

**Supplemental Environmental Assessment
Fiscal Years 2012 through 2018
South Jetty Breach Fill Maintenance
Westport, Grays Harbor County, Washington
August 2012**



Prepared by:



**US Army Corps
of Engineers®**

Seattle District

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Responsible Agency: The responsible agency for this Supplemental Environmental Assessment (EA) is the U.S. Army Corps of Engineers, Seattle District (Corps).

Abstract: In accordance with the National Environmental Policy Act (NEPA), this document supplements the February 2004 South Jetty Breach Fill Maintenance Final Environmental Assessment, as well as the EA Supplements dated December 2004, November 2005, and July 2010. Those documents evaluated the impacts of placement of sand on the South Jetty breach fill in 2004, 2005, and 2010. This Supplemental EA maintains the approach of utilizing “action-triggering thresholds” that, if met, would prompt prescribed response measures. These triggering criteria were met in 2009, and responsive action last undertaken in 2010. Although the evaluation presented in the 2004, 2005, and 2010 NEPA documents have since expired, the Corps proposes to continue applying the triggering approach described therein.

The purpose of this document is to describe the actions and effects of those actions that might occur in the event that conditions meet prescribed triggering thresholds that would prompt response measures over the next seven fiscal years (FY) (FY12 through FY18), as needed. This Supplemental EA identifies two specific and objectively measurable site condition thresholds, assessing degree of sand loss that would trigger responsive actions. This document also specifies a range of responsive actions that would be taken if either of the triggering thresholds is met, and assesses the environmental impacts of that responsive action.

Repairs are intended to address erosion caused by winter storm events when the breach fill area shows signs of either waves washing over the sand spit that connects South Jetty with the adjacent mainland at the entrance to Grays Harbor, or it is determined through survey data that 15,000 cubic yards (cy) or more of sand has eroded from the southwest corner of Half Moon Bay (HMB) beach. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement the placement of sand once the thresholds are reached. All placement locations would be above mean higher high water. Breach fill responsive action events would take sand material from the Half Moon Bay mitigation stockpile, which may be refilled through beneficial use, or sand material acquired from an upland source and trucked overland to the sand placement sites.

Implementation of any contingent breach fill maintenance actions (FY12 through FY18) would be undertaken as an intermediate measure pending implementation of the Operations and Maintenance Long Term Management Strategy (LTMS) that is currently under development. Prior to completion of the LTMS study, there is a tangible risk that, without further preventative action, continued erosion in the vicinity of the South Jetty could produce another breach. Pending completion and review of the data collection and analysis efforts presently underway, there is uncertainty regarding the degree of risk of another breach occurring, as well as the nature and scope of any resultant impacts on the navigation project. In view of this uncertainty, the Corps plans to take action to preserve the *status quo* and protect against a breach recurrence until a definitive evaluation of the effects of another breach on the Federal interest in maintaining

existing navigation project features is complete. The project period for the breach fill maintenance action is FY 2012 through 2018, or until actions to maintain the *status quo* are rendered moot by full implementation of LTMS measures, whichever occurs first.

The Corps has determined that the preferred alternative (alternative 3) of sand placement is similar in scope and location to previous maintenance sand placements at the South Beach and HMB placement sites, and as proposed would have no effect on listed species or critical habitat. The preferred alternative (alternative 3) is also not a major Federal action significantly affecting the quality of the human or natural environment, and therefore does not require preparation of an environmental impact statement.

The official comment period on this document was 11 May to 10 June 2012.

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ACRONYMS AND ABBREVIATIONS

BE	Biological Evaluation
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CD	Consistency Determination
Corps	U.S. Army Corps of Engineers Seattle District
cy	cubic yards
CZMA	Coastal Zone Management Act
DNR	Washington State Department of Natural Resources
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FY	Fiscal Year
HMB	Half Moon Bay
HTRW	Hazardous Toxic and Radioactive Waste
LTMS	Long Term Management Study
MBTA	Migratory Bird Treaty Act
MHHW	Mean Higher High Water
MLLW	Mean Lower Low Water
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NIP	Navigation Improvement Project
QIN	Quinault Indian Nation
SHPO	Washington State Historic Preservation Officer

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1 PROPOSAL FOR FEDERAL ACTION

The Council on Environmental Quality (CEQ) regulations, 40 CFR § 1500.1(c) and 40 CFR § 1508.9(a)(1), interpreting the National Environmental Policy Act of 1969 (as amended) require Federal agencies to “provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact” on actions authorized, funded, or carried out by the Federal government to assist agency officials in making decisions that are based on understanding of “environmental consequences, and take actions that protect, restore, and enhance the environment.” This Supplemental EA supplements the February 2004 South Jetty Breach Fill Maintenance Final Environmental Assessment, as well as the EA Supplements dated December 2004, November 2005, and July 2010. This Supplemental EA document evaluates the impacts of sand placement on the South Beach and HMB placement sites and evaluates obtaining sand from an upland source, the HMB mitigation stockpile, or material pumped ashore from maintenance dredging of the navigation channel beginning in FY12 and carrying through FY18, as needed. The project is located near Westport, Grays Harbor County, Washington (Figure 1).

Specific “triggering” thresholds were established in 2004, in order to provide adequate reaction time to address potential breach events at the site. The purpose of this Supplemental EA is to identify two specific and objectively measurable site condition thresholds, assessing degree of sand loss, which would trigger responsive action. This document also specifies a range of responsive actions that would be taken if either of the triggering thresholds is met, and assesses the environmental impacts of that responsive action. Repairs are intended to address erosion caused by winter storm events when the breach fill area shows signs of either waves washing over the sand spit that connects South Jetty with the adjacent mainland at the entrance to Grays Harbor, or it is determined through survey data that 15,000 cubic yards (cy) or more of sand has eroded from the southwest corner of HMB beach. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement the placement of sand once the thresholds are reached. Under the preferred alternative, for the HMB placement site, approximately 0.8 acres would be covered, and up to 15,000 cy of sand would be placed, on the 0.8 acre site if the first of two thresholds was triggered, landward of elevation +9 feet MLLW (the mean higher high water [MHHW] contour) depicted in Figure 2. For the South Beach placement site, no more than 2.2 acres would be covered, and up to 30,000 cy of sand would be placed, within the 7.6-acre site if the second of two thresholds was triggered, landward of elevation +9 feet MLLW at a location within the placement footprint depicted in Figure 2.

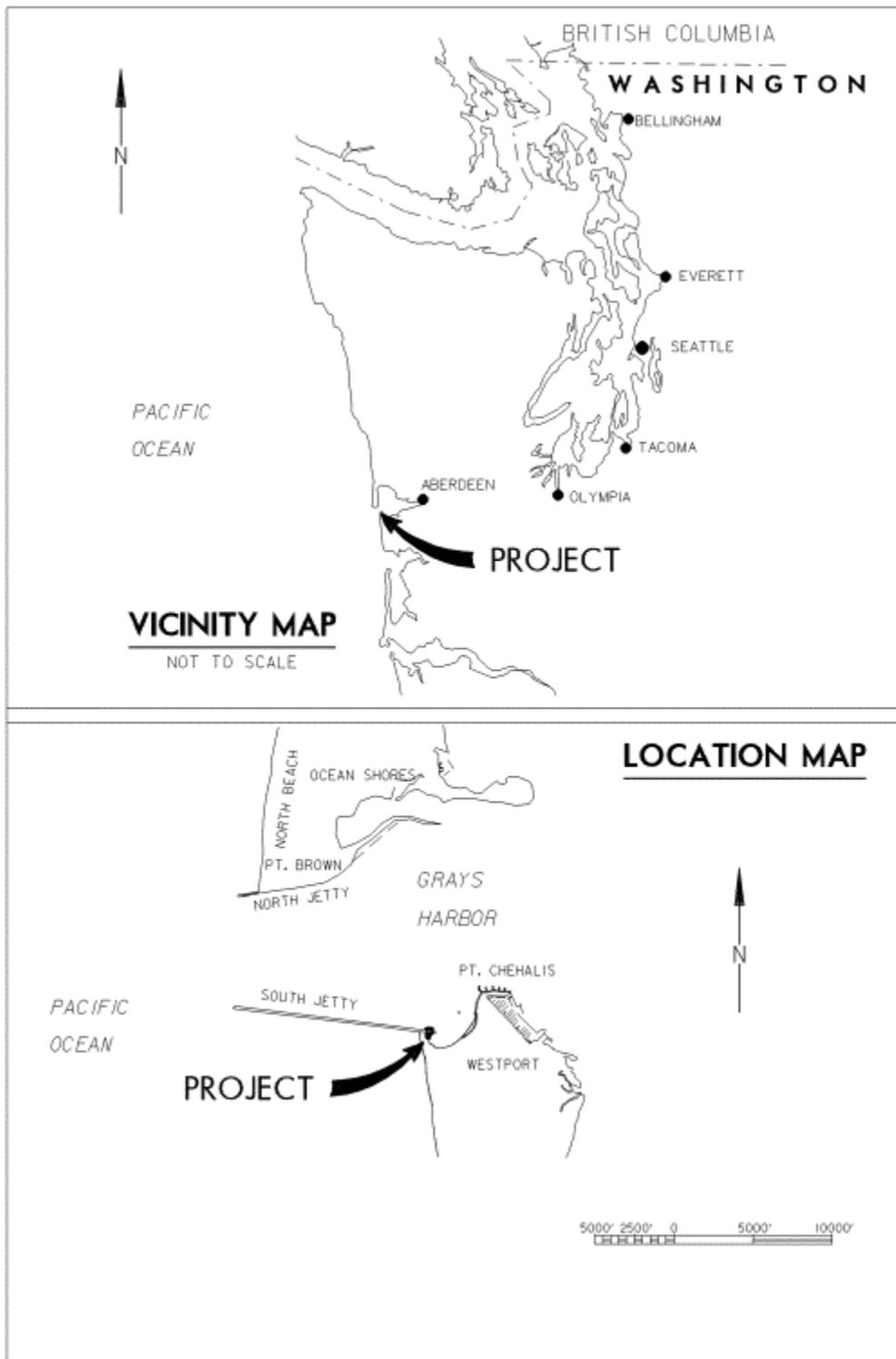


Figure 1. Location and Vicinity Maps



Figure 2. Locations of South Beach placement site, HMB mitigation stockpile, and HMB placement site.

