Col. Brice opened the facilitation meeting by welcoming all of the groups to the meeting. He expressed the importance of the projects and his confidence in the groups ability to develop the best solution for the project.

The facilitator welcomed everyone to the meeting and asked for an attendance call/introduction for the benefit of everyone since the group was fairly large. She then turned the meeting over to Laura Hicks (COE).

***Laura Hicks' presentation***

**Laura Hicks** - started the meeting by welcoming the group and discussing the day's agenda (Slide 2-3). [*For ease of reference we have included the text of some slides in the body of these notes and copies of all slides used in the presentation are attached.*]

**Slide 2 -- Purpose of the Meeting**  
**March 17, 1999 e-mail**

Discussion of the ocean disposal sites purposed in the DEIS and the comments received during the review process

- How Working Group Input Was Used in Developing the Proposed Sites
- The Rational for Selecting the Proposed Sites
- Summary of Major Comments
- Options for Modifying the Proposed Sites

### **Slide 3 -- Today's Agenda**

- Introduction and Review to Process to Date
- Management & Monitoring Strategies
- Review of Crab Studies
- Break
- Open Discussion of Data
- Lunch
- Benson Beach Alternatives
- Discussion of Next Steps
- Break
- Continuation of Discussion
- Closing Remarks

She first noted that the COE had talked to USFWS, NMFS, Oregon and Washington State agencies, the CREST council, Pacific Company, and CRCFA about the proposed sites. She stated that today's meeting is to address and understand the comments given by the different agencies and stakeholders, as well to gather more input. Laura reviewed the days agenda in which the COE will present comments and information during the morning. The afternoon is left open to discuss the presented information and site designation. Laura then moved on to detail the thought process of the COE and EPA in identifying the proposed sites. They began with an elimination process in order to focus in on options and proposals. First the COE/EPA eliminated unique geographical features (mud hole and shale pile), which also served to protect fish populations (see attached slides; Slide 4). Then the COE/EPA added the 200 ft contour line as the outward boundary since the benthic organisms in deeper water are more diverse and fragile. Areas to the north were blocked out for high concentration of crab fishing and navigation concerns during the dredging projects that typically run July - October (see attached slides; Slide 5-6). This process resulted in the two large sites (North and South) which were published for review in the EIS (see attached slides; Slide 7). Laura summarized the comments which the COE/EPA heard from the different groups (Side 8).

### **Slide 8 -- What We Heard**

- Sites Are Too Big
- More Detailed Management Plan
- Nearshore 60 Feet of Water or Less
- Use Deep Water and Limit the Extent Of the Footprint
- Reconsider Candidate Site 8 or a Site like it
- Continue to Consider Direct Placement on Benson Beach

Based on the comments and the EIS, the COE/EPA came up with one option; to shrink the North and South nearshore sites to within the 60 ft contour, to use expanded Site E with proper management and monitoring, and to have a fall back deep water site for bad weather or if Site E can no longer be used.

Edie Beasley - asked for the acreage on the new nearshore sites.

Laura Hicks - informed her that the North nearshore is roughly 35 square miles and the South is 54 square miles.

### *Eric Braun's presentation*

Eric Braun - stated that his talk would focus on management and monitoring of the sites. He stated that he wanted to clarify that site designation does not mean that the site will actually be used for disposal (Slide 10).

#### **Slide 10 -- Site Management and Monitoring**

- Site Designation Alone Does Not Mean USE
- Management and Monitoring Plan Required by Law, Including Coordination
- Management of the Site(s) Is Key to Minimizing Impacts and Conflicts with Other Uses of the Ocean

The COE/EPA will shift between sites as the priorities of the sites change and for unforeseen conditions, such as weather. Eric said he thought there was some confusion over the coordination because in the EIS it was very general. At the MCR there are multiple sites, a large quantity of material, and many other interests or concerns which make the project more complicated. There will be a general management and maintenance outline in the EIS. The specifics will be worked out on a yearly basis. What the COE will do is have a group composed of the COE, EPA, stakeholders, and agencies to have input to the management of the different disposal sites. In his slide Eric listed the COE/EPA management objectives for the disposal project (Slide 11).

#### **Slide 11 -- Site Management Objectives**

- Safe and efficient disposal of dredge material while at the same time minimizing the impacts to coastal resources
- controlling wave height
- minimize impacts to marine resources
- safe and efficient use of hopper dredges
- prudent use of available funds
- minimize conflicts with other uses
- practical beneficial use of dredged material

He stressed that the COE wants to determine what they can accomplish with their funding and still see a good use of these resources. He displayed that the COE was looking at a combination of sites including Site C (North Jetty), which is not an ocean disposal site but is an option that is erosive. Also expanded Site E is important because it is a dispersive site, which erodes year to year allowing for continuous use. The sand from Site E migrates to the North, which is good for Washington's beaches. North and South nearshore components will also keep the sand in the litoral zone system. The COE would use the nearshore sites and E first, and have an offshore component as a bad weather back-up. Eric also explained that the COE has many disposal pattern options (time and height) in order to minimize the impact on the area (see attached slides; Slide 12-14). For the nearshore areas they could use non-repetitive dumping to minimize the layers. One possibility is to dump 1 mcy in a cell with an average accumulation of 1 ft, although some peaks may reach 3 ft because of overlap. The other option is to target a 3 ft depth, thus minimizing the footprint and impact area. Both will keep the sand in the litoral zone.

**Eddie Beasley** - asked if this was just modeling data or real life.

**Eric Braun** - replied that it was based on modeling which was supported by studies from the trial run at Coos Bay.

**Eddie Beasley** - asked if the Newport or Essayon dredges would be used.

**Eric Braun** - replied that the specific dredges will be worked out in the future, but the report was based on the results from a contract dredge which is the worst case scenario.

**Eric Braun** - gave another option which is to dump the material in deep water in a limited area that could be used if there are too many conflicts with the nearshore sites. The average yearly disposal is 4.5 mcy, which in 175 ft of water would have a maximum accumulation height of 15 ft. Eric Braun displayed a slide of the accumulation pattern (Slide 14). The sand will not move and the cell could be used for several years in a row although it cannot exceed the accumulation threshold. He noted that this option minimizes the impacts to crabs and benthics, but the sand will not move or help the beaches.

**Arlene Merems** - asked for the surface area of the maximum accumulation for 4 ½ mcy.

**Laura Hicks** - replied that it was 2000 ft X 2000 ft.

**Kathi Larson** - asked for the depth of accumulation.

**Eric Braun** - said it was 15 ft.

**Kathi Larson** - asked if the impact to marine life can be monitored.

**Eric Braun** - said that they can monitor, but it would be different from their other monitoring and that they could do a benthic survey.

**Eric Braun**- discussed management options (Slide 15).

### Slide 15 -- One Management Option

1. 2 mcy into Expanded Site E and the North Jetty Site
2. 1 mcy Nearshore-South (3 feet accumulation)  
1 mcy Nearshore-North (3 feet accumulation)
3. Additional Material to Deep Water

He expressed that the proposed uses which he was going to go into were based on comments and that he still wants to hear reactions to them. Because the North Jetty is threatened, they want to put 1 mcy there the first year, although in subsequent years he believes that the COE could only add 500,000 cy. Site E is expected to erode last year's addition. The COE anticipates being able to place 1.5 to 2 mcy at that site in subsequent years. Eric noted that this would therefore come to a total of 2 mcy for these two sites. Eric went on to explain that the North and South nearshore sites will each take 1 mcy, which may be adjusted for need of sand. The material can be placed in two patterns, one with a 3 ft accumulation, which has a total area of 220 acres, or a 1 ft accumulation with an area of 500 acres.

**Diane Perry** - asked if it would disperse in 1 year.

**Eric Braun** - replied that they don't know if it would, but that the COE would be able to take surveys in the fall and spring to monitor dispersal and allow them to adjust their disposal strategy. The COE could either repeatedly use a cell until it reached its threshold or alternate between cells. Many management options exist. This flexibility will allow them to reduce benthic and crab impacts and conflicts.

**Eric Braun** - stated that other comments the COE/EPA had heard on the DEIS were to use Site 8 or another deep water site to minimize impacts. The problem with deep water sites is that there is little benthic data. However the COE uses the ZSF as an averaging tool. The COE can dispose outside of the ZSF if the COE has a nearshore component. It is a balancing of time constraints, availability of dredges, volume of material to be dredged, and funding. But again, they would have to do more benthic studies. Eric displayed a slide which outlined the monitoring plan which would refine the management of the sites as new data or conflicts arise (Slide 16).

### Slide 16 -- Monitoring Plan

- Integral to Effective Management
- Tiered Approach Tied to Objectives
- Physical Monitoring Occurs Annually
- Higher Tiered Monitoring If Necessary
- Special Studies to Address Specific Questions

Eric summarized that there is flexibility and just because a site is chosen does not mean that it will be used (Slide 17).

## Slide 17 -- Summary

- Site Designation Alone does not Mean USE
- Management and Monitoring Plan Required by Law as well as Coordination
- Management of the Site(s) is Key to Minimizing Impacts and Conflicts with other Uses of the Ocean

A management/monitoring system will be in place creating a group of COE/EPA, agencies, and stakeholders to annually look at the data and adjust the management plan.

Following Eric Braun's presentation, the following questions and discussions were addressed:

**Mike Desimone** - inquired how the channel deepening project affects these options. He noted that taking 7mcy (over 2 years of construction of the channel deepening) in addition to 5 mcy for maintenance of MCR will result in a total of 15 to 20 mcy. You could fill-up a nearshore site or Site E a lot quicker.

**Eric Braun** - replied that the same management option will be available for the deepening project. He agreed that it would be harder to put that much material nearshore and it might make more sense to place it in deeper water than to spread it out in the littoral zone, but noted that many alternatives exist.

**Mike Desimone** - noted that all of the deepening dredge material could be placed into 1 or 2 deep water sites.

**Eric Braun** - noted that there are many tradeoffs which need to be discussed.

**Tom Wilcox** - inquired from what portion of the river does the 7 mcy come.

**Eric Braun** - informed him that it was from the first 30 River Miles (RM).

**Dick Sheldon** - expressed that he had little faith in the COE and wanted assurance that the sand would disperse from the nearshore sites and actually help the beaches.

**Eric Braun** - said that no models have been done on this because the main purpose is the dredging. The COE could monitor for it, but it would be tricky. He stressed that the main point is we do know that once the sand is in deep water it will not go anywhere.

**Fred Bohne** - stated that abandoning the dredging has not been examined. He stated that a deep water port at Astoria could help Oregon's economy. He noted that the dredging goes farther than Astoria and if the river was not dredged to Portland it would reduce 70% of the dredged material. He also suggested using the dredged material to aid in the building of a deep water Port of Astoria.

**Eric Braun** - replied that the bulk of dredged material comes from the MCR. 4-5 mcy of material comes from MCR and an additional 4-5 mcy comes from the mouth to Portland,

however, not all of that material will be taken to the ocean. Instead, a bulk of that is disposed on land. There is a one time dredging amount of 7 mcy with the deepening.

**Dick Sheldon** - noted that the COE, during an earlier discussion said it plans to transport sand up river to Longview.

**Laura Hicks** - stated that upland disposal sites will be used throughout the remainder of the project. Only material from approximately RM 30 to the Mouth would go to the ocean.

**Dick Sheldon**- replied that the figure was based on an assumption. He also noted that the COE was trying to sell the nearshore, within 1.5 miles, on the basis that it will actually help the beach. He asked the COE to prove this assumption first.

**Laura Hicks** - responded that the nearshore sites are an option and will not be used if they do not help the beach erosion.

**Bob Burkle** - commented that modeling should not be in a vacuum and that Grays Harbor is a model for this system. He added that a larger percentage of sand moves north, which must be factored into the model. He also suggested putting the sand on the beach to ensure that it helps with erosion.

**Eric Braun** - noted that he is aware of the unbalanced dispersal to the north and south. He agreed that there are discrepancies between models and reality, but there is potential for the sand to help in the littoral zone.

**Kathy Taylor** - noted that the closer to the beach the sand is deposited the better, although it may not necessarily reach the shore.

**Laura Hicks** - replied that they have it from agencies that in a depth of 50 to 60 ft there are potential benefits to the beaches.

**Kathy Taylor** - said that there is a difference between potential benefits and placing it on the beaches.

**Eric Braun** - commented that the dredge vessel cannot go in any closer than 30 ft. However, the vessels will try to get in as close as possible and work their way out.

