

**DRAFT**  
**ENVIRONMENTAL ASSESSMENT**  
**MOUTH OF THE COLUMBIA RIVER NORTH JETTY SAND BERM REPAIR**  
**PACIFIC COUNTY, WASHINGTON**

**INTRODUCTION**

The Mouth of the Columbia River (MCR) North Jetty is part of the MCR jetty system (Figure 1) and is located in Pacific County, Washington, near the communities of Ilwaco and Long Beach on the Long Beach Peninsula. The 2.5-mile long North Jetty was constructed by the U.S. Army Corps of Engineers (Corps) and completed in 1917. The MCR jetty system is vital to regional and international commerce. It functions to prevent migration of the outlet of the Columbia River, reduces dredging requirements, increases safety of vessel navigation between the Columbia River and Pacific Ocean, and allows for year-round shipping.

Structural degradation of the North Jetty (and the South Jetty and Jetty A) has accelerated in recent years because of increased storm activity and loss of sand shoal material upon which the jetty is constructed. In addition, Benson Beach on the north side of the North Jetty, which is accreted land formed as a result of jetty construction, has been receding gradually over the years with recession of the jetty head, exposing previously protected sections of the jetty at the beach line to storm waves. Repairs to sections of the North Jetty were made in 1965 and 2005. With intense winter storms during late 2007, further concerns arose when a connection was made between the ocean and the pre-existing scoured area along the north side of the North Jetty. A natural sand berm present on the upper part of the beach adjacent to the jetty was breached with these storms allowing storm water to fill a lagoon and allowing water to move through the inland portions of the jetty during tidal action. Plans for repair of the sand berm began shortly after the storm damage.

This public notice addresses a particular beneficial use for dredged material that is within the framework of the MCR Project, Regional Sediment Management at MCR, and the Lower Columbia Solutions Group collaborative efforts that are all ongoing in the Lower Columbia River. Sand placement using material from routine dredging in the Lower Columbia River is being planned for summer 2008 and environmental clearances are being obtained for a 5-year period for placement on the upper part of Benson Beach adjacent to the North Jetty for the purpose of protecting the North Jetty. In 2006, the Corps obtained ESA clearances for another beneficial use of dredged material and prepared a draft environmental assessment which was public noticed on June 5, 2006. This addressed placement of up to 1,000,000 cubic yards of dredged material per year for up to 5 years on Benson Beach for the purpose of littoral drift restoration. The Public Notice for littoral drift restoration was issued on June 5, 2006 under Public Notice Number CENWP-PM-E-06-02. No material has been placed to date for littoral drift restoration, however. The project outlined here, which could place up to 125,000 cubic yards per year, lies essentially within the spatial bounds of the littoral drift restoration

project for which endangered species act clearances have been obtained, except that placement will occur closer to the jetty, within 100 feet.

There has been much work in recent years on exploring new beneficial uses and disposal locations for material dredged from the MCR Project. Much scientific information has been obtained as part of the Regional Sediment Management work that was done in the area in 2003-2005 and presented at a workshop in 2006. Proceedings from this workshop are available on the Portland District website. Important milestones have occurred including two workshops sponsored by the Lower Columbia Solutions Group: a two day Science/Policy Workshop held in Portland, Oregon, in May 2005 and a two day Physical Science and Policy workshop in July 2007 in Ilwaco, Washington. Proceedings from these workshops can be obtained from the Lower Columbia Solutions Group Website. A larger collaborative Regional Sediment Plan has also been started by the Lower Columbia River Estuary Partnership under the auspices of the Lower Columbia Solutions Group. Placement of material on Benson Beach is one of three areas recommended for future investigation and action at the conclusion of the July 2007 workshop.

There are many ways that dredged material can be used for beneficial uses, but often obtaining authorizing legislation and funding can be challenging. To address these and other components, a reference document entitled "Identifying, Planning and Financing Beneficial Use Projects Using Dredged Material" was published by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers in October of 2007. A companion document entitled "the Role of the Federal Standard in the Beneficial Use of Dredged Material from U.S. Army Corps of Engineers New and Maintenance Navigation Projects" was also released concurrently. These documents are available upon request.

## **PURPOSE AND NEED FOR ACTION**

An area of sand accumulation on the upper beach near the North Jetty was breached during winter storms late in 2007, now making the pre-existing scoured area along the north side of the North Jetty more susceptible to connection with the ocean. This connection was made during 2007. The prospects of future connections between the ocean and the scoured area is of concern because of the potential for weakening of the jetty with future storms.

**Purpose:** The purpose of the Preferred Alternative is to stabilize the upper beach adjacent to the North Jetty.

**Need:** The need of the Preferred Alternative is to alleviate the risk of further storm damage to the North Jetty with future storms.