1.1 Location of the Proposed Action

The project area is located in Westhaven State Park, Westport, Grays Harbor County, Washington (T16N, R12W, Section 1) on the coast in southwest Washington approximately 50 nautical miles north of the entrance to the Columbia River. The geographic location of the proposed work is shown on the vicinity and location maps in Figures 1 and 2.

1.2 Authority

The Grays Harbor and Chehalis River Project, including maintenance of the Federal Navigation Channel and the South Jetty, is authorized by the Rivers and Harbors Act of August 30, 1935 (House Document 53, 73rd Congress, 2nd Session) and the Water Resources Development Act of November 17, 1986 (Public Law 99-662). The proposed work is within the Grays Harbor and Chehalis River Project operations and maintenance (O&M) authority because the intent is to maintain and protect navigation features, including the South Jetty and the Federal Navigation Channel. Preventive action to protect against risk of breach in the spit connecting the South Jetty with Point Chehalis is a proper use of O&M funds because, until a definitive determination can be made of any connection between a breach and the Federal interest in maintaining navigation facilities, the Corps acknowledges uncertainty in the degree of risk of a breach, as well as in the nature and scope of any impacts of the navigation project as a result of such a breach. In view of this uncertainty, during the interim while an LTMS is being developed the Corps proposes to take action to preserve the *status quo* by protecting against the risk of a breach recurrence.

1.3 Background

After winter storms breached the spit of land that connects South Jetty with the land mass to the south in 1993, there were concerns about the stability of the South Jetty structure and potential damage to the Grays Harbor Federal navigation channel and associated structures. In response, the Corps placed about 600,000 cubic yards (cy) of sand to close the breach. As described in the February 2004 EA, a breach at the South Jetty site would pose a serious risk to the Federal navigation structures and the Federal Navigation Channel in Grays Harbor.

The persistent loss of sediment from the Grays Harbor entrance and adjacent beaches is expected to continue indefinitely due to natural forces. Shoreline erosion in the vicinity of the South Jetty could result in the eventual breaching of the spit that connects South Jetty with the land mass to the south. In order to assess the threat of such a breach to the Federal navigation project and associated structures, and to develop a long-term strategy to maintain and protect Federal navigation project structures, the Corps has continued studies to formulate and assess various management alternatives. The LTMS study will conclude with a recommendation for how to best ensure the continued operability of navigation project structures. The LTMS effort is ongoing and is expected to be followed by implementation of recommendations made by that study.

Prior to completion of the LTMS study, there is a tangible risk that, without further preventative action, continued erosion in the spit of land connecting South Jetty with the land mass to the south could be breached. Pending completion and review of the data collection and analysis efforts presently underway, there is uncertainty regarding the degree of risk of another breach occurring, as well as the nature and scope of any resultant impacts on the navigation project. In view of this uncertainty, the Corps plans to take action as necessary from FY12 through FY18 to preserve the *status quo* and protect against a breach recurrence until a definitive evaluation of the effects of another breach on the Federal interest in maintaining existing navigation project structures is complete.

The prior 2004 EA and supplements (Corps EA 2004, EA 2005, EA 2010) established two sets of triggering criteria as thresholds indicating development of an undue risk to the Federal project and its structures. Each set of triggering criteria was accompanied by a prescribed response measure to address that risk. The approach established in those supplemental EAs has expired. This Supplemental EA evaluates the reapplication of those triggers and response measures for the period FY12 through FY18.

1.4 Purpose and Need

The purpose of the proposed project is to continue, pending completion of the LTMS and implementation of its recommended measures, to preserve the status quo by protecting against an undue risk of the recurrence of a breach in the sand spit that connects South Jetty with the land mass to the south. The underlying need for action is to protect against a risk of breaching in the South Jetty location with the land mass to the south. The project actions will be implemented in FY12 through 18 when surveys indicate that an undue risk of a breach is likely to occur based on trigger thresholds being met as described in Section 2.2 (see below).

Since the January 2005 beach nourishment the most rapid erosion has occurred in the northwest section of HMB shoreline. The most recent measurements of the scarp line on both South Beach and HMB indicate the breach fill area width (distance between South Beach and HMB) has narrowed to less than 100 feet in the most critical section, 250 feet south of South Jetty.

Half Moon Bay and South Beach have been surveyed quarterly by the Corps since the January 2005 breach nourishment activity. Between January 2005 and March 2012 in HMB, the beach

scarp has moved approximately 80 feet landward as it continues to approach the classic log spiral shoreline shape described by Silvester and Hsu (1997). Surveys indicate that the shoreline position is controlled by the position of the fixed hard point (South Jetty root) and the directionality of waves propagating into HMB.

The South Beach area has, in recent years, been eroding near the connection between the breach fill area and South Jetty and has formed a concave pocket immediately adjacent to South Jetty. There is strong evidence of the beginning of flanking along South Jetty at this location. The breach fill area elevation at this location is lower in height and has lost much of the vegetation in this region. Site visits have occurred approximately every 3 months and have documented sediments being washed up and over the sand spit in this location indicating waves are overtopping the breach fill area. The physical evidence thus confirms the need for this proposed action: there is ongoing risk that one or both of the triggering thresholds described in section 2.2 will continue to develop and that the prescribed parameters could be exceeded one or more times during the project period as a result of erosion and extraordinary storm event forces. Avalanching of sand from the dune atop the breach fill area has also been observed.

As a result of the erosion described above, sand placement actions and sand fence construction may need to be implemented as many as four times during the FY12-18 period as previously evaluated in earlier Corps EAs from 2004, 2005, and 2010. This is needed to protect South Jetty, the Federal navigation channel, and other Federal navigation project features from damage which could result from a breach. Maintenance of the South Jetty and entrance channel to the Grays Harbor and Chehalis River Navigation Channel is important to the local economy because large ocean going vessel access to the Port of Grays Harbor is through this waterway. Export operations at the Port of Grays Harbor provide directly and indirectly hundreds of local jobs. The local economy in the area is historically tied to forest products that are shipped to domestic and international markets. More recently, the Port of Grays Harbor has improved rail access and terminal facilities for grain exports and other bulk cargo. The project period is FY12 through FY18, or until actions to maintain the *status quo* are rendered moot by full implementation of LTMS measures, whichever occurs first.

1.5 Previous Documents

Additional information on the history of Grays Harbor and Chehalis River Navigation Project structures, erosion in the project area, and the natural resources of Grays Harbor can be found in previous Corps documents. The following documents are incorporated herein by reference, and are available for inspection at the Seattle District office. Complete bibliographic information on the 2004 and older documents can be found in the reference section of the 2004 final environmental assessment (Corps 2004).

- Final Supplemental Environmental Assessment South Jetty Breach Fill Maintenance (July 2010).
- Half Moon Bay Shorebird Assessment (June 2006)
- Final Supplement to the Final Supplemental Environmental Assessment for the South Jetty Breach Fill Maintenance (November 2005)
- Half Moon Bay Baseline Fish Survey, Grays Harbor, Washington (January 2005)
- Final Supplemental Environmental Assessment for the South Jetty Breach Fill Maintenance (December 2004)
- Biological Evaluation, South Jetty Breach Fill Maintenance Westport, Grays Harbor County, Washington (November 2004)
- South Jetty Breach Fill Maintenance Final Environmental Assessment (February 2004)

- South Jetty Sediment Processes Study, Grays Harbor Washington: Evaluation of Engineering Structures and Maintenance Measures (April 2003)
- Half Moon Bay Transition Gravel and Cobble Placement Final Environmental Assessment (November 2003), rescinded December 15, 2003
- Design Analysis (Revised), Grays Harbor, Washington FY 1999 South Jetty Repair (September 1999)
- Long Term Maintenance of the South Jetty at Grays Harbor, Washington, Evaluation Report (June 1997)
- Point Chehalis Revetment Extension Project, Westport, Washington, Interagency Mitigation Agreement (October 1998)
- Review of Long-Term Maintenance Plans for the South Jetty, Grays Harbor, Washington; Report by a Special Subcommittee of the Committee on Tidal Hydraulics and Coastal Engineering Research Board (1995)
- South Jetty Breach Fill Final Environmental Assessment (April 2002)
- South Jetty Repair Final Environmental Assessment (July 1999)
- Final Environmental Assessment: Fiscal Years 2001-2006 Maintenance Dredging and Disposal, Grays Harbor and Chehalis River Navigation Project, Grays Harbor County, Washington (April 2001)
- Programmatic Biological Evaluation: Fiscal Years 2001-2006 Maintenance Dredging and Disposal, Grays Harbor and Chehalis River Navigation Project, Grays Harbor County, Washington (December 2000)
- North Jetty Performance and Entrance Navigation Channel Maintenance, Grays Harbor, Washington September 2003 ERDC/CHL TR-03-12

2 ALTERNATIVE ACTIONS

The Corps considered three alternatives for breach fill maintenance: no action (alternative 1), interim sand pump ashore (alternative 2) with construction of sand fencing, and an interim sand placement with construction of sand fencing (alternative 3).