**Dale Beasley** - relayed that the USGS had done work on sand dunes which took 1000 years to develop before man arrived. Which suggests that the sand in the littoral zone will not help the beaches within a reasonable time frame, in our or the next generation.

**Mark Siipola** - replied that the purpose of this study was not to build a beach, but to dispose of material.

**Eric Braun** - noted that they would, however, like to see the disposal help with erosion. The MCR sand is marine sand and they are simply redistributing it.

**Bob Burkle** - asked if it is redistribution shouldn't the sand be placed on a beach instead of allowing it to go back to the river. He also displayed his frustration with the COE boxing itself into one position, such as just dredging the river and not fixing the beaches.

**Eric Braun**- replied that they will get to many of these topics with Benson Beach and that the COE would like to help out if it is within their capacity.

## ***Kim Larson's review of the crab studies***

**Kim Larson** - noted that he would like to review and address concerns, raised in comments to the DEIS, regarding the crab study. The COE/EPA recognizes that the crab fishery is the most important fishery off of MCR.

Kim started with a slide describing the crab landings (lbs of crab brought to dock) over the last half century along the MCR and adjacent regions, which was recorded by UC Davis (see attached slides; Slide 19-20). The slide indicates a cyclical population flux. The crab resource is harvested at such a level that experts believe the landings data to be representative of population levels. The MCR pattern was similar to the Oregon coast's crab landing pattern, indicating that the MCR population is fluctuating similarly to the rest of the coast.

The other concern that the COE/EPA heard was that the dredged material disposal was destroying the crab fishing industry. Kim noted, referring to slide 21 (see attached slides) that no correlation existed when the dredged amounts were superimposed on the crab landing numbers. When the slides were adjusted for how the dumping may effect either the next years catch or the future generations of crabs, again Kim observed that there was no visible correlation (see attached slides; Slide 22-23). Kim then addressed the question of whether or not disposal operations is affecting the crab fishing. Kim concluded that it wouldn't since the fishing starts in December and ends before dredging season begins (see attached slides; Slide 24).

**Jim Nichols** - pointed out that the crabs are soft during that time and that is why there is no/less catch.

**Kim Larson** - said he understood this but that the catch per effort was still low,

**Kathy Taylor** - also noted that during the first two years there will be dumping all year long.

**Kim Larson** - continued that the other concern was whether or not they were killing crabs, which they attempted to test out in the lab. Originally the COE/EPA wanted to include all groups participating in the facilitation in the study, but they could not include the crabbers due to a litigation which was brought against them by the crabbers. They were able to meet with the state and federal agencies however. The COE/EPA ended up contracting with Battelle, who was able to get the crabs to molt. The crabs molted at night and tested the next morning. The basics of the testing was that they dumped sand on the crabs to determine if there would be any resulting mechanical damage to the crabs. The groups decided to use a variety of depths and to dump the highest amount of sand that could occur during disposal (Slide 25).

**Slide 25 -- Battelle Disposal Test on Soft Shell Crabs  
<50 mm**

Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Total Number After 48 Hours	Survival Ratio	Percent Survival
2.4	5	3	3	4	4/5	80
4.2	14	11	11	11	11/14	79
6.6	10	9	9	9	9/10	90
10.2	11	10	10	10	10/11	91

**Dale and Edie Beasley** - asked to use the other slides of the Battelle data that had been presented at earlier meetings. Edie asked if the group could work with these slides.

**Laura Hicks** - informed them that Kim will go through each one of the slides in order.

**Kim Larson** - gave the mortality rates and percentages for the different tests (Slides 25-27). He noted that the sample size for the 100 mm or larger group was smaller than the other test number since these larger crabs molt but once a year.

**Slide 26 -- Battelle Disposal Test on Soft Shell Crabs  
50 - 100 mm**

Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Total Number After 48 Hours	Survival Ratio	Percent Survival
2.4	6	6	6	6	6/6	100
4.2	10	6	6	6	6/10	60
6.6	6	3	3	3	3/6	50
10.2	11	5	5	5	5/11	45

**Slide 27 -- Battelle Disposal Test on Soft Shell Crabs  
>100 mm**

Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Total Number After 48 Hours	Survival Ratio	Percent Survival
2.4	1	1	1	1	1/1	100
4.2	4	4	4	4	4/4	100
6.6	5	1	1	1	1/5	20
10.2	3	1	1	1	1/3	33

**Edie Beasley** - noted that in the third year crabs (crabs greater than 100 mm) anything over 4.2 inches of sand generated a 80 - 60% mortality rate. She further noted that in second year crabs subjected to anything over 4.2 inches of material there is a 50% mortality rate.

**Kim Larson** - went on to say that the sample size was small and a 20 inch tank was used; therefore, the crabs had no where to go. The strange thing was that none of the crabs died from mechanical problems, they simply refused to dig out.

**Kathy Taylor** - pointed out that one test limitation was that dry sand was used.

**Eric Braun** - replied that the dry sand helped to simulate the duration it would take the sand to fall on the crabs.

**Kathy Taylor** - responded that it was a tradeoff, but with mechanical damage clumping of the material is a factor.

**Eric Braun** - stated that wet sand out of the dredge will entrain water and disperse.

**Kim Larson** - discussed the second test which used hard shelled crabs and both wet and dry sand (Slide 28).

## Slide 28 -- Scripps Test on Disposal Impacts on Hard Shelled Crabs

Size Group of Crabs	*Total Number After 48 Hours	*Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Survival Ratio	Percent Survival
114 - 159 mm	Wet 10.2	13	8	9	9	11/13	85
121 - 168 mm	Dry 10.2	12	8	11	11	11/12	92
121 - 165 mm	Wet 10.2	12	12	12	2	12/12	100

\*It was discussed in the meeting that the titles of these two columns of Slide 28 were accidentally switched.

**Kathy Taylor** - asked for the tank size.

**Kim Larson** - said it was 10' x 2' x 8'.

**Kim Larson** - noted that whatever disposal happens there will be a mound with a gradation of depths and the COE/EPA tested the largest depth of sand, a worst case scenario. In the ocean not all of the crabs will be exposed to that depth (see attached slides; Slide 29). Therefore, the COE/EPA developed a weighted percentage in which they took the percentage disposal amount and multiplied it by the mortality for that depth (Slides 30-32).

## Slide 30 -- Weighted Survival of Dungeness Crab Based on Percent Disposal Mound by Depth *Disposal in 50 Feet of Water*

Sediment Depth (inches)	Percent of Disposal Area	Percent Mortality of <50 mm crabs	Percent Weighted Mortality of <50 mm crabs	Percent Mortality of 50-100 mm crabs	Percent Weighted Mortality of 50-100 mm crabs	Percent Mortality of >100 mm crabs	Percent Weighted Mortality of >100 mm crabs
6.0 - 10.2	8	10	0.8	55	4.4	74	5.9
3.6 - 6.0	10	16	1.6	40	4.0	0	0
< 2.2	82	20	16.4	0	0	0	0
Weighted Average Mortality:			18.8		8.4		5.9

**Slide 31 -- Weighted Survival of Dungeness Crab Based on Percent Disposal Mound by Depth**  
*Disposal in 100 Feet of Water*

Sediment Depth (inches)	Percent of Disposal Area	Percent Mortality of <50 mm crabs	Percent Weighted Mortality of <50 mm crabs	Percent Mortality of 50-100 mm crabs	Percent Weighted Mortality of 50-100 mm crabs	Percent Mortality of >100 mm crabs	Percent Weighted Mortality of >100 mm crabs
6.0 - 10.2	1	10	0.1	55	0.5	74	0.7
3.6 - 6.0	6	16	1.0	40	2.4	0	0
< 2.2	93	20	18.6	0	0	0	0
Weighted Average Mortality:			19.7		2.9		0.7

**Slide 32 -- Weighted Survival of Dungeness Crab Based on Percent Disposal Mound by Depth**  
*Disposal in 200 Feet of Water*

Sediment Depth (inches)	Percent of Disposal Area	Percent Mortality of <50 mm crabs	Percent Weighted Mortality of <50 mm crabs	Percent Mortality of 50-100 mm crabs	Percent Weighted Mortality of 50-100 mm crabs	Percent Mortality of >100 mm crabs	Percent Weighted Mortality of >100 mm crabs
6.0 - 10.2	0	10		55		74	0
3.6 - 6.0	0	16		40		0	0
< 2.2	100	20	20	0	0	0	0
Weighted Average Mortality:			20		0		0

**Bob Burkle** - pointed out that the study used two different species of crabs, one of which was smaller than the other. He also stated that if a crab is buried and chooses to stay buried it will die.

**Kim Larson** - responded that the crabs were always buried before the sand dump.

**Bob Burkle** - said that the point was if they choose to remain buried they will die.

**Kim Larson** - responded that they need to know the percentages and noted the crabs weren't in their environment.

**Bob Burkle** - stated that dumping does not occur in the wild. It frightens the crabs, therefore they stay buried. The key is to determine how often they bury themselves and in response to what. He suggests that they do another study in the wild. He asked how much time as a soft shell do the crabs stay buried.

**Kim Larson** - replied that in all the tests on the soft shell a smaller percentage remained buried. The study showed that not all the soft shells remained buried, some did escape.

**Jim Nichols** - asked how long after molting were the crabs used.

**Kim Larson** - informed him that it was 10 to 12 hours and they were soft when used.

**Steve Barry** - asked if when a crab was on the surface during the disposal it survived and when a crab was buried it died.

**Kim Larson** - said that they waited until the crab was buried before dumping.

**Steve Barry** - expressed concern that the COE should do further studies because he saw significant mortalities with disposal.

**Dick Sheldon** - noted that the crabbers are trying to extend the primary catches from being in the period of January and December to 3 or 4 months. He also stated that the ocean is saturated with crabs during the disposal season, but the crabbers do not land crabs then because the crabs are soft. He said that trawling for crabs while they are soft was ludicrous. Dick noted he finds no relevance between disposal and crab catch. He noted that there are many other factors playing out, such as local sterilization of habitat by dumping, mounding, and safety factors. If it were not for the crabbers, the COE/EPA would not try to address these issues. He went on to explain that as to Washington and Oregon catches, a large portion of the catch landed on the Oregon side comes from Washington. This tends to smooth out the data, so that the data does not accurately reflect impact. Therefore, he explained that there were a number of things that the COE/EPA has not worked into the equation and these factors increase the impact on crabs as compared to the information that Kim displayed.

**Kim Larson** - replied that the graph represented the fishing season and landing occurrence and that a shift in the fishing season would change the appearance of the graph.

**Dale Beasley** - stated that according to the graph the crabs are not there.

**Laura Hicks** - opened the possibility of trawling for crabs before disposal, but asked if this was a viable solution because they are soft.

**Dick Sheldon** – talked about using another approach to find crab density, such as using a pot.

**Bob Burkle** - stated that presenting the crab landing as if it were the population size was beyond flawed. A decreased catch size does not mean that the population is down. In order to be representative, it needs to be catch per effort.

**Kim Larson** - agreed and stated that the graph is representative of trends.

**Steve Barry** - stated that he thought it was representative of population trends.

**Edie Beasley** - cited Armstrong, a leading crab biologist, that three things must be taken into consideration: respiration, impact on food supply, and juvenile refuge areas, because they have significant impacts to the populations. Edie asked how the COE/EPA was addressing these areas. She doesn't believe that the COE/EPA has addressed all areas and therefore should do more studies on these areas before making a decision.

**Kim Larson** - replied that the COE/EPA was addressing them and trying to avoid crab areas.

**Jim Nichols** - stated he thought the graph worked because in 1956, when the COE started dumping the crab landing decreased.

**Kim Larson** - noted that in 1956 they used a single site dumping in which they dumped 14 mcy of sand in one area, which caused the crab population to decline in the site area.

**Steve Keller** - pointed out that because the landings included those 40 or 50 miles away from the MCR, one cannot conclude that they are representative of the area.

**Steve Barry** - commented that no one can infer that there has been no impact to the crab population or biology of MCR. There has been too much noise (fluctuation) and that crab populations are driven by their environmental conditions. He was talking not just about the impacts related to dredging, but the area in general.

**Kim Larson** - noted that he used the graph to see if the disposal impacted the crab catch, the fishing industry, which did continue even after the point dumping in 1956.

**Bob Burkle** - again noted that the landings were too spread out to make that conclusion.

**Steve Barry** - noted that although from the graph one could infer that the dumping has no effect on crab habitat, the dumping does have a definite effect.