The proposed berm is considered a temporary fix until a more permanent solution can be implemented. The Corps is currently investigating options for major rehabilitation of the MCR jetty system.

## **PREFERRED ALTERNATIVE AND OTHER ALTERNATIVES**

### **Preferred Alternative:**

The Corps proposes to pump up to 125,000 cubic yards of sand onto Benson Beach for a minimum of 1 year over a 5-year period from 2008-2012, but may pump up to this amount of sand during any or all of the 5 years as necessary. Sand would be obtained from routine dredging operations at the MCR and would be pumped out of a hopper dredge from the river side of the MCR North Jetty, through a pipeline (18- to 24-inch diameter) over the jetty, and onto Benson Beach. Sand would then be moved with earth-moving equipment to repair the sand berm at an elevation higher than Mean Higher High Water (MHHW) [from approximately +7.5 ft. Mean Lower Low Water (MLLW) to +20 ft. MLLW]. Several thousand cubic yards of sand may also be obtained from the western-most parking lot (sand that was deposited there during the recent storms). No sand will be trucked onto the site. A fence to aid in stabilization of the sand berm is planned to be installed by Washington Department of Ecology.

The work would take approximately three weeks per year to accomplish and take place between July 15 – Sept. 15 of at least one year during the five year period of 2008 - 2012. Work is currently planned for 2008. All work for berm construction below MHHW would occur within the spatial bounds of work described for littoral drift restoration and within the limitations set forth in the Biological Opinion issued for littoral drift restoration by NOAA Fisheries dated Feb. 1, 2007 (Tracking Number 2006/00219), with the exception that sand would be pumped onto the beach as close as 100 ft. north of the North Jetty. Final placement of the berm will be entirely above MHHW.

A temporary sand berm would also be constructed in order to retain sand on the beach during pump-out; otherwise, much of the sand would immediately be lost to the ocean. This temporary berm would be approximately 5 ft. high, 12 ft. wide at the base, and would extend northward along the beach over the entire length of the sand pump-out area. It would be built gradually as pump-out continues northward along Benson Beach and would be created from existing beach sand that would be pushed up by earth-moving equipment from the upper part of the beach. The temporary berm would be constructed at variable elevations between approximately +4 MLLW to +12 MLLW (where MHHW is equivalent to approximately +7.5 MLLW). The part of the beach used to create the temporary berm would be restored by earth-moving equipment to pre-project topography upon completion of the project, as sand from the temporary berm is spread over the upper part of the beach. Three sand hummocks would be constructed 2-4 ft. above the finished grade of sand fill to reduce the amount of wind blown sand that could be transported over the North Jetty. The attached 4 figures detail the proposed work.

### **No Action Alternative:**

The No Action Alternative could jeopardize the structural integrity of the North Jetty in the vicinity of Benson Beach, as the absence of a sand berm on the upper part of the beach adjacent to the north jetty would result in a greater likelihood of a connection being

made during storm events between the ocean and the pre-existing scoured area on the north side of the North Jetty.

With storm action in 2007, a small amount of wetland that fringed the western end of the pre-existing scoured area was lost as it was covered with sand. It is possible that future storms could impact fringe wetlands in this area with the no action alternative, although loss would likely be minimal.

Under the No Action Alternative, the dredged material planned for disposal on Benson Beach would be disposed of at permitted disposal site(s) including the Shallow Water Disposal Site off the tip of the North Jetty; the Deep Water Disposal Site located approximately 6 miles offshore from the tips of the North and South Jetties, and the North Jetty Disposal Site located to the south of the jetty.

#### **Rock and Sand Berm Alternative:**

This alternative involves placement of a rock berm in combination with sand fill on the upper part of Benson Beach. The structure would project 200 feet northward from the jetty, and perpendicular to it. Sand would be pumped, as with the Preferred Alternative.

This alternative would result in additional time requirements to produce design documents and obtain required approvals. While considering the timeframe associated with in-water work requirements, this alternative may preclude repair from occurring during 2008. The area is currently considered very vulnerable to storm action and it is desired to repair the berm before potentially threatening upcoming winter storms.

#### **Sand Berm Repair with Overland Haul of Sand Alternative:**

This alternative involves overland import of sand via trucking to the site. Sand would be end dumped above MHHW and then spread by earth-moving equipment to the final placement locations above MHHW (same locations as in the Preferred Alternative).

For this alternative, sand would be obtained at a nearby quarry. This alternative would result in heavy truck traffic through Ilwaco, Washington and Cape Disappointment State Park during heavy use time (summer) for the park. Assuming 24 cubic yards of sand hauled per truck, approximately 5,200 round trips would be required. Also, this alternative does not involve beneficial use of dredged material and involves more disturbance to park visitors.