2.1 Alternative 1 - No Action Alternative

Under the no action alternative, the Corps would not take any action to prevent further loss of breach fill material and recession of the shoreline at South Beach or HMB. As a result, significant damage to the breach fill could occur prior to the implementation of the LTMS. There is a large degree of uncertainty relating to predictions of the status of the breach fill area during the project period. The risk of a breach similar to the December 1993 event has been reduced by elevating the breach fill area above +30 feet mean lower low water (MLLW), planting dune grass to slow wind-blown erosion, and placing cobble on HMB. However, persistent erosion would likely ultimately create a breach if left unchecked.

The circumstances surrounding the no action alternative have not changed from their description in the 2004 EA; that is erosion would continue and lead eventually to a breach in the spit separating South Beach from HMB. Additional detail is provided in the February 2004 final environmental assessment, and supplemental EAs (Corps 2005, 2010). This alternative would not meet the project purpose and need because erosion would continue eventually leading to a breach forming and generating an intolerable degree of risk of adverse effects on the Grays Harbor Federal navigation project features. This alternative is being included in the EA for full consideration as a basis of comparison with the action alternatives.

2.2 Alternative 2 – Sand Pump Ashore

Under this alternative (sand pump ashore) marine sand would be dredged from the adjacent reaches of the Federal navigation channel during periodic maintenance episodes and, in lieu of discharging those sands into designated unconfined aquatic disposal sites, pumped directly onto the South Beach and HMB placement sites as needed. Once sand placement is completed the Corps may install sand fencing to reduce wind erosion on the newly placed sand material. Two triggering thresholds, which consider the specific conditions in light of ongoing erosion and the effects of storm events, have been established to guide the decision about whether a prescribed responsive action should be implemented as described in greater detail below. Each threshold has a corresponding responsive action. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement sand pump ashore once the thresholds are reached. The Corps conducts periodic inspections (on approximate three-month intervals) of the breach fill area to determine when the triggering thresholds are achieved.

The action-triggering thresholds and corresponding responses are as follows:

2.2.1 *Threshold No.1*

The Corps determines through evaluation of pertinent survey data that 15,000 cy of sand has eroded from the southwest corner of the HMB beach following the most recent sand placement event.

2.2.2 *Responsive Action No.1*

Placement of up to 15,000 cy of clean sand along approximately 1,000 linear feet of beach in the southwest corner of HMB, in a footprint approximately 0.8 acres in size. Sand would be pumped directly to the site during annual maintenance dredging operations. Westhaven State Park access roads would be used by construction equipment (e.g. bull dozers, excavators, etc.) needed to rehandle the sand material on the placement site. Sand material obtained from the annual maintenance dredging would be pumped directly to the HMB placement site by a floating pipeline with booster pumps, if needed. The floating pipeline, fed by a hydraulic dredge, would extend from the hydraulic dredge to the HMB placement site and would lie across the intertidal zone and continue upland to the location where the sand material was needed above +9 feet MLLW. The slurry of sand and water would be decanted onto a temporary settling pond. The temporary settling pond would likely be composed of berms, two to three feet high and constructed from native on site material using bull dozers or excavators (these machines would traverse the access roads within Westhaven State Park). The settling pond technique would allow most of the sand material to settle out of the sand and water slurry and remain within the confines of the settling pond. About 10 percent of the material pumped into the settling pond would be lost, which would necessitate pumping an additional 1,500 cy of sand material. The water fraction of the slurry (with some suspended sand) would filter through the berms and into the native substrate onto the intertidal zone and on into the adjacent water body. Rehandling the sand material by bull dozers and/or excavators would occur as the sand material accumulated in the settling pond. These same machines would be used for pioneering an access route on the HMB placement site area and when transporting and/or bulldozing sand for creating berms or final placement of the sand material. No road building materials (i.e., rock) would be used in transporting sand or machinery. Mechanical grading and reworking of the sand would be required to grade and disperse the sand along and across the dune. Once sand placement is completed the Corps may install sand fencing to reduce wind erosion on the newly placed sand

material. In-water work would be necessary to manage the hydraulic dredge pipeline.

2.2.3 Threshold No. 2

The breach fill footprint south of South Jetty is overtopped by water from the west, resulting from one or more storm events.

2.2.4 Responsive Action No. 2

Placement of clean sand material obtained from the annual maintenance dredging pumped directly to the South Beach Placement site by a floating pipeline with booster pumps (if needed). The floating pipeline, fed by a hydraulic dredge would extend from the hydraulic dredge across the intertidal zone and continue upland to the location where the sand material was needed above +9 feet MLLW. The slurry of sand and water would be decanted into a temporary settling pond which would be composed of berms, two to three feet high and constructed from native on site material using bull dozers and/or excavators (these machines would likely traverse the access roads within Westhaven State Park). The settling pond technique would allow most of the sand material to settle out of the sand and water slurry and remain within the confines of the settling pond. There would be a loss of approximately 10 percent of the sand material which would necessitate pumping an additional 3,000 cy of sand material. The water fraction of the slurry (with some suspended sand) would filter through the berms and into the native substrate onto the intertidal zone and on into the adjacent water body. Grading would occur for pioneering an access route on the South Beach placement area, when transporting and/or bulldozing sand for creating berms, rehandling sand material from the settling pond, and final placement of the sand material. No road building materials (i.e., rock) would be used in transporting sand or machinery. Once sand placement is completed the Corps may install sand fencing to reduce wind erosion on the newly placed sand material. In water work would be necessary.

2.3 Alternative 3 - Preferred Alternative, Sand Placement

Under the preferred alternative (sand placement) there are several options that could be undertaken depending on the specific triggering thresholds that are met (see section 2.2 for explanations of triggering thresholds). These options include: 1) place sand in the South Beach placement site; 2) install sand fencing; 3) place sand in the HMB placement site; and 4) some combination of the above options. In general, the sand would be obtained from upland sources or from the HMB mitigation stockpile, and transported via trucks. Greater detail on specifics of sand placement is discussed in the section on responsive actions. Two triggering thresholds, which consider the specific conditions in light of ongoing erosion and the effects of storm events, have been established to guide the decision about whether a prescribed responsive action should be implemented. Each threshold has a corresponding responsive action. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement the placement of sand once the thresholds are reached. The Corps conducts periodic inspections (on approximate three-month intervals) of the breach fill area to determine when the triggering thresholds are achieved.

The action-triggering thresholds and corresponding responses are as follows:

2.3.1 Threshold No.1

The Corps determines through evaluation of pertinent survey data that 15,000 cy of sand has eroded from the southwest corner of the HMB beach following the most recent sand placement event.

2.3.2 Responsive Action No.1

Placement of up to 15,000 cy of clean sand along approximately 1,000 linear feet of beach in the southwest corner of HMB, in a footprint approximately 0.8 acres in size. Sand would be excavated from the existing buried revetment HMB mitigation stockpile, or obtained from another suitable upland source, and truck-hauled on the existing state park access road. Any quarry supplying the sand material would be required to match the relevant characteristics of the marine sands presently comprising the breach fill. Minor grading would occur for pioneering an access route on the sand and for safety when bulldozing sand over the bank top. No road building materials (i.e., rock) would be used in transporting the sand. The excavated material would be placed landward of the +9 foot mean lower low water (MLLW) contour at its natural angle of repose to minimize impacts on intertidal ecology. Some mechanical grading and reworking of the sand may be required in addition to water currents and wave actions, which are expected to subsequently grade and disperse this sand eastward along the beach and offshore. No in-water work would be performed. Sand grain size and other pertinent characteristics would be consistent with existing beach sand and marine sands in the breach fill and nearshore area (table 1). Once sand placement is completed the Corps may install sand fencing to reduce wind erosion on the newly placed sand material. Care will be taken to minimize impacts to dune grass.

2.3.3 Threshold No. 2

The breach fill footprint south of South Jetty is overtopped by water from the west, resulting from one or more storm events.