**Steve Keller** - stated that the problem in deducing impact from landing data is that the landings are all over the area, not just in the dumping site. A measurement tool for the dumping area is needed.

**Bob Burkle** - noted that the premise that pounds per catch correlates to dredging impact is a real leap, especially since you are assuming that male adult crabs represent the rest of the population.

**Arlene Merems** - agreed that the correlation was limited.

**Kim Larson** - responded that the comments which he heard were that the COE/EPA is destroying fishing at the MCR with disposal. He agrees that disposal impacts the crab habitat and that some of the landing data are from other areas. However, the graph shows that although they are dumping the fishing continues.

**Kathy Taylor** - pointed out there are serious scientific limitations to the presented data. Another concern of hers was the perception that not everyone has a scientific background. She is concerned with the credibility of the data.

**Facilitator** - said that we have heard concerns over the scientific data. She pointed out that the main question was whether or not the overall generalized data helped to answer the question of whether or not dumping destroyed the crab fishing.

**Kathy Taylor** - responded that the data was so flawed she couldn't even look at it.

**Bob Burkle** - noted that because the data was presented by the COE senior biologists it gave it weight. He found it very irritating that the senior COE biologists would use such data as an answer to the concerns regarding the impact on crabs.

**Kim Larson** - explained that he was trying to communicate that here are two separate graphs. One represents crab fishing at MCR and one represents dredge material disposal at MCR. He queried as to where the impact is?

**Steve Barry** - responded that this was incredibly misleading.

**Eric Braun** - interjected that it responds to the specific comment that dredge material disposal at MCR will wipe out the crab fishery.

**Kathy Taylor** - noted that we are talking about impact to crabs, not wiping the population out, and this data won't provide information on impact.

**Kim Larson** - asked how you would get at impact.

**Facilitator** - suggested that the group revisit this topic after lunch and to think about what scientific studies the individuals would want in order to study impact.

**Arlene Merems** - expressed her frustration with the meeting, that the COE/EPA presented so much information but the group was not allowed to interject with comments. She wondered how, if they were able to remember all of the comments, would they be addressed in the second half of the meeting. She was particularly concerned with disposal sites, up-river sedimentation, and footprint reality.

**Laura Hicks** - responded that was the next item on the agenda: to talk about the data presented and the subsequent steps in order to get a solution.

**Dale Beasley** - commented that wherever the dredge spoils go, it sterilizes the crab habitat. After the 1997 dumping on Site B, he attempted to fish there and never got more than 1 or 2 crabs and lost 5 of his 8 pots. But to the north of the dump he caught 25 crabs per pot. The past winter he had another crab fisher fish at that site. That fisherman found basically the same thing. He had 1 or 2 crabs per pot on the site, while just off of the site he caught 14 to 15 crabs per pot. The dumping removes commercial fishing from the area. Dale Beasley noted that like the COE/EPA's ZSF the crabbers also have a zone, especially for the smaller boats. Every acre which is taken out due to dumping comes out of someone's pocket. He wants to keep the sites to a minimum, or put it on the beach which is more effective than putting it in the littoral zone.

## ***LUNCH BREAK***

**Facilitator** - redirected the group after lunch. When she was listening to the presentations and questions she heard four topics being addressed.

1. Science - was there enough data?  
- more studies needed
2. Sites - geographic locations
3. Management
4. Monitoring of the sites

She understands the frustration with trying to get a group as large as this one to work together and discuss issues productively. She noted that Dale Beasley before the break outlined his conclusion that impacts occur where disposal occurs. It appears that the group agrees that impacts occurred at Site A given the management approach used at that site (the historically used site mentioned by Kim and Jim Nichols). There is uncertainty in the science and the conclusions one draws. There are value judgements which must be made, given some impacts and disagreements in broad areas. There also exist trade-offs between large and small disposal sites. The facilitator asked the group if they could state whether individuals have a preference for small or large sites, or Benson Beach.

**Mike Desimone** - stated that the group agree that there will be an impact whether you have pin point or wide area disposal. But as to whether pin point or wide has more of an impact, that is for the COE/EPA to determine. He said he couldn't answer the questions posed because he did not know the extent of impact.

**Jim Nichols** - stated that designation of Site 8 is the only possible solution. That it should be destroyed and gotten over with so all dredge material can be deposited there.

**Arlene Merems** - noted that there was no baseline benthic information for that site, and there is a lack of fish information for most of the sites. Site 8 is rejected for that lack of information, as are the nearshore south sites. She also noted the importance of monitoring. When asked she responded that the nearshore north site has more information than the south sites.

**Diane Perry** - asked what it would take in order for there to be comfort with those sites?

**Arlene Merems** - indicated that was not easy to obtain, because sampling takes years. There is also a concern over flat fish juvenile habitats which could be altered. These unanswered issues need to be studied before you can determine impacts. She indicated that she could maybe compromise to pick one particular site, but nothing as big as what is proposed.

**Christine Valentine** - recapped Oregon's comments. The scientific data is too lean, and given that Oregon is pushed to minimize impact. If there was a commitment to gather more information, she could possibly leave the door open to sites.

**Arlene Merems** - noted that she originally thought that the crab study was a pilot study after which a more intensive study would be conducted.

**Facilitator** - noted the need for another collaborative study which would build on the previous crab study.

**Steve Barry** - agreed with the Jim Nichols except in his site choice. He asked to look at the beneficial uses of the DM and to turn this into a win-win situation (i.e. Benson Beach, Site C and expanded E). But he doesn't like Site 8.

**Bob Burkle and Dale Beasley** - agreed that Site F would be a good back-up.

**Eric Braun** - noted that the bar pilots had problems with Site F.

**Rick Vining** - asked Steve Barry if he was no longer in favor of the nearshore locations.

**Steve Barry** - replied that he had changed his mind because of grain size differences.

**Bob Burkle** - stated that he no longer liked the sites because of a danger to soft shell crabs.

**Laura Hicks** - suggests that since the two people who proposed the nearshore sites no longer like them and these sites would require further studies, they should be removed from the table.

**Bob Burkle** - clarified that the north offshore portion was the worst, followed by the south offshore, while the north nearshore portion was the least bad. The problem is the need for funding, time, and more studies to determine impact. He suggested that it was better to have the North Jetty, Site E, Site F and Benson Beach, on which everyone agrees and which is quickly eroding.

**Kathy Taylor** - asked if anyone objected to North Site as long as it goes with Benson Beach?

**Rick Vining** - requested a couple of offshore sites in WA because they would be of beneficial use. He also wanted the north nearshore site.

**Kathi Larson** - agreed and thought that the COE/EPA had enough information to move farther out. She agreed with Site E, was unsure of N. Jetty due to Section 404 of the CWA. The south nearshore was preferable, while the deep site is objectionable because of lack of information, especially for capacity.

**Rick Vining** - stated that economic reasons favored N. Jetty and E. He disagrees that grain size is a problem and wants more information on the impacts of deeper sites.

**Mike Desimone** - confirmed that you have to know the impacts before moving forward with site selection. He pointed out that Benson Beach does not accommodate enough material. He wanted to move on, and to move on is to have further analysis in order to see impacts on crabs, waves, and the beach.

**Ben Meyer** - summarized that there is not much information for in-shore areas, doesn't know for sure if the nearshore disposals will help and if offshore will modify habitat. He concluded that if we select a site and dump, then we assume that the area will be sterile. The nearshore has a range of benefits and impacts which we should monitor, but we first need a baseline. He suggested that if Site 8 is a back-up, then maybe it should be used to capacity until more information can be gathered on the other sites. The group could also designate sites but agree not to use them until more information has been gathered. While Benson Beach is agreed upon, it won't hold all of the material and neither will expanded E; therefore the group must give the COE room to maneuver.

**Mark Siipola** - pointed out that designation does not mean use.

**Diane Perry** - asked if the baseline information could be gathered as part of the management and monitoring plan.

**Kathy Taylor** - stated that the COE needs information before the COE can dispose of material in an area.

**Diane Perry** - replied that earlier on we assumed that we had information and asks if there is any place where they have adequate data.

**Facilitator** - recapped that the group was in agreement on Site E and possibly Site C. She suggested one option might be to create a step wise process to first designate sites, but not use them until further studies are preformed. She also suggested one option might be to use designation as a placeholder for a site in case the site proves to be useful and beneficial.

**Shari Hildreth** - agreed with an interim rule.

**John Malek** - informed that there is no interim designation through the EPA. And if there is not enough data for a Section 102 designation, then there is not enough for a Section 103 designation.

**Dale Beasley** - said that if it is a permanent designation, it changes things. He noted that we do not have an RFA [regulatory flexibility analysis].

**Eddie Beasley** - asked if the group was to know the results of the RFA and if the process was going to move onto an EIS.

**John Malek** - stated that if it goes to final EIS and the COE recommends no action, they don't have to do a final rule.

**Kathy Taylor** - expressed her concern over the designation considering all of this.

**Laura Hicks** - suggested trying to see if the North nearshore sites help with erosion, but that a 102 or 103 would be needed to test this because dumping will occur in the testing.

**John Malek** - mentioned the possibility of going back to Sites A and B which were "closed" by EPA. Reauthorization is needed.

**Facilitator** - asked about getting divers in the nearshore to study dumping impacts.

**Bob Burkle** - said that it wouldn't be bad to have real life data, if it was done scientifically.

**Facilitator** - asked why not have a management plan that is a vehicle for developing a study.

**John Malek** - pointed out that the study has to be designated as part of the management plan.

**Kathi Larson** - suggested collecting baseline data before designation.

**John Malek** - pointed out that you only need to meet criteria for the designation, it does not have to be "baseline" in the context of the regulations. He noted, however, that it is the practice to have the baseline data before designation.

**Mark Siipola** - noted that the monitoring will include studies and special studies. The COE/EPA already has data from 250 ft inward. In the 1992 samples they collected sediment and benthic data which were used to eliminate areas.

**Eddie Beasley** - asked if increased benthic data was ever observed in North Shore area.

**Kathy Taylor** - suggested that maybe that's all that is there.

**Bob Burkle** - replied that the next year it wasn't there.

**Kathy Taylor** - stated that glossing over the question of if there could be an interim site, the answer is no.

**Facilitator** - asked whether there could be a management plan, the purpose of which was to conduct tests.

**John Malek** - agreed that this was a possibility. Or the COE could try to get another Section 103 designation, which would give more time to pursue specific objectives. Although, if they don't have the information for a Section 102 designation, then it's not enough for a Section 103 designation. He also stated that if the group agrees not to sue the EPA, then they will be more likely to allow for a move.

**Arlene Merems** - asked where the EPA stands since they only require baseline data if there is not enough information available.

**John Malek** - stated it was up to the decision maker.

**Eric Braun** - noted that if they use Site E and the N. Jetty Site to capacity and had expanded Site F as a back-up, it would give the COE only one and a half more seasons.

**Rick Vining** - noted that if you have a problem with a site or sites there would be nothing left. If they were to use all three then you would have more room to move.

**John Malek** - informed the group that Site 8 does not comply to EPA standards because of lack of information.

**Arlene Merems** - asked why the south sites work.

**John Malek** - replied that there is significant enough information for designation, while Site 8 is unique because it is deep water and they need more information about it.

## ***BREAK***

**Facilitator** - asked John to confirm the nature of his concern with respect to Site 8. She asked if his concern was with it being outside of the 200' contour and, as a result, he had a concern that the data outside this contour did not provide good information for designation.

**John Malek** - agreed that that stated EPA's concern and he confirmed that he is comfortable with sites inside of the 200 ft contour where there is more information.

**Facilitator** - asked John about his reaction to moving Site 8 inside the 200 ft contour line and in the towboat lanes, which is not crabbed, if the tow boat pilots agree. She asked whether this approach could be coupled with the development of a management and monitoring plan under Section 102.

**John Malek** - confirmed that, under Section 102, the group could develop management and monitoring plans and that he had no problem with that.

**Facilitator** - asked the group whether they might be interested in an option of creating a management plan which provides that only a small area will be used for disposal. During which time studies can be conducted to collect data to accommodate John's concerns.

**Bob Burkle and Steve Keller** - state that they do not like the idea because it encourages offshore dumping.

**Diane Perry** - said that she heard interest in a small deep water confined site.

**Laura Hicks** - stated that the COE would like a deep water site as a back-up in case of bad weather.

**Kathi Larson** - asked about Site F.

**Eric Braun** - replied that the pilots have a navigation problem with Site F and disposal there could affect the waves.