#### **AFFECTED ENVIRONMENT**

Unlike littoral drift restoration mentioned above and previously addressed through various environmental documents, dredged material placed on Benson Beach for the Preferred Alternative of this berm repair project is designed to remain on the beach, although it is predicted that 20-25% (25,000 to 31,250 cubic yards) of material may enter

the ocean. Construction of the temporary berm is incorporated into the project to retain pumped material on Benson Beach.

### *Safety*

To ensure safety for citizens using Benson Beach, the area around the disposal pipe, pump head, and where the earth-moving equipment will be working will be cordoned off. Contract personnel will be present at the disposal location to be sure that no unauthorized persons cross the construction fencing into the disposal and construction zone. This project would require the dredge to work near the jetty and various buoys while in operation. All standard Best Management Practices (BMPs) for disposal operational safety will be applied to the project.

### *Vegetation*

Sparse grasses and forbs occur on Benson Beach above MHHW where sand will be placed. Placement of sand will temporarily alter habitat to unvegetated sand conditions. It is expected that the area will naturally revegetate. Impacts would be similar for all alternatives considered, except the No Action.

### *Fish and Wildlife*

Washington Department of Fish and Wildlife (WDFW) (Bob Burkle) indicated that no surfsmelt or other baitfish spawning beds are present in the area of Benson Beach because of the unstable nature of the environment. The nearest surfsmelt spawning bed is located just south of the Westport South Jetty, many miles north of the project site. There are also no sandlance or herring spawning areas at Benson Beach. Shorebirds have been noted on the shoreline and in the surf zone north of the jetty feeding on near-surface forage organisms or resting in and near the edge of the surf zone. Disposal on Benson Beach would temporarily displace shorebirds, although they would not have to move far to avoid the active construction zone. At the dredge end of the discharge pipe there would be no effect to ground fish in the area.

The MCR jetties are designated Essential Fish Habitat (EFH) for several species of salmon, groundfish, and coastal pelagic species (see Table 1). Some use the MCR as a migratory corridor to rearing areas in the bays and intertidal areas that have large concentrations of food organisms. Disposal on Benson Beach with the Preferred Alternative or the Rock and Sand Berm Alternative should have no effect or very little effect on EFH species or their habitat because material will be disposed up on the beach, out of water. Construction of the temporary berm along the entire length of pumpout is intended to keep disposed material on the beach and out of the ocean. The temporary berm could be repaired quickly if signs of potential failure appear. The temporary berm is expected to retain approximately 75-80% of material pumped onto Benson Beach. The 20-25% of material that may enter the ocean would do so at the northern end of the temporary berm. Material that would enter the ocean would be comprised of a very high percentage of sand. It is expected that this material will settle out quickly. Also, any material entering the ocean will enter it in a high energy surf environment, where sand naturally becomes suspended.

Table 1. Summary of EFH species and potential life stage use in the vicinity of the proposed project (species with potential EFH impacts are indicated in bold type).

<u>Salmon</u>	Egg	Larvae	Young Juvenile	Juvenile	Adult	Spawning
<b>Coho salmon</b>				X	X	
<b>Chinook salmon</b>			X	X	X	
<u>Coastal Pelagic Species</u>	Egg	Larvae	Young Juvenile	Juvenile	Adult	Spawning
Northern anchovy	X	X		X	X	
Pacific sardine	X	X		X	X	
Pacific mackerel	X	X		X	X	
Jack mackerel					X	
Market squid	?	?	?		X	?
<u>Groundfish Species</u>	Egg	Larvae	Young Juvenile	Juvenile	Adult	Spawning
California Skate	X		X		X	X
Soupin Shark	X		X		X	X
<b>Spiny Dogfish</b>	X		X	X	X	
Ratfish			X		X	X
<b>Lingcod</b>	X	X	X	X	X	X
<b>Cabezon</b>	X	X	X	X	X	X
<b>Kelp Greenling</b>	X	X	X	X	X	X
Pacific Cod	X	X	X		X	X
<b>Pacific Whiting (Hake)</b>	X	X	X		X	
Sablefish				X		
<b>Butter Sole</b>					X	X
<b>Curlfin Sole</b>					X	X
<b>English Sole</b>	X	X	X		X	X
<b>Flathead Sole</b>			X			
Pacific Sanddab	X	X	X		X	
<b>Petrale Sole</b>			X		X	
<b>Rex Sole</b>			X		X	
<b>Rock Sole</b>	X		X		X	X
<b>Sand Sole</b>			X		X	X
<b>Starry Flounder</b>	X	X	X		X	X
<b>Black Rockfish</b>			X		X	
<b>Brown Rockfish</b>	X	X	X		X	X
China Rockfish						
Copper Rockfish	X	X	X	X	X	X
Quillback Rockfish	X	X	X	X	X	X
Vermilion Rockfish			X			

*Benthic Organism and Dungeness crab impacts*

The intensity of waves and currents north of the North Jetty severely limits the extent of colonization by benthic and epibenthic organisms. According to WDFW, there are no razor clam beds for several miles from Benson Beach due to its unstable nature. WDFW also stated that Dungeness crab are rarely, if ever found in the surf zone on this beach (B. Burkle, WDFW, pers. Comm.).