2.3.4 Responsive Action No. 2

Placement of clean sand of the same character (similar grain size and other pertinent characteristics) as the material in the breach fill area in a footprint of approximately 2.2 acres located within the 7.6 -acre South Beach Jetty placement site as depicted in Figure 2, landward of elevation +9 feet MLLW. Any quarry supplying the sand material would be required to meet the relevant characteristics of the marine sands presently comprising the breach fill (table 1). The precise location and quantity of placed sand would be selected based on an analysis of the most effective means of responding to the observed overtopping conditions and the most efficacious means of addressing the risk of further overtopping and head-cutting. The sand would be excavated or obtained from another suitable upland source, and truck-hauled on the existing state park access road. Minor grading could occur for pioneering a temporary access route on the sand. Any material used to develop a temporary access route will be removed at the conclusion of the project. No in-water work would be performed. Sand fences may also be constructed to capture wind borne sand and reduce erosion of the sand placed in the South Beach placement site. Care would be taken to minimize impacts to any dune grass present in the South Beach placement site.

2.3.5 Detailed Description of the Sand Placement Preferred Alternative

For the HMB placement site approximately 0.8 acres would be covered and up to 15,000 cy of sand material would be placed in each episode on site if threshold No. 1 was triggered. At South Beach Jetty site, no more than 2.2 acres would be covered and up to 30,000 cy of sand would be placed in each episode on the site if Threshold No. 2 was triggered, landward of elevation +9 feet MLLW at a location within the placement footprint depicted in Figure 2. Site placement episodes in FY 12 - 18 would be contingent, both in timing and volume, on the analysis of needed placement and would be confined to the boundaries outlined in Figure 2. Little, if any, native dune grass vegetation would be disturbed by the transportation and sand placement activities or

construction of sand fences. Minor grading could occur for pioneering a temporary access route on the sand. Any material used to develop a temporary access route will be removed at the conclusion of the project. The South Beach placement site is almost devoid of vegetation (dune grass). Further, the Corps will make every effort to avoid such impacts.

Sand may be excavated from the HMB mitigation stockpile (a dredged material disposal site) or from another suitable upland site. The HMB mitigation stockpile is situated landward of the Point Chehalis revetment extension constructed in 1999. The HMB mitigation stockpile serves both as a cover for the buried revetment as well as a source of material to nourish the HMB shoreline. The HMB mitigation stockpile material would be periodically supplemented from future maintenance dredging activities within Grays Harbor (Corps 2011) or from another suitable upland site to ensure continued compliance with the obligations assumed in the Point Chehalis Revetment Extension Project Interagency Mitigation Agreement of October 7, 1998.

Sand may be temporarily stockpiled on upland areas adjacent to the HMB shoreline. The sand would then be pushed off the erosion scarp during low tides, into the area above the MHHW elevation. By placing material uniformly over a larger area all at once, erosion of newly placed material may be minimized (i.e., no creation of small headlands to receive focused wave energy) and final placement would be timed so that the material would be placed at low tides and completely in the dry. The Corps may install sand fencing to reduce wind erosion on the newly placed sand material.

2.3.6 Upland Sand Source Material

Some of the material placed in the South Beach placement site is expected to erode onto the intertidal area of South Beach. To minimize effects to the ecology of the intertidal area the Corps will ensure that the composition of the upland source material will be of the same character as the existing breach fill material (see Tables 1 and 2). The sands comprising the breach fill footprint, placed in response to the breach event of 1993, consisted of marine sands derived from dredging the adjoining South Reach and Entrance Channels of the Federal navigation project. Subsequent placement events to supplement the sands in the breach fill footprint have also originated from these navigation channel reaches; in some instances, the marine sands were first stored in the stockpile adjacent to the Point Chehalis revetment extension on the eastern shore of HMB, prior to placement in the South Beach and/or HMB placement sites. Sediment quality characteristics of the placed material will match those of the existing materials, so as to constitute no more than *de minimis* change in the character of the existing sands in the breach footprint, as long as the materials placed in this action are (1) marine sands dredged from the adjoining reaches of the navigation channel, or (2) sand material derived from an upland source meeting the parameters listed in Table 2 as well as the following physical and chemical criteria:

- Particles of specific gravity less than 1.95 shall not exceed 2% by weight.
- Clay lumps shall not exceed 0.3% by weight.
- Shale shall not exceed 2% by weight.
- Wood waste shall not exceed 0.05% by weight. Material must meet chemical criteria for Puget Sound marine sediment quality standards listed in WAC 173-204-320.

Table 1. Comparison of sand characteristics (composition) in the breach fill and upland quarry contract requirements.

Federal Outer Harbor Reach Sand Characteristics (documented sources for mitigation stockpile)				Contract Specific Sand Composition (upland quarry material)		
	Gravel	Sand	Fines	Gravel	Sand	Fines
Average	2.8%	95.5%	1.6%	0 - 5%	90 - 100%	0 - 5%
Range	0 - 21%	77.8 - 99.4%	0.2 - 9.3%	0 - 5%	90 - 100%	0 - 5%

Table 2. Percentage by Weight Passing by Sieve (ASTM D422)

Sieve	Percent Passing
#4	95-100
#16	50-100
#40	10-60
#100	0-8
#200	0-5

3 ISSUES FOR COMPARISON OF THE ALTERNATIVES

This section provides information on issues relevant to the decision process for selecting the preferred alternative. Factors for selecting the preferred alternative include considering which of the alternatives would be the most cost effective, least environmentally damaging, and meets the purpose and need of the project.

3.1 Geology

The narrow neck of land (sand spit) that connects the South Jetty to South Beach is in a high-energy area subject to direct tidal, wave, and wind action. The beach is composed of fine- to medium-grained sands and some gravel, all materials derived from northbound littoral drift and erosion of material from the adjacent upland. Wave energy results in shifting substrate that lacks organic material. This area has undergone major changes during the life of the South Jetty. The area has accreted and retreated several times from the early 1900's until about 1967 when the shoreline began a steady retreat.

Half Moon Bay is a type of coastal feature common at the landward end of jetties. The bay appeared in 1945, six years after the South Jetty was reconstructed. The Point Chehalis Revetment was constructed between 1950 and 1956 to combat rapid retreat of the HMB shoreline. Between 1957 and 1993, the unarmored portion of the shoreline retreated at an average annual rate of 5 to 10 feet per year. Between May 1993 and December 1994, localized areas retreated up to 150 feet. A 1,900 foot long revetment extension was constructed in 1998-1999 to protect Westport's wastewater treatment plant and sewer outfall. When bathymetric conditions allow for a loaded bottom-dump barge to enter the bay, the Corps deposits sandy dredged materials into offshore waters of the eroding shoreline. Wave action carries the material shoreward, which helps maintain the gently-sloping shallow depth contours in HMB.

3.1.1 Alternative 1-No Action Alternative

This alternative would allow the continued erosion of the breach fill area and eventually likely allow a breach to occur. If a breach occurs, it would likely cause changes in the water current

dynamics of the Grays Harbor entrance channel. Based on engineering studies any changes in water current dynamics would pose a substantial risk of reducing the navigation function of the entrance channel.

3.1.2 Alternative 2-Sand Pump Ashore Alternative

This alternative would continue the status quo by directly pumping material from navigation channel maintenance dredging onto the placement sites to reduce the likelihood of a breach occurring. The sand fencing may be installed to capture windblown sand and reduce erosion of the sand spit. A sand and water slurry pumped directly to the placement site via a pipeline across the intertidal zone would affect the intertidal and upland region by placing the pipeline across the intertidal zone and up onto the dune. Most of the sand pumped directly to the placement site would be retained at the placement site above +9 feet MLLW within a settling pond. The decanted water (with some suspended sand) would be filtered through the settling pond berm material and through the native substrate onto the intertidal zone and into the adjacent water body. The sand material would be rehandled using bull dozers and/or excavators to distribute the sand material across the placement site. Some negative effects to the intertidal zone and the adjacent water bodies would occur as a result of the hydraulic dredge pipeline laid on the intertidal zone substrate, workers maintaining the pipeline in the intertidal zone, and sand material and water filtering onto the intertidal zone and into the water body. Maintaining the breach fill will maintain the present water current dynamics of the entrance channel and continue supplying material to the intertidal area via material eroding from the South Beach placement site, thus reducing the eastward movement of the intertidal area adjacent to the breach fill area. The movement of necessary equipment (bull dozer, excavator, etc) across existing upland areas in Westhaven State Park would not be predicted to have any effect on the geology of the area.

3.1.3 Alternative 3- Sand Placement Alternative

This alternative would continue the status quo by adding material, as necessary to the South Beach placement site area, and to HMB above MHHW, reducing the likelihood of a breach occurring. Sand fencing would be installed to capture windblown sand and reduce erosion of the sand spit. By maintaining the breach fill, it will continue the present water current dynamics of the entrance channel and continue supplying material to the intertidal area via material eroding from the South Beach placement site, thus reducing the eastward movement of the intertidal area adjacent to the breach fill area. Sand material would be placed in the HMB placement site above +9 feet MHHW on the HMB side of the breach fill area when 15,000 cy of material has been eroded away. Sand material would be placed in the South Beach placement site above +9 feet MHHW when evidence of waves overtopping the breach fill has been documented. This action would reduce the westward movement of the HMB intertidal area and the eastward movement of South Beach. The movement of trucks and associated equipment across existing upland areas in Westhaven State Park will not have any effects on the geology of the area.

3.2 Water Quality

3.2.1 Alternative 1-No Action Alternative

This alternative would allow the continued erosion of the breach fill area into the adjacent water bodies that is naturally occurring and thus would not have an effect on water quality.