**Steve Keller** - stated that he heard that Site 8 would be a safety valve with significant shore dumping. He would like Benson Beach and they are trying to buy time to see if it is feasible.

**Rick Vining** - notes that WDFW representatives are not speaking for the state of Washington.

**Ben Meyer** - noted that Benson Beach is not in the site designation process and won't get the COE/EPA what they need because it can't take enough material. Sites have to be designated.

**Bob Burkle** - replied that the problem is dumping in deep water.

**Facilitator** - focused the discussion to a "moved" Site 8.

**Arlene Merems and Kathy Taylor** - stated that they need more time to evaluate the data and information before agreeing to a moved Site 8.

**Laura Hicks** - stated that with the benthic data that the COE has, the COE could add it to the overlays so that John can look at the data and then the group can return to see if a "moved" Site 8 works as a safety valve.

**Arlene Merems** - proposed to look at Site 8 or something like it as a fall back to other sites, if there is the benthic data.

**Mark Siipola** - objected to the use of south side offshore.

**Arlene Merems** - agreed with Mark Siipola because of the high concentration of crabbing in that area, about which she sent new information to the COE. She said that the original overlays were not truly representative of the fishing areas. Also, she noted that the area was close to juvenile flat fish habitat.

**Eric Braun** - stated that he had not received the overlays yet.

**Arlene Merems** - noted that the south offshore overlay was a subjective boundary, not a certain boundary. She voiced her concern about the whole section, but primarily on the northern side.

**Kathi Larson** - asked if they had benthic data for that area.

**Laura Hicks** - replied that they do not have a point station for it.

**Arlene Merems** - wanted to know how the COE determined that the point station was sufficient information in consideration of the concerns regarding data for Site 8.

**Laura Hicks** - replied that they didn't have the information on the electronic overlays but that they could have it added.

**The Facilitator** - asked for people's reactions on N. Jetty and expanded Site E, as well as any other sites which they wanted to discuss:

**Kathi Larson** - said she would like an inshore site. She also noted that she thought the group had inshore data already, although some people are saying that the group does not.

**Arlene Merems** - responded that the inshore south site has 7 benthic data points.

**Ann Richardson** - asked if there were any negatives to putting sand on Benson Beach.

**Eric Braun** - stated that there was more to it than just a Section 404 permit.

### ***Eric Braun's presentation on Benson Beach***

**Eric Braun** - began his presentation by stating that Benson Beach is eroding; therefore, some believe that rebuilding it could be a solution to the disposal of dredged material. He noted that putting the material on the beach cannot be accomplished with the equipment that the COE is currently using. Eric Braun outlined the three different methods proposed for placing the dredged material on the beach (Slide 35).

#### **Slide 35 -- Benson Beach**

- Requires Special Equipment to Place Material
- Hopper Dredge Pump Ashore
- Punaise Dredge (fixed in-place dredge)
- Hopper-Sump-Pipeline from Baker Bay
- Disposal Capability ½ to 1 mcy/yr
- Disposal Would Interfere With Park Use
- Capacity on Benson Beach Estimated at 8 mcy
- Requires Cost-Sharing Partner

All three methods have a limited capacity as to how much material they can pump on the beach. All methods pump between 0.5-1 mcy per year. The beach only has a capacity of 8 mcy in total. The COE will need a cost sharing partner because the building of the beach is out of the budget and scope of the O&M of MCR. Eric Braun then discussed in further detail the different options available and their requirements (Slide 37-40).

#### **Slide 37 -- Hopper Dredge Pump Ashore**

- Requires Construction of a Access Channel and Turning Basin in Baker Bay (2 mcy)
- Hopper Dredge Not Currently Configured for Pump Ashore
- Takes Hopper Dredge Out of Production
- Requires 1 - ½ to 3 Hours to Pump Ashore

**Slide 38 -- Punaise Dredge**  
(fixed in-place dredge)

- Requires Location Within 6,000 feet of Disposal Site or Added Cost for a Booster
- Experimental Technology Not Used in the US Yet
- Additional Information Required to Determine Suitable Location

**Slide 39 -- Hopper-Sump-Pipeline**  
from Baker Bay

- Requires Construction of an Access Channel and Sump in Baker Bay (3.5 - 6.5 mcy)
- Requires Mobilization of a Pipeline Dredge

**Slide 40 -- Preliminary Cost Estimates**

	First Costs (One) Time	Mobilization (Annual)	Incremental Cost (cy)
Hopper Pump Ashore	\$7 m plus \$1.6 m for configuration		\$2.60 - \$3.90 (no booster)
Punaise		\$550 k	\$2.50 - \$3.50 \$3.20 - \$4.40
Hopper- Sump- Pipeline	\$14 - 22 m for construction	400 - 500 k	\$3.50

He also covered the costs of the different systems for comparison: Hopper Sump-Pump \$3.5 million, Punaise \$1.2 million, Hopper Dredge and Pump \$2.6 million. In order for a cost sharing amount to be figured out, the COE would first need an entity who was willing to take the sand to step forward so they could refine the details. There would be no official go ahead until a cost sharing partner stepped forward.

The following questions and discussions followed the presentation:

**Kathy Taylor** - asked if the Punaise system were used, would the Vicksburg lab cost-share

**Eric Braun** - replied that if it works out and becomes part of a research program it is a possibility. But because the Punaise would be a demonstration project, the Punaise does not provide a long term solution.

**Bob Burkle** - provided several suggestions for getting sand onto the beach. First, the COE could dispose the dredged material on a site next to the jetty across from the beach. You could open the jetty. Then, a permanent pipe could be placed through the jetty to the beach. A pipeline type dredge could be placed on the jetty where it would be protected from any storm. He cited the existence of spruce trees on the jetty as proof of shelter from the storm. Or the COE could reach it with a Punaise or upper pipeline. This would provide for a short pumping distance, little down time from the Hopper, and less cost.

**Eric Braun** - agreed that Bob's system sounded simple enough, but the wave and current environments will complicate it. To affix a structure to the jetty would cost millions. Ripping the jetty open and creating a gaping hole would jeopardize the jetty and the beach behind it. Also, another pump limitation is that it plugs up solid and you have to take it apart to repair it, which you can't do if it is running through a jetty. The pumps are generally submerged in order to pump efficiently and therefore cannot sit on a jetty.

**Bob Burkle** - replied that he wanted a second opinion on getting through the jetty

**Eric Braun** - added that another consideration is the effects of the current, which are already evident, will make it hard for any equipment to stay put.

**Bob Burkle** - noted that the COE's figures for disposal capacity for Benson Beach are ignoring the erosion which occurs there.

**Eric Braun** - agreed.

**Bob Burkle** - asked about an in-water on site disposal in the surf zone. Put the pipe in the zone and let it rip.

**Eric Braun** - replied it would leave a heap of sand that would have to be dragged down the beach or left in a pile, even in 20 ft of water.

**Facilitator** - asked who in WA would be willing to cost share with the COE.

**Bob Burkle** - replied that it would be the people paying for MCR's O&M, the ports.

**Steve Barry** - replied that that was Bob's opinion and it would have to be brain-stormed upon because they would not want to be constrained with the local sponsor.

**Dave Hunt** - stated that Congressman Baird would be aggressive about getting funding if the group comes to a consensus for a solution to the channel dredging and deepening which protects crabs and beaches.

**Ben Meyer** - stated that he saw Benson Beach as a recipient for construction if that moved the process of site selection forward, but that it only eliminates 1 of the 8 mcy. It was also out of the realm of the site designation, the group still needed more sites.

**Steve Keller** - agreed, but said that they didn't have to give up on Benson Beach.

**Ben Meyer** - stated that if the channel deepening went through you could get 7 mcy on a beach. The sticking point is what do you do in 20 years because Benson Beach is not a true solution, the group has to look at the rest of the material.

**Facilitator** - confirmed with Congressman Baird's representative that in order to get anything through with the Congressman, it would take a couple of years for funding. She observed that the COE/EPA would have to shut down MCR in 1.5 years. She asked if anyone else in WA would step forward.

**Jim Nichols** - noted that the ports do not pay for channel maintenance.

**Steve Keller** - said that he could not say for sure, but they are looking. He also assured them not to worry about the money and permits.

**Rick Vining** - suggested putting the proposal to contractors because they can sometimes save money.

**Laura Hicks** - made two points. One is for whom are the COE trying to design this. Secondly, another option is for the states to match dollar for dollar the spending in order to make it happen, since the COE has money in the planning assistance to states program to look at this type of project in whatever detail requested.

**Eric Braun** - suggested following up on Rick Vining's suggestion and put the feeler out for a partner.

**Laura Hicks** - asked the group to brainstorm so that by Sept. 30<sup>th</sup> they would have a cost-share partner.

**Facilitator** - suggested developing a working group to decide if Benson Beach will work.

**WDOE** - committed to talking to agencies and ports in order to get an answer about Benson Beach.

**Laura Hicks** - stated that they need this first step so the COE knows what the problem statement will be in order to proceed.

**Eric Braun** - added that it still is not a solution to the O&M of MCR.

**The Facilitator** - asked if anyone else wanted to work in the Benson Beach working group and no one did. She moved the group onto the discussion of other sites for designation.

**Bob Burkle** - stated that he was willing to experiment with a nearshore site with specific information on crabs so that there is a mitigation strategy to replace crabs. Especially if the fishermen agree on an area which they do not mind getting toasted and there was a possibility of getting the dredged material near shore. He would consider nearshore only under these conditions. He preferred a safety valve used 3 or 4 times a year when the COE was stuck.

**Arlene Merems** - stated that ODFW supports Site E, Benson Beach, and a North nearshore area and offshore site, not necessarily Site 8 but in the vicinity. Anywhere the COE puts sediment it will cause impacts; therefore, she proposed to use sites which are already in use.

**Laura Hicks** - asked if the state of Oregon was not interested in a nearshore site.

**Arlene Merems** - said yes.

**Jim Nichols** - suggested eliminating the nearshore south site

**Rick Vining** - suggested waiting until the Southwest coastal study came in.

**Christine Valentine** - stated that the group does not have that luxury.

**Rick Vining** - replied they did by designating but not using the site.

**Christine Valentine** - said that she was not sure if they could legally do that. Oregon committed not to eliminate the nearshore site. At this point in time, when weighted against fishing importance, we prefer the offshore, and there is no erosion problem in Oregon.

**Bob Burkle** - asked if the COE/EPA would allow Oregon a nearshore site if they requested it years later.

**Laura Hicks** - replied that they probably would not.

**Christine Valentine** - stated that if the rest of the group wants them to still consider it, they won't object.

**Facilitator** - asked the members of the group if they would object to the removal of a south offshore site (offshore purple box on south side in slides).

**CREST** - stated they would be happy with the removal from consideration.

**NMFS** - responded that it was no heartburn to take it off the table.

**ODFW** - said they were not willing to comment at that point because she thought it was the best sacrificial area/compromise and not a huge area.

**CRCFA** - wanted it off the table.

**ODCC** - wanted it off the table.

**WDFW** - wanted it to be kept on the table.

**WDOE** - deferred to Oregon.

**USFWS** - wanted it kept in as an option to be studied.

During the voting, Arlene Merems asked if the collection of data for the site would happen within a reasonable time frame. It was determined that the process for collection starting could happen in a reasonable time frame. Ben Meyers inquired as to where the sand would move once placed in 60 ft of water. Mark Siipola responded that it would most likely move north and into the sink hole off of the jetty.

**The Facilitator** then suggested a further work group separate from the Benson Beach group which would discuss Site 8 (as is or moved) and nearshore sites. She asked who would be willing to participate.

**Dale Beasley** - asked John Malek how far inwards Site 8 would have to move before it would be considered.

**John Malek** - indicated near the south offshore site (offshore box on Slide 41).

**Dale Beasley** - said that was too far.

**Facilitator** - asked Dale Beasley is he would agree to be in the group to discuss Site 8.

**Dale Beasley** - replied that he never agrees completely or closes the door.

**CREST** - agreed.

**Jim Nichols** - agreed if they were going to try to dump on crab grounds.

**WDWF** - they will participate in group.

**WDOE** - agreed to participate.

During this discussion regarding the creation of a subgroup to discuss Site 8 and the nearshore sites (purple boxes on slides) the following comments were made:

**Laura Hicks** - asked Christine Valentine to inform her if Oregon would not agree to a Nearshore site, because if CZMA would not be given consistency or water quality certification, then there is no reason to proceed.