Dan Ayres, WDFW Razor Clam Manager for the Washington Coast, said that to his knowledge, spanning close to 30 years, no formal assessments of benthic invertebrates have been conducted along Benson Beach, including razor clam surveys, which are

regularly done several times a year at several points north of North Head. It was determined long ago that there are too few razor clams at Benson Beach to manage, and although the area is open for digging, and a few people do dig there, there are too few harvested to expend resources to count them. The area was visually assessed by WDFW personnel during the barge Nestucca oil spill, which occurred in 1988. At that time they found virtually no razor clams or other invertebrates or fish.

Each alternative would have no effect on benthic organisms at the dredge end of the disposal pipe. It is possible that the 2 water intake openings (through which water is drawn to create the sand/water slurry necessary to pump the material to shore) would entrain some crabs moving through the water column near the intake grate with the Preferred Alternative and the Rock and Sand Berm Alternative. This water intake occurs near the bottom of the hopper, which when full is located in 28-22 feet of water, depending on which dredge is used. The intake openings rise with the emptying hopper dredge as the sand/water slurry is pumped ashore.

### *Threatened and Endangered Species*

Federally listed populations [or Evolutionarily Significant Units (ESUs)] of fish, marine mammals, marine reptiles, and wildlife under the Endangered Species Act (ESA) are known to occur in the general vicinity of the proposed project site (Table 2).

Run or Species	Scientific Name	Status	Effect	CH	CH Effect
Chinook salmon (Upper Col. R. Spr.)	<i>Oncorhynchus tshawytscha</i>	E	L	Yes	NE
Chinook salmon (Snake River Fall)	<i>Oncorhynchus tshawytscha</i>	T	L	Yes	NE
Chinook salmon (Snake R. Spr. and Sum.)	<i>Oncorhynchus tshawytscha</i>	T	L	Yes	NE
Chinook salmon (Upper Willamette River)	<i>Oncorhynchus tshawytscha</i>	E	L	Yes	NE
Chinook salmon (Lower Columbia River)	<i>Oncorhynchus tshawytscha</i>	E	L	Yes	NE
Steelhead (Snake River Basin)	<i>Oncorhynchus mykiss</i>	T	L	Yes	NE
Steelhead (Middle Columbia River)	<i>Oncorhynchus mykiss</i>	T	L	Yes	NE
Steelhead (Upper Willamette River)	<i>Oncorhynchus mykiss</i>	T	L	Yes	NE
Steelhead (Lower Columbia River)	<i>Oncorhynchus mykiss</i>	T	L	Yes	NE
Steelhead (Upper Columbia River)	<i>Oncorhynchus mykiss</i>	T	L	Yes	NE
Chum salmon (Columbia River)	<i>Oncorhynchus keta</i>	T	NL	Yes	NE
Sockeye salmon (Snake River)	<i>Oncorhynchus nerka</i>	E	L	Yes	NE
Coho salmon (Lower Columbia River)	<i>Oncorhynchus kisutch</i>	T	L	No	
Steller sea lion	<i>Eumetopias jubatus</i>	T	NE		
Blue whale	<i>Balaenoptera musculus</i>	E	NE		
Finback whale	<i>Balaenoptera physalus</i>	E	NE		
Sei whale	<i>Balaenoptera borealis</i>	E	NE		
Sperm whale	<i>Physeter macrocephalus</i>	E	NE		
Humpback whale	<i>Megaptera novaeangliae</i>	E	NE		
Right whale	<i>Balaena glacialis</i>	E	NE		
Loggerhead sea turtle	<i>Caretta caretta</i>	T	NE		
Green sea turtle	<i>Chelonia mydas</i>	T	NE		
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	NE		
Pacific Ridley sea turtle	<i>Lepidochelys olivacea</i>	T	NE		
Brown pelican	<i>Pelicanus occidentalis</i>	T	NL		
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	T	NL		
Marbled murrelet	<i>Brachyramphus marmoratus m.</i>	T	NE		
Short-tailed albatross	<i>Phoebastria albatrus</i>	E	NE		
Columbian white-tailed deer	<i>Odocoileus virginianus leucurus</i>	E	NE		
Oregon silverspot butterfly	<i>Speyeria zerene hippolyta</i>	T	NE		

T = Threatened E = Endangered L = Likely to adversely affect NL = Not likely to adversely affect NE = No Affect

The Corps is conducting Endangered Species Act (ESA) consultations under Section 7 of the Act with the U.S. Fish and Wildlife Service and National Marine Fisheries Service. The BAs describe the project impacts to ESA-listed species.