3.2.2 Alternative 2- Sand Pump Ashore Alternative

Sand would be pumped ashore into a settling pond to minimize loss of pumped ashore sand and minimize effects to water quality from suspended sand that would enter local water bodies. The

decanted water (with some suspended sand) would filter through the settling pond berms and through the native substrate onto the intertidal zone and into adjacent water bodies increasing turbidity during the pump ashore operation. Increases in suspended sand (turbidity) escaping the settling pond would occur. Dissolved oxygen would likely not be adversely affected and the Corps does not anticipate any measureable change in water temperature. This alternative would cause localized changes in the quality of the receiving waters above natural conditions.

3.2.3 *Alternative 3-Sand Placement Alternative*

The alternative would not have any detectable effect on water quality of the adjacent water bodies, as compared with existing conditions, because sand reflecting no more than *de minimis* change in character from existing materials would be placed above the MHHW contour, and any sand erosion following placement would mirror existing, natural rates and conditions.

3.3 **Intertidal**

3.3.1 *Alternative 1-No Action Alternative*

This alternative would allow the continued erosion of the breach fill area into the intertidal area and eventually likely allow a breach to occur. If a breach occurs, it would likely cause changes in the intertidal area by creating an intertidal area extending from South Beach into HMB.

3.3.2 *Alternative 2- Sand Pump Ashore Alternative*

A sand and water slurry pumped into a confined location (settling pond) would result in sand material covering portions of the nearby intertidal zone which could change the infaunal community from a climax condition to an early stage situation for about one year. Workers and pipes would add to disruption of the intertidal zone. However after the pump ashore operation was completed, the input of material eroding from the South Beach and HMB placement sites would provide a continuous supply of sand which would mimic natural erosion and help maintain sand input from the upland that promotes the dynamic nature of the intertidal zone which the intertidal ecology needs, thus continuing the *status quo* of the intertidal habitat.

3.3.3 *Alternative 3-Sand Placement Alternative*

Sand that erodes from the South Beach placement site or the HMB placement site would likely erode into the intertidal area of South Beach adjacent to the South Jetty and HMB intertidal area. The material would have similar characteristics (composition) to the material that has already been eroding onto the intertidal areas. The material would likely erode along most of the border of the placement footprint and enter the intertidal areas in a fashion similar to existing erosional features along the coastal areas south of South Jetty. The characteristics of the material placed at either site – whether derived from dredging of marine sands or from another suitable upland source – would closely match the existing materials first placed following the 1993 breach event. As such this would not cause any appreciable change in effects to the intertidal area that are not already occurring. What it will do is place material in an already eroding area slowing the eastward movement of the South Beach intertidal area and the westward movement of the HMB intertidal area.

Regarding effects to the ecology of the intertidal area, since the material will enter the system at roughly the same rate as any other eroding area south of South Jetty and along the HMB shoreline, it will not cause any change to the intertidal systems that has not already occurred and continues to occur. Material is naturally transported northward along the coastal intertidal area and continues to erode from the adjacent upland. Organisms that inhabit the intertidal areas are all adapted to the dynamics of the area and seek out such areas and thus will not be adversely

affected by material sloughing from the South Beach placement site or the HMB placement site. Putting material in the South Beach and HMB placement sites will likely facilitate conditions that favor the existing intertidal ecosystem.

3.4 Vegetation

Given the degree of disturbance in the breach fill area over the past several decades, it remains largely unvegetated. Likewise, the HMB mitigation stockpile is largely unvegetated. Scattered clumps of European beach grass (*Ammophila arenaria*) and the native dune grass *Elymus mollis* are present along the western shore of HMB. Dunal areas south of the project area are dominated by non-native invasive plants such as European beach grass (*Ammophila arenaria*), Scot's broom (*Cytisus scoparius*) and Himalayan blackberry (*Rubus discolor*), but some natives, including the native dune grass, soft rush (*Juncus effusus*), beach lovage (*Ligustichum scoticum*), and beach carrot (*Glehnia littoralis*), are also present.

The area, which will serve as a temporary haul road for the proposed project, was also impacted by installation of a hydraulic pipeline during the first breach fill. The alignment is dominated by European beach grass and Scot's broom.

A large deflation plain wetland is present on the south side of the State Park access road. Vegetation in the wetland is dominated by shore pine (*Pinus contorta*), Hooker's willow (*Salix hookerana*), California wax myrtle (*Myrica californica*), slough sedge (*Carex obnupta*), common rush (*Juncus effusus*), and silverweed (*Potentilla anserina*). Typical of this type of dunal feature, small upland hummock areas are scattered through the wetland complex.

3.4.1 Alternative 1 - No Action Alternative

This alternative would allow the breach fill area to continue eroding, reducing the amount of vegetation present in the area as the amount of upland above +9 feet MLLW level is reduced.

3.4.2 Alternative 2 - Sand Pump Ashore Alternative

This alternative would continue the *status quo* by adding material, as necessary, and possibly sand fencing, to the top of the South Beach and HMB placement sites above MHHW thus reducing the likelihood of a breach occurring. This in turn would continue the present situation by maintaining the sand spit and allowing the continued presence of the aforementioned vegetation in some areas of the breach fill area, but primarily in areas to the south of the placement sites (European beach grass (*Ammophila arenaria*), Scot's broom (*Cytisus scoparius*) and Himalayan blackberry (*Rubus discolor*)). Native vegetation does not occur in the placement sites.

Both the South Beach and HMB placement sites have minimal vegetation primarily due to the frequent (approximately 2 year intervals) placement and removal by erosion at the South Beach and HMB placement sites. Therefore, this alternative would not be predicted to have any adverse impacts on any native or non-native vegetation in the project areas.

3.4.3 Alternative 3 - Sand Placement Alternative

This alternative would continue the *status quo* by adding material, as necessary, and possibly sand fencing, to the top of the South Beach and HMB placement sites above MHHW thus reducing the likelihood of a breach occurring. This in turn would continue the present situation by maintaining the sand spit and allowing the continued presence of vegetation in some areas of the breach fill area, but primarily in areas to the south of the placement sites (European beach grass (*Ammophila arenaria*), Scot's broom (*Cytisus scoparius*) and Himalayan blackberry

(*Rubus discolor*)). Native vegetation does not occur in the placement sites or access corridors. The material would be transported by trucks along existing access roads and where existing roads are not present trucks would be restricted to the least impacting route. To facilitate movement of trucks and minimize disruption to soft sandy areas a temporary access route might be needed. Any material used to develop a temporary access route will be removed at the conclusion of the project.

Both the South Beach and HMB placement sites and the HMB mitigation stockpile have minimal vegetation primarily due to the frequent (approximately 2 year intervals) placement and removal (by erosion at the South Beach and HMB placement sites, and by mechanical means at the HMB mitigation stockpile site) of sand material.

Potential negative impacts to vegetation at the HMB mitigation stockpile would likely be short term and localized. The HMB mitigation stockpile has been alternately filled and depleted discouraging vegetation.

3.5 Wildlife

Terrestrial mammals, which may occur in the project vicinity, include black-tailed deer, voles, raccoon, striped skunk, and bobcat. Marine mammals found in Grays Harbor include the harbor seal, Pacific harbor porpoise, gray whale, and Steller sea lion. As the marine mammals are aquatic in habitat preference, none are expected to occur in the upland of the project area. A wide variety of migratory waterfowl, shorebirds, and seabirds frequent the project area. The western sandpiper and overwintering dunlins are particularly numerous species.

3.5.1 Alternative 1 - No Action Alternative

This alternative would allow the breach fill area to continue eroding ever reducing the amount of dry land above the + 9 feet MLLW level available for terrestrial mammals and birds. If a breach occurred there would be reduced upland areas for terrestrial mammals or birds in the area to inhabit and therefore would result in long term negative impacts due to the loss of suitable habitat for terrestrial mammals and birds.

3.5.2 Alternative 2 - Sand Pump Ashore Alternative

This alternative would continue the *status quo* by adding material as necessary, and possibly sand fencing, on top of the South Beach and HMB placement site areas, thus reducing the likelihood of a breach occurring. This in turn would continue the present situation by maintaining the sand spit, reducing the likelihood of a breach occurring, and resulting in the continued presence of terrestrial mammals and birds due to the presence of suitable habitat for these species.

Bald eagles are protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. These acts require measures to prevent bald eagle “take” resulting from human activities. Construction noise from necessary machinery may temporarily add to disturbance of wildlife in the project area, over and above the regular and prolonged disturbance that humans’ and their pets’ use of Westhaven State Park generate on wildlife in the area under the no-action alternative. However, this potential project impact would be minor, short term, and localized.

The Corps expects that the proposed action will not cause changes in the terrestrial mammal or bird species because the sand will not be placed in areas that are inhabited by birds and mammals. The lack of birds and mammals is primarily due to people and their pets (Corps 2006) using the area for recreation.

3.5.3 *Alternative 3 - Sand Placement Alternative*

This alternative would continue the *status quo* by adding material, as necessary, and possibly sand fencing, on top of the South Beach and HMB placement site areas, thus reducing the likelihood of a breach occurring. This in turn would continue the present situation by maintaining the sand spit, reducing the likelihood of a breach occurring, and resulting in continued presence of terrestrial mammals and birds. It is predicted that this alternative would result in long term beneficial impacts for wildlife.