**Facilitator** - asked if the subgroup should be further broken down into smaller working groups addressing the specific geographic regions under consideration.

**Jim Nichols** - replied that it would not work since the crabs move all over.

**Kathy Taylor** - responded that she did not think it would work to have smaller groups within the subgroup on Site 8 and the nearshore sites because they are dealing with a package of several sites which they must get to work/sell.

It was agreed to keep Site 8 (as is or moved) and the nearshore sites together for discussion by one working group. The Benson Beach working group meetings were set for May 10 - 11. While the Site 8 (moved and same) and nearshore site selection group meeting will be on May 12<sup>th</sup>.

## Attendees of the April 14, 1999 Working Group Meeting

Name:	Organization:	Phone Number:	e-mail:
Barry, Steve	WDFW	(360)249-1203	barrystb@dfw.wa.gov
Beasley, Dale & Edie	CRCFA	(360)642-3942	crabby@aone.com
Bills, Bernie	Port of Vancouver, WA	(360)992-1116	BBills@PortVancUSA.com
Bohne, Fred	CCR	(503)325-6869	
Braun, Eric	COE	(503)808-4348	
Burkle, Bob	WDFW	(360)249-1217	burkblb@dfw.wa.gov
Cawley, Lanny	Port Kalama, WA	(360)673-2325	POK@PortofKalama
Daughn, Jason	Ron Wydan's Office	(503)326-7525	
Desimone, Mike	Pacific County DCD	(360)642-9382	
Ehlers, Paula	WDOE	(360)407-6976	peh1461@ecy.wa.gov
Eriksen, Karl	COE	(503)808-4705	
Furman, Nick	ODCC	(541)267-5810	dcrab@ucinet.com
Gray, Steve	CRCFA-Crab Processors	(360)642-2408	
Harding, Russell	ODEQ	(503)229-5284	Harding.Russell@state.deq.or.us
Hicks, Laura	COE	(503)808-4705	Laura.L.Hicks@usace.army.mil
Hildreth, Shari	Sen. Slade Gorton's Office	(360)696-7838	shari_hildreth@gorton.senate.gov
Hinton, Susan	NMFS	(503)861-1818	susanhinton@noaa.gov
Hlebechuk, Dave	COE	(503)808-4524	
Hunt, Dave	Rep. Brian Baird's Office	(360)695-6292	david.hunt@mail.house.gov
Keller, Steve	WDFW	(360)249-1223	kellersmk@dfw.wa.gov
Larson, Kathi	FWS - Portland	(503)231-6179	Kathi_Larson@fws.gov
Larson, Kim	COE	(503)808-4776	
Malek, John	EPA- Region 10	(206)553-1286	malek.john@epa.gov
Masco, Kaye	Sen. Patty Murray's Office	(360)696-7797	Kaye@transport.com
McKillip, Doris	COE	(503)808-4341	doris.j.mckillip@usace.army.mil
Melville, Tom	ODEQ	(503)229-5845	melville.tom@DEQ.state.or.us
Merems, Arlene	ODFW	(541)867-0300 x246	arlene.merems@hmssc.orst.edu
Meyer, Ben	NMFS	(503)230-5425	ben.meyer@noaa.gov
Mohorie, Ken	WDFW	(360)906-6730	mohorkom@dfw.wa.gov
Nichols, Jim	ODCC	(503)861-3404	
Perry, Dianne	CRCC	(503)285-6343	crcc@teleport.com
Phillips, Stephen	PSMFC	(503)650-5400	Stephen_Phillips@psmfc.org

<b>Name:</b>	<b>Organization:</b>	<b>Phone Number:</b>	<b>e-mail:</b>
Reese, Jim	COE	(503)808-3862	Jim.R.Reese@usace.army.mil
Richardson, Ann	Rep. David Wu's Office	(503)326-4901	ann.richardson@mail.house.gov
Riggs, Thron	Columbia River Bar Pilots	(503)325-2643	
Sheldon, Dick	Northern Oyster & CRCFA	(360)665-4886	
Siipola, Mark	COE	(503)673-3174	
Stevens, Steve	COE	(503)808-4768	
Swanson, Terri	WDOE	(360)407-6789	tswa461@ecy.wa.gov
Taylor, Kathy	CREST	(503)325-0435	crest@OregonVos.net
Tussing, Philip	Clatsop County GOP	(503)861-1688	philt@seasurf.com
Valentine, Christine	DLCD	(503)373-0050 x250	christine.valentine@state.or.us
Van Ess, Matt	CREST	(503)325-0435	crest@OregonVos.net
Vining, Rick	WDOE	(360)407-6944	rvin461@ecy.wa.gov
Waren, Robert	CREST	(503)325-0435	crest@OregonVos.net
Wilcox, Tom	Clatsop Republicans	(503)738-3515	wilcoxtd@seasyrf.net
Willis, Alan	Port of Portland	(503)731-7050	willia@portptld.com
Windsheimer, Rian	Sen. Smith's Office	(503)326-3386	Rian_Windsheimer@gsmith.senate.gov

# WELCOME

## Purpose of the Meeting

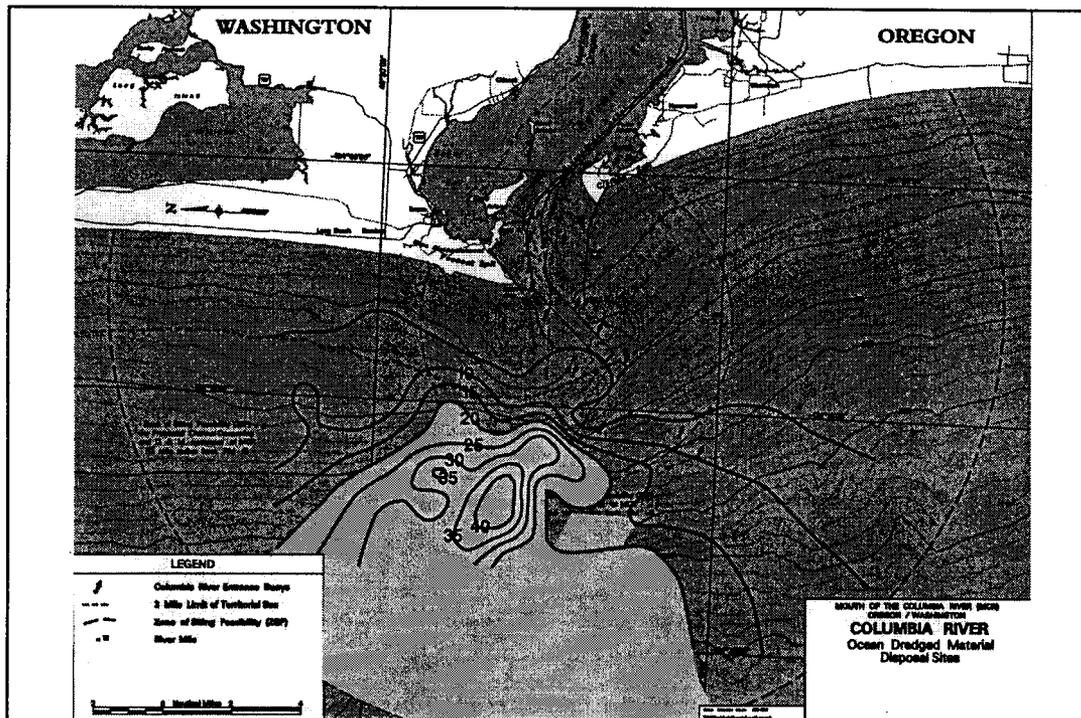
March 17, 1999 e-mail

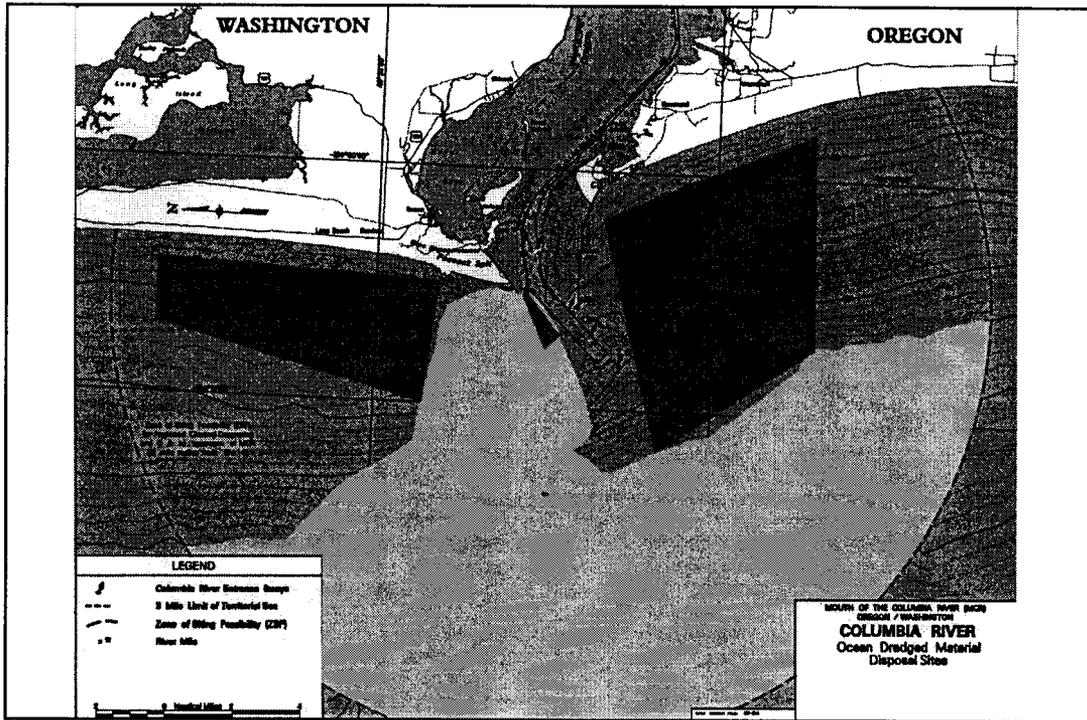
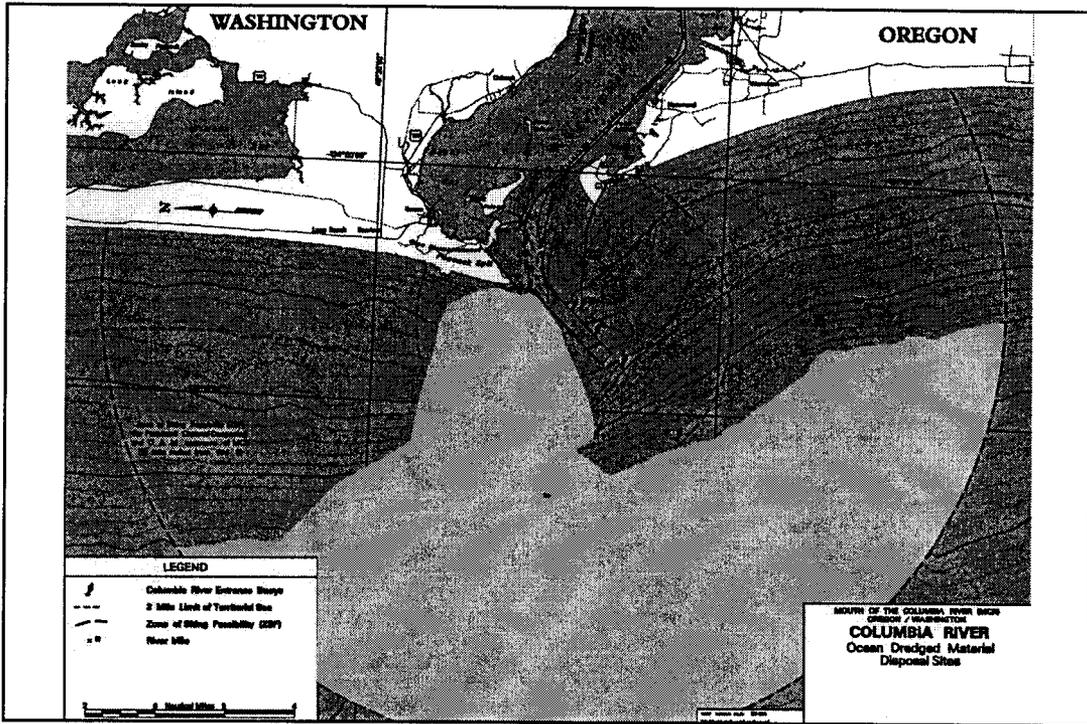
Discussion of the ocean disposal sites proposed in the DEIS and the comments received during the review process.