The Corps anticipates No Effect from the proposed project for Steller sea lion, Blue whale, Finback whale, Sei whale, Sperm whale, Humpback whale, Right whale, Loggerhead sea turtle, Green sea turtle, Leatherback sea turtle, Pacific Ridley sea turtle, Columbian white-tailed deer, Oregon Silverspot butterfly, or the Marbled Murrelet. These species are either highly mobile, geographically separate from the project area but within Pacific or Waikikum Counties, or in habitats adjacent to but not within the project footprint which will not be disturbed by the Preferred Alternative. The Preferred Alternative, as well as the Rock and Sand Berm Alternative and Overland Haul of Sand Alternative, May Effect but is Not Likely to Adversely Affect brown pelican and western snowy plover. Brown pelicans are expected to be in the vicinity of the project, as post-breeding dispersers from the south, and may be flushed from perching areas such as the jetty. Western snowy plovers may be in the vicinity of the project but are not expected. If present, they could be flushed from beach areas during construction. For both species, suitable habitat would be available nearby. Under the Overland Haul of Sand Alternative, there could be impacts to nesting marbled murrelets (Federally-listed), but under this alternative trucking activity would not be allowed between 2 hours before sunset and 2 hours after sunrise to eliminate disturbance to nesting murrelet pairs during times when they are sensitive to noise.

Adult salmonids use the lower river principally as a migration corridor to spawning areas in the upper basin and tributaries. They are actively migrating and normally do not spend any time in the lower river resting or feeding. Chum salmon (Lower Columbia River) and steelhead (Lower Columbia River) populations spawn in tributaries to the Columbia River, and chinook salmon (Lower Columbia River) spawn in the mainstem Columbia River in gravel of appropriate size. No spawning would occur in the vicinity of the proposed project area because of lack of tributaries and appropriate sized gravels.

Juvenile salmonids occur in the lower river during their out-migration to the ocean. Juveniles that have already become smolts are present in the lower river for only a short time period. Juveniles that have not become smolts such as chinook sub-yearlings spend extended periods of time rearing in the lower river. They normally remain in the lower river or estuary until fall or the following spring when they become smolts and then migrate to the ocean. Rearing occurs primarily in the shallow backwater areas.

The project would start on or after July 15 and all work would be completed by September 15 – the time period specified by ESA coordination and dungeness crab migratory timing. Migratory adult salmonids that could be entering the Columbia River in the vicinity of the proposed project during this time include chinook salmon (Snake River fall run and Lower Columbia River fall run), and sockeye salmon (Snake River).

Juvenile fish that could occur in the project vicinity from July 15 through September 15, as fish migrating to the ocean or rearing in the estuary include all ESUs listed above with



the exception of chum salmon (Columbia River). Juvenile chum salmon out-migrate during spring, earlier than the start date of the proposed project, and are not expected to be in the vicinity during the timeframe of the work.

Water and sand entering the ocean from the north end of the temporary berm on Benson Beach is expected to have no impact on listed salmonids as they are not typically found in the surf zone as adults or juveniles and because they are very mobile and would be expected to avoid the area during disposal.

The Preferred Alternative, as well as the Rock and Sand Alternative, has the potential to have some impact on ESA-listed juvenile salmonids because of the 2 water intake openings which draw in water to create a slurry of sand and water for the pump ashore activity. The intakes for the hopper dredges are located one on each side near the bottom of the dredge. When the dredge is fully loaded, the intake openings are located between 20 and 28 feet deep depending on which hopper dredge is used. The water intakes draw water at a speed of 0.5 to 1.0 ft per second. There is expected to be a crossing flow (motion of ambient water column passing the intake) of 0.5 to 2.0 ft/sec. Adult salmonids would most likely be able to avoid or resist the force of the intake suction. The hopper dredge rises in the water as the hopper is emptied. Depth of the empty dredge is from 13 to 20 feet deep. The intake openings on each side of the hopper are 24 to 36 inches in diameter. It should be noted that the duration of pumping is approximately 30 to 60 minutes and would occur at intermittent intervals up to 6 times a day.

Within the project vicinity, critical habitat for salmonids includes the Columbia River from a straight line connecting the west end of the MCR South Jetty and the west end of the MCR North Jetty upriver. No impacts to critical habitat would result from implementation of any of the alternatives considered.