Bald eagles are protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Construction noise (primarily dump trucks) may temporarily add to disturbance of wildlife in the project area, over and above the regular and prolonged disturbance that humans' and their pets' use of Westhaven State Park generate on wildlife in the area under the no-action alternative. However, this potential impact would be minor, short term, and localized.

The Corps expects that the proposed action will not cause changes in the terrestrial mammal or bird species because the sand will not be placed in areas that are inhabited by birds and mammals. The lack of birds and mammals is primarily due to people and their pets (Corps 2006) using the area for recreation.

3.6 Magnuson Stevens Fishery Conservation and Management Act

3.6.1 *Alternative 1 - No Action Alternative*

This alternative would allow the breach fill area to continue eroding which would not change essential fish habitat (EFH). If a breach occurred there would not be an adverse effect to EFH.

3.6.2 *Alternative 2 - Sand Pump Ashore Alternative*

The pump ashore operation would likely adversely affect EFH by allowing sand and water that escapes the settling pond to enter the intertidal zone more rapidly than would occur under natural erosion forces; also a sand/water mixture entering the adjacent water body would cause turbidity, adversely affecting EFH. The hydraulic pipeline and workers would also disrupt the intertidal zone substrate causing adverse effects on EFH. The unnatural (increased) rate at which water with some sand entered the intertidal area would likely adversely affect EFH, in particular infaunal species. This effect would likely change the infaunal community in affected areas by causing the climax community to shift to an early stage community. This condition could last for up to one year.

Once the pump ashore operation was completed, the input of material eroding from the South Beach and HMB placement sites would mimic natural erosion and help maintain sand input from the upland that promotes the dynamic nature of the intertidal area, thus continuing the *status quo* of nearshore EFH.

3.6.3 *Alternative 3 - Sand Placement Alternative*

The preferred alternative would not have adverse affects to any EFH because: 1) no significant populations of bottom-dwelling organisms have been observed in higher intertidal elevations (above +9.0 feet, MLLW) in the project area (Corps 2005); 2) the project would not appreciably change benthic habitats resulting from erosion, sloughing or lateral displacement of surrounding bottom deposits; 3) the project would not elevate turbidity levels, and therefore, would not impact aquatic vegetation or directly affect fish species. In addition, no aquatic vegetation has been observed in the project area and therefore no effects to Half Moon Bay vegetation are predicted.

3.7 Threatened and Endangered Species

Nineteen species, distinct population segments or evolutionarily significant units, listed under the Endangered Species Act (ESA) as threatened or endangered are potentially found in Grays Harbor or nearby areas. Listed species under the jurisdiction of the U.S. Fish and Wildlife Service include: western snowy plover (*Charadrius alexandrius nivosus*), marbled murrelet (*Brachyramphus marmoratus*), and bull trout (*Salvelinus confluentus*). Listed species under the jurisdiction of the National Marine Fisheries Service include: the southern resident killer whale (*Orcinus orca*), Steller sea lion (*Eumetopias jubatus*), humpback whale (*Megaptera novaeangliae*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), Sei whale (*Balaenoptera borealis*), sperm whale (*Physeter macrocephalus*), green sea turtle (*Chelonia mydas*), olive ridley sea turtle (*Lepidochelys olivacea*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), lower Columbia River Chinook salmon (*Onchorhynchus tshawytscha*), upper Willamette River Chinook salmon (*O. tshawytscha*), Columbia River chum salmon (*O. keta*), eulachon (*Thaleichthys pacificus*), and southern green sturgeon (*Acipenser medirostris*).

Information on these species' life histories and habitat usage in the Grays Harbor area, as well as impacts of the Federal navigation project maintenance dredge on these species, is provided in the 2011 Biological Evaluation (Corps 2011). This document is available as: *Biological Evaluation: Fiscal Year 2011 and Future Years Maintenance Dredging and Disposal, Grays Harbor and Chehalis River Navigation Project, Grays Harbor County, Washington* (Corps 2011).

3.7.1 Alternative 1 - No Action Alternative

This alternative could lead to a breach forming between South Beach and HMB and juvenile Chinook salmon originating in the Columbia River that would normally migrate around the western end of the South Jetty before entering Grays Harbor would have a shallow water route into Grays Harbor. This might reduce predation on the smallest juvenile Chinook salmon that favor shallow water areas to avoid aquatic predators, however by the time the juvenile Chinook salmon reach the entrance to Grays Harbor they are likely sufficiently large to already be using offshore areas for forage. Thus shallow nearshore habitat would no longer be essential for juvenile Chinook salmon. None of the other ESA listed species (see above) would be affected and thus there would be no effect to these species.

3.7.2 Alternative 2 - Sand Pump Ashore Alternative

Sand pumped ashore into a settling pond would allow some of the slurry to disperse onto the adjacent intertidal areas and into the adjacent water bodies which would affect listed species that occupy the shallow nearshore areas by displacing or temporarily burying forage organisms such as epibenthic invertebrates. Most of this affect would be minimized by conducting the project when listed species are less likely to be present. The sand and water slurry would also increase turbidity and perhaps slightly reduce foraging abilities. The likely species affected would be bull trout and its critical habitat, lower Columbia River Chinook, upper Willamette River Chinook salmon, and Columbia River chum salmon. The salmon would be affected through the possible temporary loss of forage due to changes in the shallow substrate ecology. However after the pump ashore operation was completed, the input of material eroding from the South Beach and HMB placement sites would provide a continuous supply of sand which would mimic natural erosion and help maintain sand input from the upland that promotes the dynamic nature of the intertidal area which juvenile salmonids are adapted to and prefer, thus continuing the *status quo* of the intertidal habitat.

3.7.3 *Alternative 3 - Sand Placement Alternative*

Because the placement site footprints and transport avenues are above +9 feet MLLW and in upland areas with no in water work required and in areas that do not contain any threatened and endangered species (Corps 2006) or designated critical habitat, this alternative would not result in any impacts to listed ESA listed species their designated critical habitat (See No Effect Memo-Appendix A). Juvenile Chinook salmon would continue to migrate around the western end of the South Jetty and continue to be exposed to deeper water aquatic predators. However the input of material eroding from the South Beach placement site would provide a continuous supply of sand which would help maintain the long shore transport of sand that promotes the dynamic nature of the intertidal area which juvenile salmon are adapted to and prefer, thus continuing the *status quo* of the intertidal habitat.

3.8 **Air Quality and Noise**

Grays Harbor County meets U.S. Environmental Protection Agency Ambient Air Quality Standards, and those set by Washington State for suspended particulates and sulfur dioxide. Air quality is good in the Westport area. The project site is not located in a Clean Air Act (CAA) non-attainment area.

Human caused noise in the project area is primarily the result of vessels passing through the entrance channel to Grays Harbor and vehicular traffic entering and leaving the nearby parking areas. Other sources of noise include wind, surf and occasional aircraft passing overhead.

3.8.1 *Alternative 1 - No Action Alternative*

This alternative would likely have an effect on air quality and noise because if a breach were to occur it would likely reduce the area of Westhaven State Park. In order to maintain the South Jetty for navigation reliability there would be increased maintenance activities if a breach channel was left open. This would likely require more frequent repair to the South Jetty to ensure scour did not undermine the structure. If the South Jetty remains connected to land, it will not be undermined. Simultaneously there would likely be a reduction in the number of people visiting the park and the number of vehicles parking in nearby parking areas. There would be changes in air pollution and noise as a result of increases in South Jetty maintenance and a reduction in park visitors. Overall there would likely be a slight increase in air pollution and noise as increases in the effects due to maintenance construction activities would likely be greater than the effects of corresponding reductions in park visitor activities.

3.8.2 *Alternative 2 - Sand Placement Alternative*

This alternative would continue the *status quo* by adding sand, as necessary and possibly sand fencing, to the top of the South Beach and HMB placement site areas, reducing the likelihood of a breach occurring, resulting in Westhaven State Park retaining its current size and thus the present volume of users (people and vehicles). The sand pump ashore alternative would not result in significant air quality degradation. During construction, there would be temporary and localized reduction in air quality due to emissions from offshore pumping machinery placing sand at the placement sites. Pump ashore equipment, including shoreside bull dozers and/or excavators would generate gasoline and diesel exhaust fumes, particulates, carbon monoxide, nitrogen and sulfur oxides, hydrocarbons, and unburned carbon particles. Assuming 80 gallons of fuel per hour for 3 weeks, an estimated maximum of 1.06 tons of particulates would be generated by a pump ashore episode. During this time period, the air quality emissions from the pump ashore equipment would not exceed CAA *de minimis* levels for criteria pollutants.