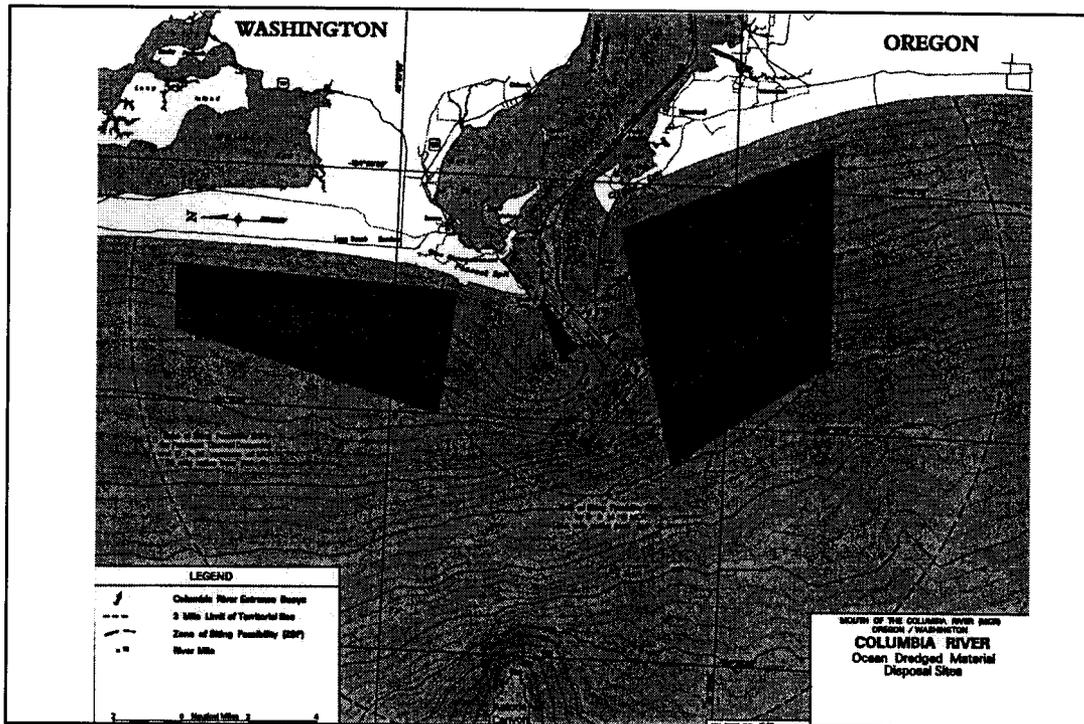
- How Working Group Input Was Used in Developing the Proposed Sites
- The Rational for Selecting the Proposed Sites
- Summary of Major Comments
- Options for Modifying the Proposed Sites

# Today's Agenda

- Introduction and Review to Process to Date
- Management & Monitoring Strategies
- Review of Crab Studies
- Break
- Open Discussion of Data
- Lunch
- Benson Beach Alternatives
- Discussion of Next Steps
- Break
- Continuation of Discussion
- Closing Remarks







## What We Heard

- Sites are too Big
- More Detailed Management Plan
- Nearshore 60 feet of Water or Less
- Use Deep Water and Limit the Extent of the Footprint
- Reconsider Candidate Site 8 or a Site Like It
- Continue to Consider Direct Placement on Benson Beach

# Management & Monitoring

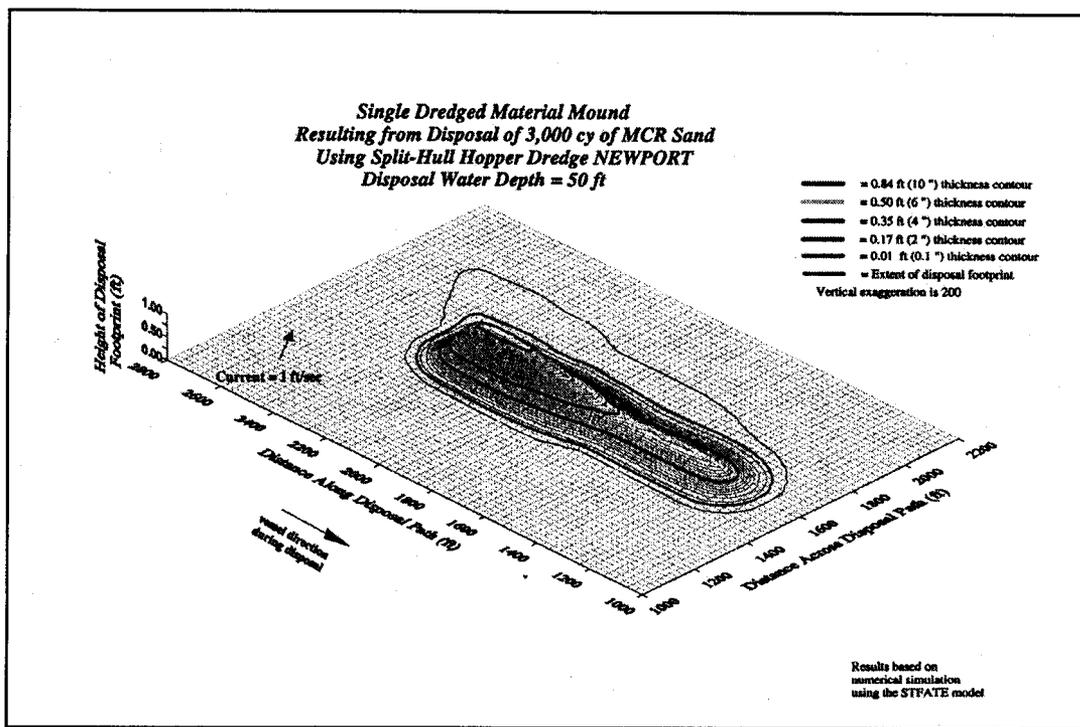
## Site Management and Monitoring

- Site Designation Alone does not Mean USE
- Management and Monitoring Plan Required by Law, Including Coordination
- Management of the Site(s) is Key to Minimizing Impacts and Conflicts with other Uses of the Ocean

## Site Management Objectives

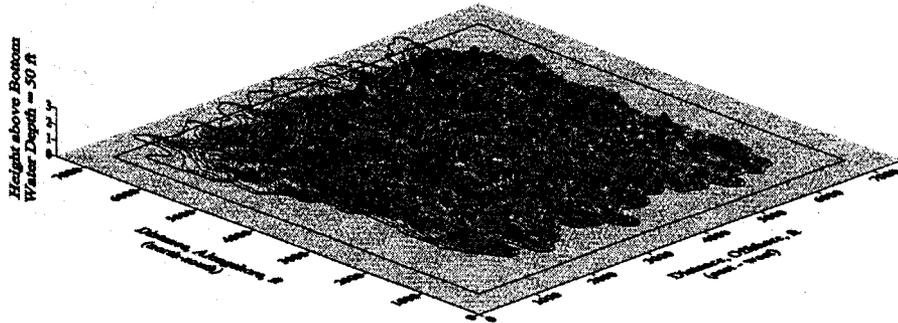
Safe and efficient disposal of dredge material while at the same time minimizing the impacts to coastal resources

- controlling wave height
- minimize impacts to marine resources
- safe and efficient use of hopper dredges
- prudent use of available funds
- minimize conflicts with other uses
- practical beneficial use of dredged material



### Predicted Bottom Accumulation of Dredged Material Placed in Nearshore "Cell"

Volume placed = 1,000,000 cy by the hopper dredge NEWPORT  
 Overall "Cell" size = 6,500 ft x 6,500 ft, dredged material placement restricted to inner 4,500 x 4,500 ft  
 Water depth = 50 ft



— = 0.84 ft (10") thickness contour  
 — = 0.01 ft (0.1") thickness contour

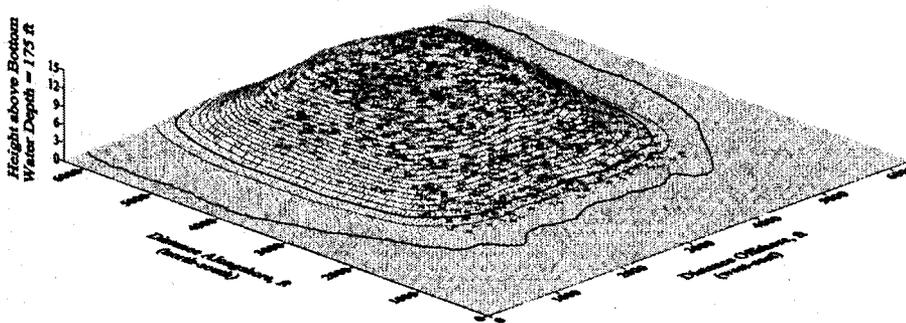
+ = single disposal event (333 total placed during 30 days)  
 — = outer "cell" boundary, 6500 ft x 6500 ft - area of active deposition

Results based on numerical simulation using the MDFATE model

vertical exaggeration is 350, maximum accumulation = 3.3 ft

### Predicted Bottom Accumulation of Dredged Material Placed in Offshore "Cell"

Volume placed = 4,500,000 cy by the hopper dredge NEWPORT  
 Overall "Cell" size = 5,300 ft x 5,300 ft, dredged material placement restricted to inner 3,300 x 3,300 ft  
 Water depth = 175 ft



----- = 10 ft (120") thickness contour  
 — = 0.84 ft (10") thickness contour  
 — = 0.01 ft (0.1") thickness contour

+ = single disposal event (1500 total placed during 60 days)  
 — = outer "cell" boundary, 5300 ft x 5300 ft - area of active deposition

Results based on numerical simulation using the MDFATE model

vertical exaggeration is 80, maximum accumulation = 15 ft

## One Management Option

1. 2 mcy into Expanded Site E and the North Jetty Site
2. 1 mcy Nearshore-South (3 feet accumulation)  
1 mcy Nearshore-North (3 feet accumulation)
3. Additional Material to Deep Water

