COLUMBIA NEAR SHORE
SCIENCE AND POLICY WORKSHOP

I. Background

The Lower Columbia Solutions Group, a collaborative group of federal, state, and local leaders, has engaged a project team to explore the use of lower Columbia River maintenance dredge material to stem the depletion of the natural sand volumes in the near-shore environment off of the South Jetty of the Columbia River.

Studies indicate that there has been a significant loss of offshore sediment to the mid-continental shelf and near shore region offshore from the Clatsop Plains, resulting in greater wave energy being focused on the south jetty and the ocean shore. The long-term objective of a proposed supplementation of dredged sediments would be to keep these sediments in the littoral zone, rebuild the offshore sands to prevent further erosion of historic habitat, and better protect the jetty from the impacts of waves coming from the southwest.

The project team has identified an iterative approach to accomplishing this objective that will involve at least two demonstration projects. *The purpose of these projects is to demonstrate and evaluate the technical feasibility, effectiveness, and environmental impacts of dispersal methods likely to be used in the longer-term efforts to mitigate the erosion of near-shore sands off the south jetty of the Columbia.*

- A small scale (30,000 cubic yards) testing of the enhanced dumping method of dispersal, in summer 2005. The key objective of this study is to determine the feasibility of "thin-layer" dispersal of dredged sediments in the near-shore area.

- Subsequent demonstration, using larger volumes (150,000 cubic yards) to determine the degree and direction of migration of deposited sediments in the near-shore environment.

- Modeling and measurement of biological impacts and navigational safety (wave) impacts prior to any long-term large-scale dispersal of dredged sediments in the near-shore environment.

II. Scientific Questions

The scientific community can play an important role in addressing the depletion of near-shore sands off the Oregon and Washington coasts and in answering a number of questions that have been raised about both the demonstrations and the long-term project:

1. ***Current and Migration Measurement***

   If we put sand in the near-shore, where will it go? We will need to estimate the rate and direction of sand migration in this near-shore environment to know the degree to which the sand will build up and not simply migrate out to deeper water or move back into the shipping channel.

2. ***Navigational Safety***

   For navigational considerations we want to understand both current wave patterns and wave amplification impacts of a program to replenish the near-shore sands. There is not yet agreement on which wave amplification models will best serve the project.

3. ***Biological Impacts.***

   We will need to assess the potential impacts to both aquatic life and the benthic community of thin-layer disposal in the near-shore environment. What additional baseline information is needed to ensure proper post-placement evaluation? What actual methods should be used to monitor impacts to each biological community?

   Shellfish. Dungeness crab and razor clams are both abundant in the area, although razor clams are found closer in to shore. What are the natural conditions of the near-shore ocean bottom, and what rate of sediment accumulation can shellfish be expected to survive in this environment?

   Salmonids. What is the potential for turbidity to have impacts to juvenile salmon that may be in this area? What is the best way to evaluate the results of a demonstration project?

   Flatfish and other commercial/recreational fish species. What flatfish and other fish species are found in the area, and what concerns should we have about potential impact from this project?

   Benthic organisms. Smaller organisms living in the sediment of the near-shore environment, while likely acclimated to rapid changes in sediment from natural wave and current action, could be affected by accumulations of sediment. What is the best and most cost-effective way of measuring impacts to the benthic community?

   Marine birds. Marbled murrelets are found on the Clatsop Spit, though they are not in the area when the dispersal is likely to be taking place. Brown Pelicans are in the area, and we will need to assess potential impacts on them.