3.8.3 *Alternative 3 - Sand Placement Alternative*

This alternative would continue the *status quo* by adding sand, as necessary and possibly sand fencing, to the top of the South Beach and HMB placement site areas, reducing the likelihood of a breach occurring. Assuming the quarry was located within 25 miles of the project site, an estimated maximum of 0.33 tons of particulates would be generated by a placement episode that required an upland source material. Transfer of material from the mitigation stockpile would generate about 0.01 tons of particulates. This alternative would result in greater air pollution compared to the no action alternative, but would still be under *de minimis* levels for criteria pollutants. Thus, the sand placement alternative would not result in significant air quality degradation. During construction, there would be temporary and localized reduction in air quality due to emissions from heavy machinery (primarily dump trucks) placing sand at the placement sites. Construction vehicles and heavy equipment would generate gasoline and diesel exhaust fumes, particulates, carbon monoxide, nitrogen and sulfur oxides, hydrocarbons, unburned carbon particles and dust on roadways. The work would take up to 60 days to complete. Even during this time period, the air quality emissions from the construction equipment would not exceed CAA *de minimis* levels for criteria pollutants and would be considered minor and localized.

3.9 **Greenhouse Gas Emissions**

The primary greenhouse gases in the atmosphere are carbon dioxide, methane, and water vapor. The characteristic these gases have in common is that they absorb radiation within the thermal infrared range, which is the fundamental cause of the “greenhouse effect”. Anthropogenic sources of greenhouse gases have been increasing over the past 150 years, and have reached a rate of contribution that is causing climate change. The concern for Federal projects is the contribution of greenhouse gases to the atmosphere in such large quantities as to outweigh the benefit of executing the proposed action.

3.9.1 *Alternative 1 - No-Action Alternative*

In order to maintain the South Jetty for navigation reliability there would be increased maintenance activities if a breach channel was left open. This would likely require more frequent repair to the South Jetty to ensure scour did not undermine the structure. If the South Jetty remains connected to land, it will not be undermined. Simultaneously there would likely be a reduction in the number of people visiting the park and the number of vehicles parking in nearby parking areas. There would be changes in greenhouse gas emissions as a result of increases in South Jetty maintenance and a reduction in park visitors. Overall, it is predicted based on a qualitative assessment that there would likely be a slight increase in greenhouse gas emissions as increases in the effects due to maintenance construction activities would likely be greater than corresponding reductions in effects of park visitor activities. It is impossible to quantify greenhouse gas emissions due to the inability to predict with certainty the likely actions that may occur in the future.

3.9.2 *Alternative 2 - Sand Pump Ashore Alternative*

All of the fossil fueled machinery associated with pumping sand ashore would emit carbon dioxide and water vapor (both powerful greenhouse gases). If the need for the action is to be met, then there is no practical alternative to hydrocarbon (primarily fossil fuel) powered vehicles. Greenhouse gases released from the pump ashore equipment would be greater than those released under the no action alternative. An estimated 450 tons of carbon dioxide would be produced during pump ashore activities (assumes 80 gallons per hour of fuel for 3 weeks for all

machinery associated with the pump ashore operation). Total world production in 2005 was over 5000 million tons; the effect of the action would be insignificant exacerbation of effects of CO₂ emissions on global climate change. In addition, the Corps has designed the project to minimize the total quantity of material to be pumped ashore, which thereby minimizes the total quantity of greenhouse gases emitted during the project. Greenhouse gas would accumulate, and there is nothing proposed to mitigate for these gases generated during the project. This alternative would add to the total greenhouse gas atmospheric burden, but the quantity of emissions would be considered minor and a fraction of all anthropogenic sources of greenhouse gases. Therefore, this alternative would not be considered a significant contributor to global greenhouse gas emissions.

3.9.3 Alternative 3 - Sand Placement Alternative

All of the fossil fueled machinery associated with the project would emit carbon dioxide and water vapor (both powerful greenhouse gases). If the need for the action is to be met, then there is no practical alternative to hydrocarbon (primarily fossil fuel) powered vehicles. Greenhouse gases released from the transport trucks would be greater than those released under the no action alternative. An estimated 140 tons of carbon dioxide would be produced by the project (assumes the sand quarry is within 25 miles of the project site). About 2.8 tons of carbon dioxide would be produced if the source material was the mitigation stockpile. Total world production in 2005 was over 5000 million tons; the effect of the action would be insignificant exacerbation of effects of CO₂ emissions on global climate change. In addition, the Corps has designed the project to minimize the total quantity of material to be transported, which thereby minimizes the total quantity of greenhouse gases emitted during the project. Greenhouse gas would accumulate, and there is nothing proposed to mitigate for these gases generated during the project. This alternative would add to the total greenhouse gas atmospheric burden, but the quantity of emissions would be considered minor and a fraction of all anthropogenic sources of greenhouse gases. Therefore, this alternative is not considered to be a significant contributor to global greenhouse gas emissions.

3.10 Recreation

Westhaven State Park is located south of South Jetty and adjacent to HMB in an area which accreted after construction of the jetty. This park is almost 80 acres in extent and has 1,215 feet of salt water frontage. Westhaven State Park is a day-use facility with a parking area, picnic tables and ADA unisex restrooms. In December of 1987, winter storms washed away the restroom, 2 picnic sites and much of a paved parking area. Recreation occurring in the project area includes wave riding (standup surfing, knee boarding, body boarding, body surfing), kayaking, windsurfing, scuba diving, surf fishing, crabbing, beach combing, strolling, kite flying, picnicking, and associated activities.

Recreational use of HMB occurs year-round. The HMB shoreline is in close proximity to the ocean coast yet is sheltered from the most severe elements. During times of stormy weather that are frequent throughout the fall, winter and spring, HMB serves as a haven for beachgoers and water recreationists. Public access to the beach is by walking from either the Westhaven State Park parking area or a parking lot at the northeast end of HMB. Parking on the sand berm between the U.S. Coast Guard Rear Range and the U.S. Coast Guard Surf Tower occurs, but this area is not a designated parking lot. Parking lots in this area are proposed for development by the City of Westport, in conjunction with a pedestrian trail that is proposed on the Point Chehalis revetment extension. Another parking area is planned for development near the U.S. Coast Guard Surf Tower.

Wave riding/surfing is a popular activity in the Westhaven State Park/HMB area. The three

prime surfing locations include South Beach near the South Jetty, HMB, and the groin area of the Point Chehalis revetment. Surfers report that one of these three spots usually produces rideable waves, making this an all-season surfing locale on the Washington coast. The HMB is sheltered from wind and direct swell conditions, unlike open ocean beaches. Deeper water in the harbor entrance allows swells to gain momentum before shoaling up offshore to produce smoothly breaking waves which are sought by surfers. Conditions in HMB frequently allow surfing waves during the fall, winter and spring. Nearshore dredged material disposal operations in HMB have reportedly contributed to the offshore shoaling of swells, further enhancing surf breaks which provide rideable waves.

3.10.1 Alternative 1 - No Action Alternative

This alternative would allow erosion to continue leading to a likely breach, which would likely result in a change in ocean conditions occurring in the HMB area resulting in less desirable conditions for surfing, in its various forms. Beach walking would become more hazardous during late fall through mid spring, and the size of Westhaven State Park would be reduced, reducing day use opportunities for tourists.

3.10.2 Alternative 2 - Sand Pump Ashore Alternative

This alternative would continue the present situation by adding material, as necessary, and possibly sand fencing, to the top of the South Beach and HMB placement site areas, reducing the likelihood of a breach occurring. This action would retain the *status quo* of Westhaven State Park and HMB, maintaining recreational opportunities as they currently exist. However during construction there would be short term negative impacts to recreational opportunities as visitors to Westhaven State Park would be restricted from entering areas where construction is occurring. Park visitors may be required to detour around the construction zone. Efforts would be made to minimize disturbances to local traffic patterns during construction through appropriate work hours, signage, notifications and proper traffic controls. It is anticipated that traffic impacts would be minor, localized, and not significant.

The sand material would be redistributed by bull dozers and/or excavators during the pump ashore operation surface, any hillocks resulting from construction would rapidly disappear as a result of wind erosion redistributing the sand material.

3.10.3 Alternative 3 - Sand Placement Alternative

This alternative would continue the present situation by adding material, as necessary, and possibly sand fencing, to the top of the South Beach and HMB placement site areas, reducing the likelihood of a breach occurring. This action would retain the *status quo* of Westhaven State Park and HMB, thus maintaining recreational opportunities as they currently exist. However during construction there would be short term negative impacts to recreational opportunities as visitors to Westhaven State Park would be restricted from entering areas where construction is occurring. Construction-related traffic, which would be greater compared to the pump ashore alternative, would disrupt visitors to Westhaven State Park during construction. Park visitors may be required to detour around the construction zone. Efforts would be made to minimize disturbances to local traffic patterns during construction through appropriate work hours, signage, notifications and proper traffic controls. It is anticipated that traffic impacts would be minor, localized, and not significant.

The land surface would be different after sand placement, but any hillocks resulting from construction would rapidly disappear as a result of wind erosion moving sand from high to low spots.