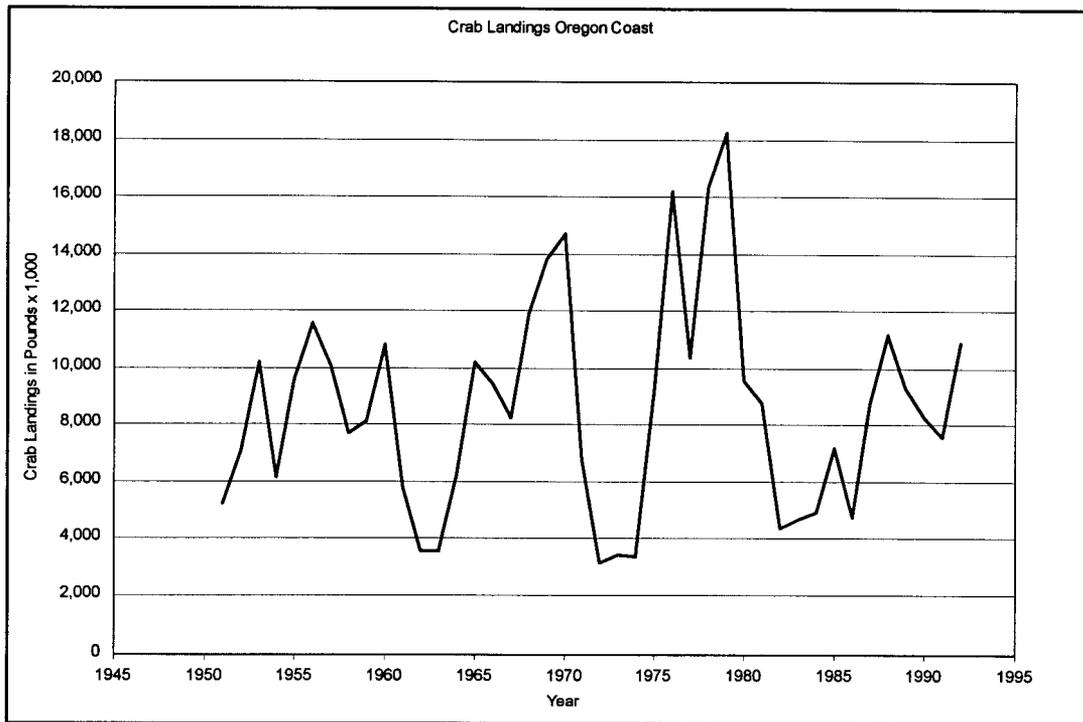
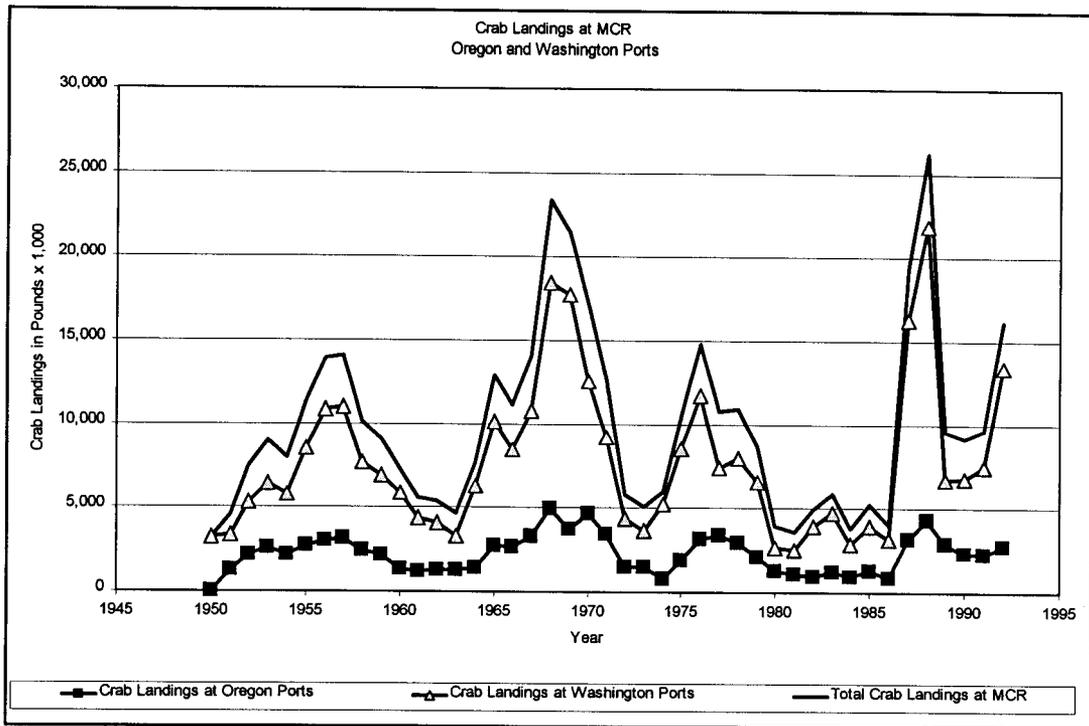
## Monitoring Plan

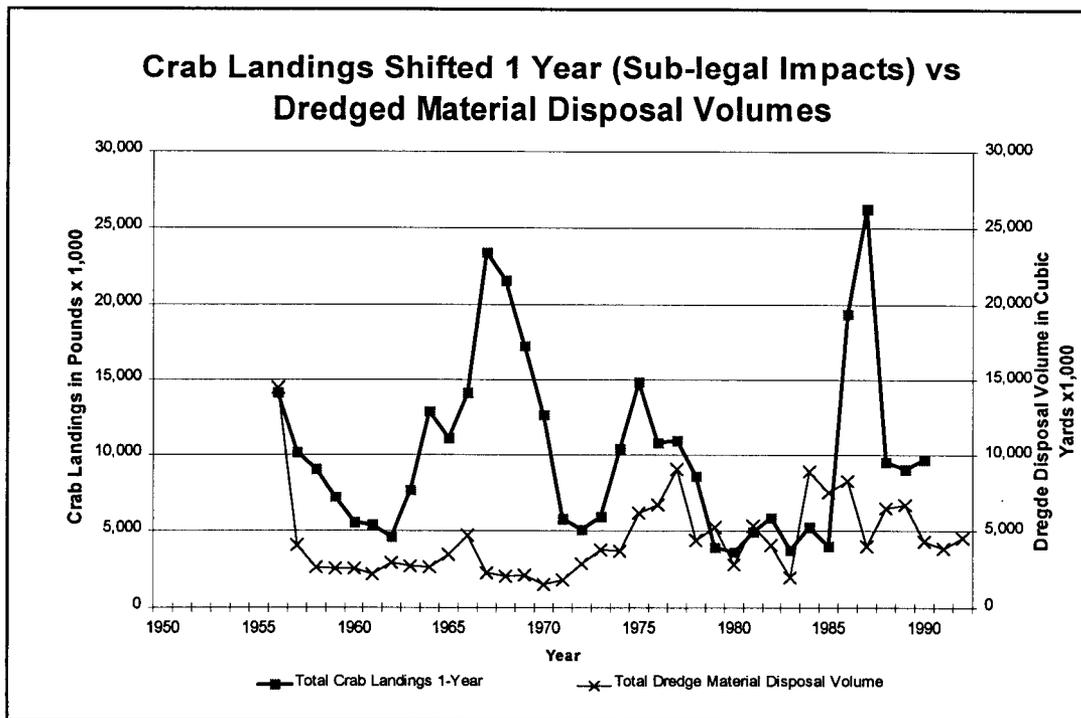
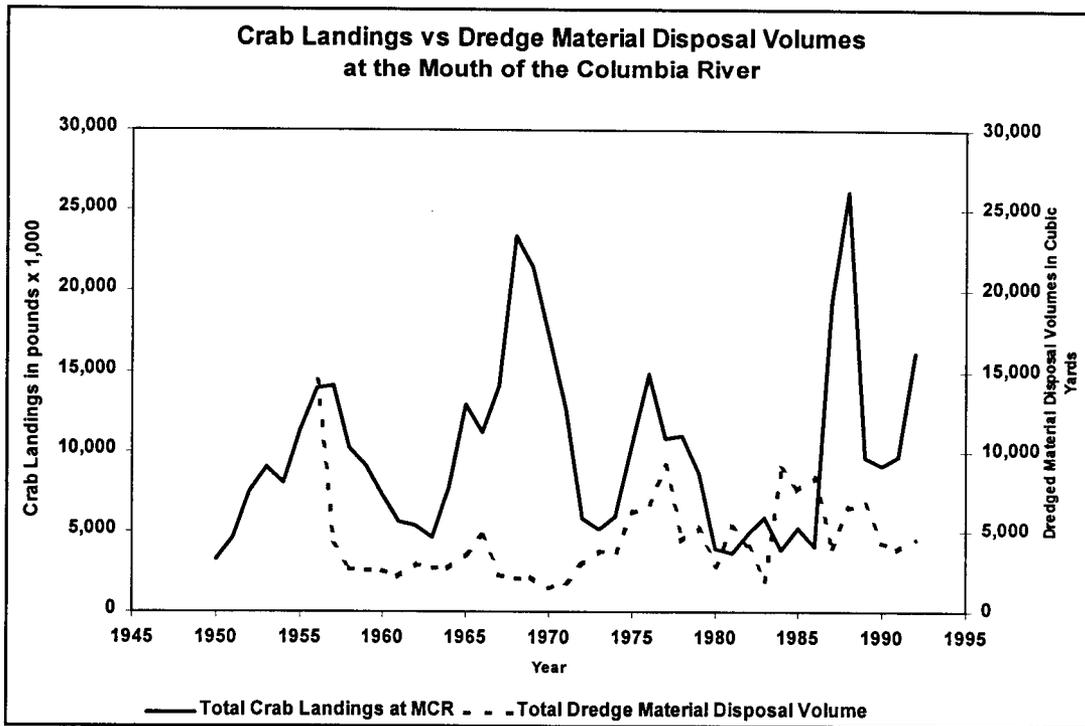
- Integral to Effective Management
- Tiered Approach Tied to Objectives
- Physical Monitoring Occurs Annually
- Higher Tiered Monitoring If Necessary
- Special Studies to Address Specific Questions

## Summary

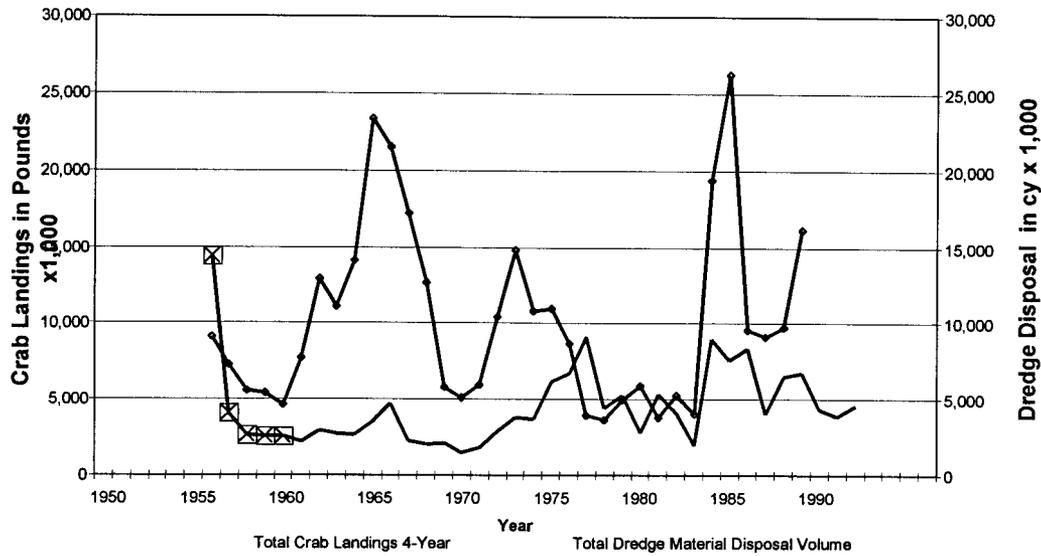
- Site Designation Alone does not Mean USE
- Management and Monitoring Plan Required by Law as well as Coordination
- Management of the Site(s) is Key to Minimizing Impacts and Conflicts with other Uses of the Ocean

## Review of Crab Studies

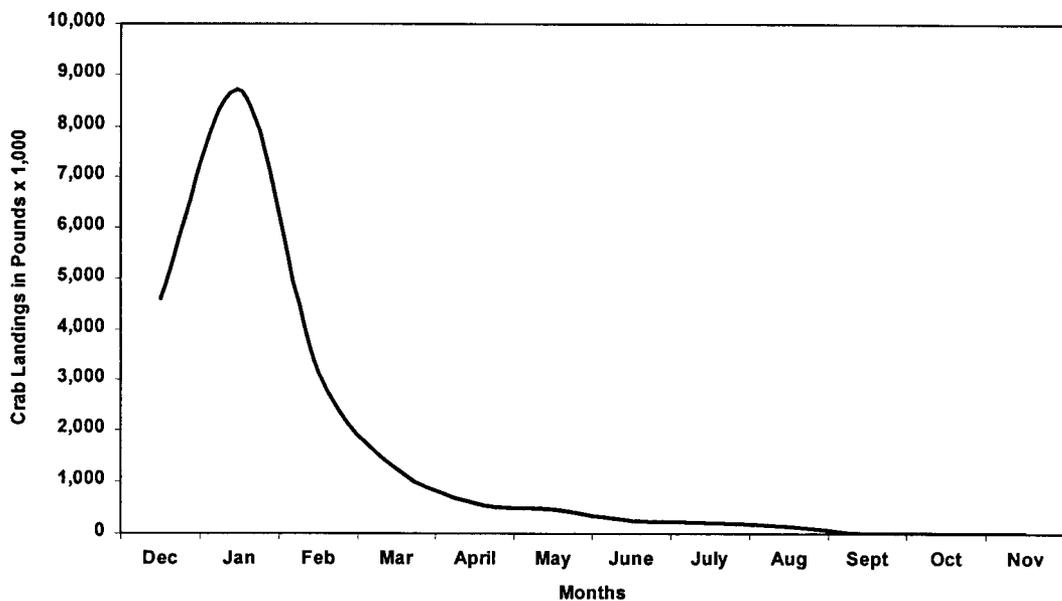




### Crab Landings Shifted 4 Years (YOY Impacts) vs Dredged Material Disposal Volumes



### Crab Landings for All Oregon Ports by Month in 1996.



**Battelle Disposal Test on Soft Shell Crabs  
<50 mm**

Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Total Number After 48 Hours	Survival Ratio	Percent Survival
2.4	5	3	3	4	4/5	80
4.2	14	11	11	11	11/14	79
6.6	10	9	9	9	9/10	90
10.2	11	10	10	10	10/11	91