#### *Cultural Resources*

There are no recorded historic properties within the immediate project area. The project area has been so extensively modified by modern development that little likelihood exists for the proposed project to impact any undisturbed historic property.

Adjacent to the project site is the Cape Disappointment State Park. A May 2003 Cultural Landscape Report for the Cape Disappointment State Park area provides a broad overview of the wide array of historical resources at the Park, including military structures, lighthouses and cultural landscapes. It identifies four categories of cultural landscapes: Historic Sites, Historic Designed Landscapes, Historic Vernacular Landscapes, and Ethnographic Landscapes. It also identifies the Park as a single cultural landscape with multiple periods of significance and component landscapes (Washington State Parks & Recreation Commission 2005). However the only portion of the project in or near the park is the beach disposal site. The disposal activity should have no impact on the cultural resources in the adjacent park. The existing substrate would be disturbed with creation of the temporary berm and movement of earth-moving equipment. The part of Benson Beach to be disturbed is highly erosive beach and not near any known cultural resource sites.

### *Water Quality*

Implementation of the Preferred Alternative, as well as the Rock and Sand Berm Alternative, would only cause water quality impacts where discharged material enters the ocean at the north end of the temporary berm. Turbidity is expected to be minimal because the material is sand with only a small amount of fines and is expected to settle to the bottom quickly where it would subsequently be moved with the waves and currents as is all beach sand. Material would enter the ocean in a high energy (surf zone) environment where sand naturally suspends and settles. The Overland Haul of Sand Alternative would not involve any material entering the ocean during construction.

### *Air Quality and Noise*

Disposal of material on Benson Beach under the Preferred Alternative and the Rock and Sand Berm Alternative, would introduce noise near the discharge end of the pipe due to the discharge spray. Noise would also be caused by the use of heavy earth-moving equipment (especially the backup alarms) to spread the sand under all alternatives except the No Action. It is likely that the noise would be muted by the sound of the surf to some degree. With the restricted access near the disposal pipe, there should be little or no human activity in the vicinity of the work.

There would be a temporary and localized reduction in air quality during implementation of the Preferred Alternative, as well as the Rock and Sand Berm Alternative, due to emissions from the dredge. Noise would also be generated under all alternatives except the No Action from the earth-moving equipment on Benson Beach. These impacts would be minor and temporary in nature, and would cease once the activity is completed. Noise would be generated from overland haul of material by trucks through Cape Disappointment State Park under the Overland Haul of Sand Alternative.

### *Utilities and Public Services*

NO EFFECT

### *Land Use*

NO CHANGE

### *Recreation*

During the process of disposal on Benson Beach there will be no access to the water's edge for the entire length of the area of pump-out. The area will be only temporarily closed to public use. The length of time the beach and jetty will be inaccessible to the public under any of the action alternatives would likely not exceed several weeks. The placement of material on Benson Beach could occur during one or more summers for the five years (2008-2012) that environmental clearances are being obtained.

### *Hazardous, Toxic, and Radioactive Waste*

NO EFFECT

### *Aesthetics*

The impacts to aesthetics are similar to those for recreation. The beach placement pipe and construction activity related to the management of the discharged material will have the most significant effect on aesthetics, temporarily replacing a beach environment with a construction zone environment.

## **ENVIRONMENTAL EFFECTS**

### **Preferred Alternative:**

People will not be allowed access to the project area during construction because of safety concerns. The work is projected to last approximately 2 weeks. Fishermen will not be able to access the North Jetty during construction (fishermen are discouraged from fishing from the North Jetty at any time because of safety concerns). Camp sites near Benson Beach are located north of the northern bound of the project area and much available beach for recreation is available north of the project. Earth-moving equipment will traverse through the park during the heavy summer use time, but this will be minimal as all equipment will be stored on-site at the western-most parking lot near Benson Beach. This parking lot has not been available for use because it is covered with sand and access to it has been prevented by the installation of a gate on the access road to it since influx of sand with winter storms in 2007. Noise will be generated from pump out and equipment on the beach, but since people will be prohibited from entering the project area, noise impacts to people using other parts of the park are expected to be minimal. Aesthetics will be altered temporarily from a beach environment to a construction environment, but much beach for recreation is available to the north of the construction area.

It is possible that the 2 water intake openings (through which water is drawn to create the sand/water slurry necessary to pump the material to shore) would entrain some dungeness crabs and juvenile fish, including juvenile Federally-listed salmonids, moving through the water column near the intake grate with the Preferred Alternative. Disposal on Benson Beach would temporarily displace shorebirds, likely including the Federally-listed brown pelican, although they would not have to move far to avoid the active construction zone. Minor and temporary impacts to vegetation are expected from placement of sand on top of existing vegetation. Vegetation is sparse, however, in the area of sand placement and there are no Federally-listed plants that would be impacted. Much of the vegetation on the upper beach is the introduced European beachgrass.