**Battelle Disposal Test on Soft Shell Crabs  
50-100 mm**

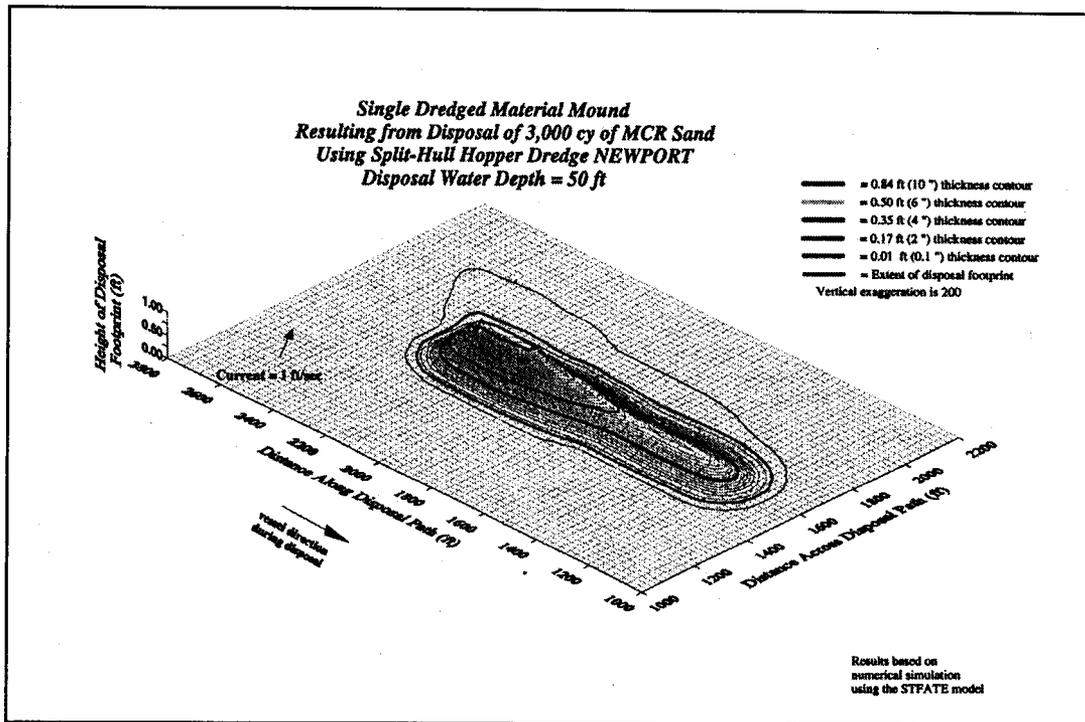
Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Total Number After 48 Hours	Survival Ratio	Percent Survival
2.4	6	6	6	6	6/6	100
4.2	10	6	6	6	6/10	60
6.6	6	3	3	3	3/6	50
10.2	11	5	5	5	5/11	45

### Battelle Disposal Test on Soft Shell Crabs >100 mm

Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Total Number After 48 Hours	Survival Ratio	Percent Survival
2.4	1	1	1	1	1/1	100
4.2	4	4	4	4	4/4	100
6.6	5	1	1	1	1/5	20
10.2	3	1	1	1	1/3	33

### Scripps Test on Disposal Impacts on Hard Shelled Crabs

Size Group of Crabs	Total Number After 48 Hours	Depth of Sediment (inches)	Number Tested	Number Immediately Visible After Test	Total Number After 24 Hours	Survival Ratio	Percent Survival
114-159mm	Wet 10.2	13	8	9	9	11/13	85
121-168mm	Dry 10.2	12	8	11	11	11/12	92
121-165mm	Wet 10.2	12	12	12	2	12/12	100



**Weighted Survival of Dungeness Crab Based on Percent  
Disposal Mound by Depth  
Disposal in 50 Feet of Water**

Sediment Depth (inches)	Percent of Disposal Area	Percent Mortality of <50mm crabs	Percent Weighted Mortality of <50mm crabs	Percent Mortality of 50-100mm crabs	Percent Weighted Mortality of 50-100mm crabs	Percent Mortality of >100mm crabs	Percent Weighted Mortality of >100mm crabs
6.0-10.2	8	10	0.8	55	4.4	74	5.9
3.6-6.0	10	16	1.6	40	4.0	0	0
<2.2	82	20	16.4	0	0	0	0
Weighted Average Mortality			18.8		8.4		5.9

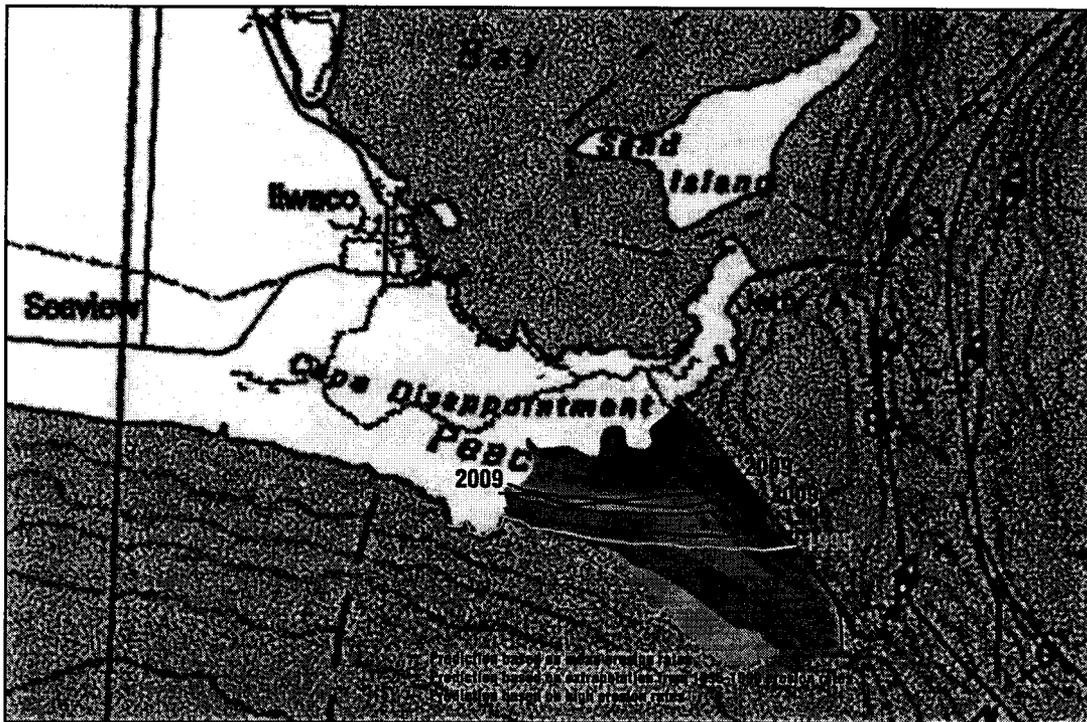
Weighted Survival of Dungeness Crab Based on Percent  
 Disposal Mound by Depth  
Disposal in 100 Feet of Water

Sediment Depth (inches)	Percent of Disposal Area	Percent Mortality of <50mm crabs	Percent Weighted Mortality of <50mm crabs	Percent Mortality of 50-100mm crabs	Percent Weighted Mortality of 50-100mm crabs	Percent Mortality of >100mm crabs	Percent Weighted Mortality of >100mm crabs
6.0-10.2	1	10	0.1	55	0.5	74	0.7
3.6-6.0	6	16	1.0	40	2.4	0	0
<2.2	93	20	18.6	0	0	0	0
Weighted Average Mortality			19.7		2.9		0.7

Weighted Survival of Dungeness Crab Based on Percent  
 Disposal Mound by Depth  
Disposal in 200 Feet of Water

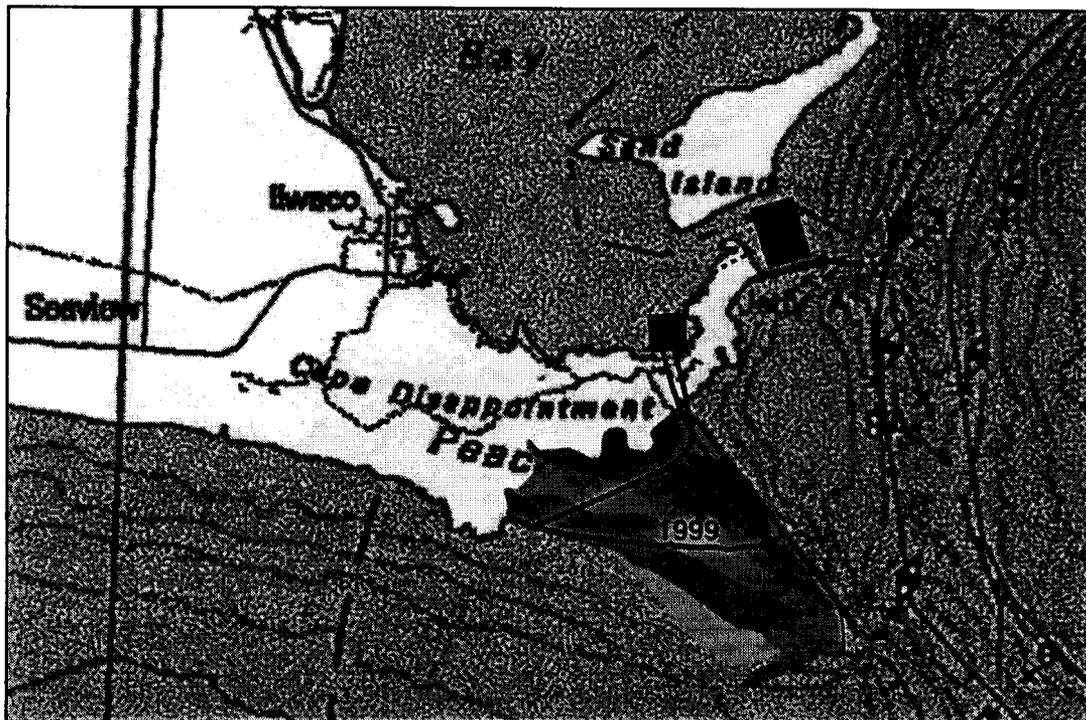
Sediment Depth (inches)	Percent of Disposal Area	Percent Mortality of <50mm crabs	Percent Weighted Mortality of <50mm crabs	Percent Mortality of 50-100mm crabs	Percent Weighted Mortality of 50-100mm crabs	Percent Mortality of >100mm crabs	Percent Weighted Mortality of >100mm crabs
6.0-10.2	0	10		55		74	0
3.6-6.0	0	16		40		0	0
<2.2	100	20	20	0	0	0	0
Weighted Average Mortality			20		0		0

# Benson Beach



## Benson Beach

- Requires Special Equipment to Place Material
  - Hopper Dredge Pump Ashore
  - Punaise Dredge (fixed in-place dredge)
  - Hopper-Sump-Pipeline from Baker Bay
- Disposal Capability 1/2 to 1 mcy/yr
- Disposal Would Interfere With Park Use
- Capacity on Benson Beach Estimated at 8 mcy
- Requires Cost-Sharing Partner



## Hopper Dredge Pump Ashore

- Requires Construction of an Access Channel and Turning Basin in Baker Bay (2 mcy)
- Hopper Dredge Not Currently Configured for Pump Ashore
- Takes Hopper Dredge Out of Production
- Requires 1-1/2 to 3 Hours to Pump Ashore

## Punaise Dredge (fixed in-place dredge)

- Requires Location Within 6,000 feet of Disposal Site or Added Cost for a Booster
- Experimental Technology Not Used in the US Yet
- Additional Information Required to Determine Suitable Location

## Hopper-Sump-Pipeline from Baker Bay

- Requires Construction of an Access Channel and Sump in Baker Bay (3.5-6.5 mcy)
- Requires Mobilization of a Pipeline Dredge

## Preliminary Cost Estimates

	<b>First Costs (One Time)</b>	<b>Mobilization (Annual)</b>	<b>Incremental Cost (cy)</b>
<b>Hopper Pump Ashore</b>	<b>\$7m plus \$1.6 m for configuration</b>		<b>\$2.60-\$3.90 (no booster)</b>
<b>Punaise</b>		<b>\$550k</b>	<b>\$2.50-\$3.50 \$3.20-\$4.40</b>
<b>Hopper- Sump- Pipeline</b>	<b>\$14-22 m for construction</b>	<b>400-500k</b>	<b>\$3.50</b>