No impacts to cultural resources, utilities and public service, land use and hazardous, toxic, and radioactive waste are expected.

### **No Action Alternative:**

Under the No Action Alternative, there would be no impacts discussed under the above section on Affected Environment, but since the area of sand accumulation on the upper beach near the North Jetty was washed out during winter storms late in 2007, there is

now a greater probability of further connections being made between the pre-existing scoured area along the north side of the North Jetty and the ocean. The prospects of future connections between the ocean and the scoured area is of concern because of the potential for weakening of the jetty with future storms. Making emergency repairs to the North Jetty itself in the future would likely be more expensive and possibly more environmentally damaging than correcting the situation as soon as possible.

**Rock and Sand Berm Alternative:**

Potential impacts resulting from this alternative are identical to impacts that would result from implementation of the Preferred Alternative. This alternative may result in a berm that would be more resistant to wave action than the Preferred Alternative. But the Rock and Sand Berm Alternative was considered only briefly as time requirements to produce design documents and obtain required approvals, while considering the timeframe associated with in-water work requirements, would have precluded repair from occurring during 2008. The area is currently considered very vulnerable to storm action and it is desired to repair the berm before potentially threatening upcoming winter storms.

No impacts to cultural resources, utilities and public service, land use and hazardous, toxic, and radioactive waste are expected.

**Sand Berm Repair with Overland Haul of Sand Alternative:**

Under this alternative there would be no material pumped onto Benson Beach; all material would be delivered by trucks. There would be no sand that could potentially enter the ocean and cause turbidity from the construction operation under this alternative. There would be no dredge in operation that could entrain fish and when the vessel takes in water to create the slurry mixture of water and sand.

Impacts to recreation and aesthetics would be similar to impacts associated with the Preferred Alternative but perhaps would be less because trucks would be capable of dumping sand nearer to final placement areas than with the Preferred Alternative. Therefore, more beach may be available to people.

For this alternative, sand would be obtained at a nearby quarry. This alternative would result in heavy truck traffic through Ilwaco, Washington and Cape Disappointment State Park during heavy use time (summer) for the park. Assuming 24 cubic yards of sand hauled per truck, approximately 5,200 round trips would be required. This alternative was rejected because it does not involve beneficial use of dredged material and involves more disturbance to park visitors.

No impacts to cultural resources, utilities and public service, land use and hazardous, toxic, and radioactive waste are expected.

## **COORDINATION**

This Environmental Assessment (EA) was prepared to address the requirements of the National Environmental Policy Act (NEPA) and has been issued for 30-day public and agency review under Public Notice CENWP-PM-E-08-07. This EA was sent to government agencies and other groups. Government agencies included Washington Department of Fish and Wildlife, Washington Department of Ecology, Pacific County, National Marine Fisheries Service, U.S. Fish and Wildlife Service, U.S. Coast Guard, and U.S. Environmental Protection Agency.

Public comments will be addressed. After consideration of all public comments, if it is determined that the Preferred Alternative will have no significant impact on the quality of the human environment, then a Final EA with incorporation of responses to comments, and a Finding of No Significant Impact will be prepared which will conclude the NEPA process. If it is determined that the Preferred Alternative will have a significant impact on the quality of the human environment, then further consideration under NEPA will occur.

## **CONSULTATION REQUIREMENTS**

- a. National Environmental Policy Act: This Environmental Assessment satisfies the requirements of the National Environmental Policy Act.
- b. Endangered Species Act: Biological assessments were submitted to NOAA Fisheries and U.S. Fish and Wildlife Service for littoral drift restoration. As the sand berm repair work fits essentially within the spatial bounds of the littoral drift restoration with respect to placement of dredged material on Benson Beach, supplemental assessments for the berm repair were submitted to NOAA Fisheries and U.S. Fish and Wildlife Service. Concurrence was received from NOAA Fisheries on February 11, 2008 and from the Service on May 23, 2008.
- c. Clean Water Act: The construction of a temporary berm for the purpose of sand retention on Benson Beach after pump-out will limit sand from entering the ocean and causing turbidity. Dredged material to be pumped is nearly pure sand and, because of large grain size, any material entering the ocean is expected to settle out fairly quickly. A Section 404(b1) evaluation is being prepared for the Preferred Alternative.
- d. Clean Air Act: Implementation of the Preferred Alternative would not affect clean air standards.
- e. Natural Historic Preservation Act: Implementation of the Preferred Alternative would have no effect on cultural resources.
- f. Native American Graves Protection and Repatriation Act: There are no recorded historic properties within the immediate project area and the probability of locating human remains in the project area is low. If human remains are incidentally

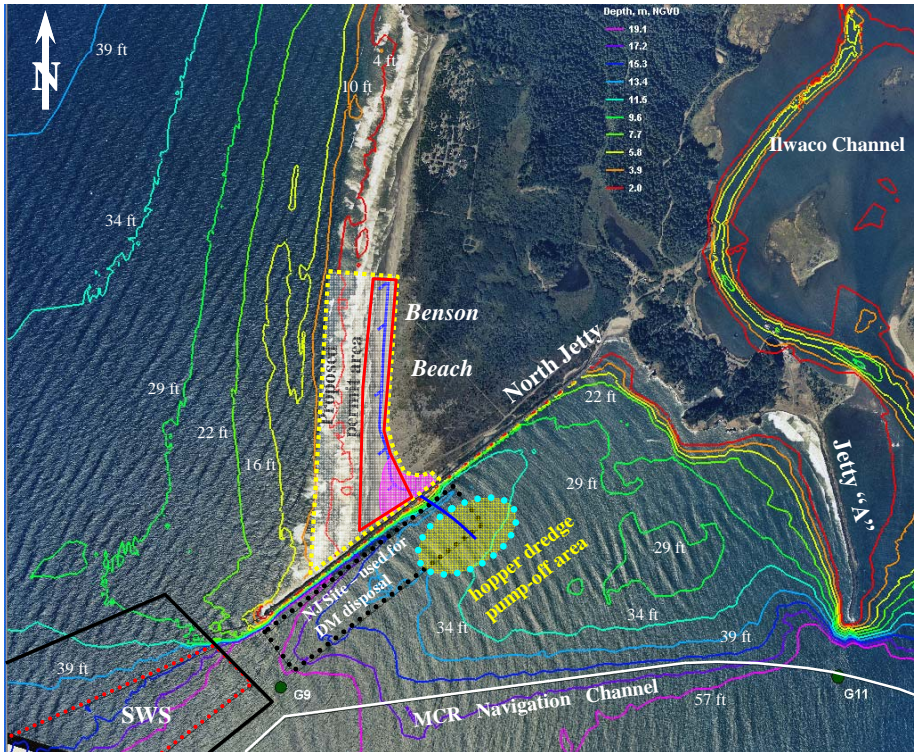
discovered during construction, the Corps and/or contractor will be responsible for following all NAGPRA requirements.

- g. Coastal Zone Management Act: A Coastal Zone Consistency Determination will be submitted to Washington Department of Ecology.
- h. Fish and Wildlife Coordination Act: The Proposed Alternative was coordinated with NOAA Fisheries and USFWS.
- i. Marine Protection, Research, and Sanctuaries Act: Implementation of the Preferred Alternative would not significantly impact marine resources as sand entering the ocean is expected to settle out quickly and would be entering in a high energy environment.
- j. Executive Order 11988, Flood Plain Management: No flood plains are present in the project area.
- k. Executive Order 119900, Protection of Wetlands: No wetlands are present in the project area.
- l. Analysis of Impacts on Prime and Unique Farmlands: No farmlands exist in the project vicinity.
- m. Comprehensive Environmental Response, Compensation, and Liability (CERCLA) and Resource Conservation and Recovery Act (RCRA): There is no indication that any hazardous, toxic and radioactive waste (HTRW) are in the vicinity of the project site. Presence of HTRW would be responded to within the requirements of the law and Corps regulations and guidelines.

Figure 1. Mouth of the Columbia River, Washington and Oregon.



Figure 2. Dredged material placement area.



**Scale** 0 ft NAVD = +0.2 ft MLLW  
**1,000 ft**

Proposed Permit Area extends along shore, from the North Jetty to approximately 4,500 ft north of North Jetty, and cross shore from the foredune scarp (≈+20 ft NAVD) to - 10 ft NAVD. Within 500 ft of the north jetty, the permit area extends inland for a finite distance along the +20 ft NAVD contour.

Proposed Permit Area also includes terrestrial area where the pump-ashore pipeline would pass, as shown.

Active placement of dredged material could occur within the permit area; extending from within 100 ft north of the north jetty to the northern limit of the permit area. The cross-shore extent of the active placement area would encompass the intertidal zone to the backshore dune scarp (0 to + 20 ft NAVD), and may extend inland a finite distance to +20 ft NAVD within 500 ft of the north jetty

- = Potential pump-ashore pipeline location
- = Active placement area for up to 1 million cy/yr
- = proposed 2008 final placement
- = Proposed Permit Area for dredged material placement and related support activities