3.11 Historic and Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 requires that the effects of proposed actions on sites, buildings, structures, or objects included or eligible for the National Register of Historic Places must be identified and evaluated. The project area is composed of fill material and recently deposited sand, which precludes the possibility of prehistoric or early historic-period archeological deposits being present. A professional pedestrian archeological survey of the project area in late 2003 conducted by the Corps did not produce evidence of possible shipwreck remains. Background research indicates that there are no reported shipwrecks within the project area. Prior to the 2004 sand placement the Corps sent a letter report to the Washington State Historic Preservation Officer (SHPO) stating the negative results of the archeological survey and background research and recommending a determination of no historic properties affected for the project. A letter concurring with this determination was received from the SHPO on September 29, 2003. The overall project footprint has not changed since the large (600,000 cy) 1994 breach fill. With the exception of the material source (the HMB mitigation stockpile and an upland quarry), the project does not involve excavation. The project adds additional material, as necessary to highly disturbed sites that have had multiple episodes of material added to it over the years. This has been done in an attempt to slow the erosion process in an area of very high energy and strong natural erosive forces. Further document review by Corps archeologists indicate that the project area has a low probability for the existence of properties that could be eligible for listing in the National Register of Historic Places. More pertinently, the nature of the undertaking (maintenance work within an existing Corps structure) is of a type that has no potential to cause effects to historic properties. Accordingly, no additional work beyond inclusion of this document evidencing the Corps' compliance with Section 106 in the permanent project files is necessary.

3.11.1 Alternative 1 - No Action Alternative

This alternative would have no effect on any historic and cultural resources because there are no identified cultural or historic properties in the project areas.

3.11.2 Alternative 2 - Sand Placement Alternative

This alternative would have no effect on any historic and cultural resources because there are no identified cultural or historic properties in the project areas.

3.11.3 Alternative 3 - Sand Placement Alternative

This alternative would have no effect on any historic and cultural resources because there are no identified cultural or historic properties in the project areas.

3.12 Indian Treaty Rights

Indian tribes with interest in the project area include the Quinault Indian Nation (QIN) based at Taholah, Washington, the Chehalis Indian Tribe located at Oakville, Washington, and the Shoalwater Bay Indians at Tokeland, Washington.

The concerns of greatest importance include treaty rights, especially rights to fish in the Grays Harbor area, access to plant materials used in making traditional crafts, preservation of sacred sites important in the practice of traditional Indian religion, and preservation of fish habitat. Traditional Indian usage of the Grays Harbor area has been documented in a Corps-sponsored ethno history of the project area (James and Martino 1986). Only the QIN has a reservation established by treaty, and they have adjudicated rights to off-reservation usual and accustomed sites within Grays Harbor. The other groups have reservations established by executive order,

but they do not have the same off-reservation treaty rights at usual and accustomed locations.

3.12.1 Alternative 1 - No-Action Alternative

This alternative would have no effect on any Indian Treaty Rights because there are no usual and accustomed areas under Tribal treaty rights in the project areas and the nature of the actions would not adversely affect such waters.

3.12.2 Alternative 2 - Sand Pump Ashore Alternative

This alternative would not change access to usual and accustomed fishing, shell fishing, or collecting areas; therefore, effects are deemed insignificant. There would be no effect to Indian Treaty Rights from the pump ashore equipment because there are no usual and accustomed areas under Tribal treaty rights in the project areas and the nature of the actions would not adversely affect such waters.

3.12.3 Alternative 3 - Sand Placement Alternative

This alternative would not change access to usual and accustomed fishing, shell fishing, or collecting areas; therefore, effects are deemed insignificant. There would be no effect to Indian Treaty Rights at the sand quarry because there are no usual and accustomed areas under Tribal treaty rights in the project areas and the nature of the actions would not adversely affect such waters.

3.13 Hazardous, Toxic and Radioactive Waste

Sand would come from a local quarry and/or the HMB mitigation stockpile. The local area is low lying and has accreted from material that likely originated from the Columbia and/or the Chehalis rivers and was moved ashore by currents and wind driven waves resulting in the present low elevation, sandy, area.

3.13.1 Alternative 1 - No-Action Alternative

This alternative would have no effect on Hazardous, Toxic and Radioactive Waste (HTRW).

3.13.2 Alternative 2 - Sand Pump Ashore Alternative

Sediment quality characteristics of the pump ashore material are the same as the material already in the breach fill (they are both from maintenance dredging in Grays Harbor). Therefore, pump ashore sand would have no effect on the environment in the breach fill area or on HTRW.

3.13.3 Alternative 3 - Sand Placement Alternative

Sediment quality characteristics of the placed material will be substantially similar to those of the existing materials (Tables 1 and 2, section 2.2.5), so as to constitute no more than *de minimis* changes in the character of the existing sands in the breach footprint, as long as the materials placed in this action are (1) marine sands dredged from the adjoining reaches of the navigation channel, or (2) derived from an upland source and meet the characteristics delineated in section 2.3.6. Therefore using sand from a local quarry would have no effect on the environment in the breach fill area or on HTRW.

4 SUMMARY OF ENVIRONMENTAL EFFECTS OF THE PREFERRED ALTERNATIVE- ALTERNATIVE 3

Implementation of the preferred alternative (Alternative 3) would replace, as necessary, breach fill marine sands material lost through normal erosion processes. Increasing the height (elevation) of the South Beach placement site would reduce the risk of water overtopping the

spit, and therefore the risk of a catastrophic breach, but would not slow the erosion rate. Recurring sand placement would likely be required to maintain the height of the breach fill and/or shoreline position in this high energy environment. Approximately 3 acres of upland would be impacted by sand placement in the South Beach and HMB placement sites (2.2 acres at the South Beach placement site, 0.8 acres at the HMB placement site). Intertidal habitat would be naturally affected under the no-action alternative via erosion of material from the South Beach and HMB placement sites into the adjacent intertidal areas. The existing beach substrate is predominately sand and the placed material would be of similar characteristics to the native material (see Table 1 above) and thus there would not be any significant change in the beach substrate due to implementation of the preferred alternative.

5 COORDINATION

The Notice of Preparation (Appendix B) for the proposed project was issued on 15 June 2012. Seattle District has coordinated with Federal and state agencies regarding sand placement on the placement sites. Coordination activities would continue for the FY12 through FY18 period to notify stakeholders and adapt to changing conditions.

Coordination or consultation was conducted with the following entities and agencies:

- National Marine Fisheries Service
- United States Fish and Wildlife Service
- Interagency Dredged Material Management Program
 - The Corps
 - Washington State Department of Natural Resources (DNR)
 - Washington State Department of Ecology
- U.S. Environmental Protection Agency
- City of Westport
- Quinault Indian Nation

One comment was received. The EPA encouraged the Corps to expand the supplemental EA analysis to include the potential for direct pump off of dredge material to the South Beach and HMB placement sites. The Corps acknowledges this as falling within a reasonable range of alternatives and has considered a pump ashore alternative in this EA under alternative 2.

6 CUMULATIVE EFFECTS

Cumulative impacts result from the individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). NEPA requires the evaluation of cumulative impacts to assess the overall effect of a proposed action on resources, ecosystems, or human communities in light of past, present, and reasonably foreseeable future projects. The cumulative impact analysis includes actions by Federal, non-Federal, and private entities.

The cumulative effects of HMB and vicinity maintenance activities up to February 2004 are discussed in Section 7 and Appendix B of the February 2004 South Jetty Breach Fill Maintenance Final EA (Corps 2004). The FY12 through FY18 interim actions, implemented in response to trigger thresholds being reached, would merely maintain the *status quo* through the placement of sand on the South Beach and HMB placement sites to protect against an undue risk of a breach developing in the sand spit adjacent to South Jetty. The interim contingency actions would simply be replacing sand lost to erosive forces. Truck transport would be primarily confined to the existing state park access road. Dune grass areas would be avoided and thus preserved. Contingent interim actions, if implemented, would also function to preserve the *status*

quo, and would not produce any incremental or cumulative environmental effects on biological resources or recreational uses of the South Jetty, HMB, and surrounding area.

6.1 Baseline Conditions for Cumulative Effects Analysis

The historic habitats of the lower Chehalis River and Grays Harbor have been altered by previous dredging, diking, filling, jetty construction, industrial discharges, and other anthropogenic activities over the past century. These activities have resulted in loss of wetland and other intertidal habitats, conversion of shallow water habitats to deeper water, erosion and migration of sand islands, and a minor reduction in water quality. By one estimate, approximately 14,579 acres or 30 percent of historic intertidal habitats have been lost (Smith and Wenger 2001). Degradation of ecological function associated with these changes has affected the capacity of these habitats to support fish and wildlife populations. While historic impacts have been detrimental to the natural environment, the cumulative effects of dredging on the human environment have supported economic use of the area by removing hazardous areas of shoaling, promoting ocean going commercial vessel access to the Port of Grays Harbor, and direct employment of many people by the Port of Grays Harbor and associated industries and businesses.

6.2 Past, Present, and Reasonably Foreseeable Future Actions

Annual maintenance dredging by the Corps is likely to continue into the foreseeable future. Annual maintenance dredging removes up to 3.2 million cy of material from the navigation channel. Also the Port of Grays Harbor removes up to 70,000 cy of material annually from the port facilities. Some level of annual maintenance dredging has occurred every year since 1910, but no new areas have been dredged and no new disposal sites have been designated since the late 1990s. Up to 1,725 acres are disturbed by the Corps' annual maintenance dredging, with an additional 697 acres disturbed by disposal of dredged material. This area is equivalent to approximately 12 percent of the total acreage of subtidal habitat in Grays Harbor. Only areas previously designated as navigation channel or disposal sites are disturbed. Dredged material disposal practices no longer contribute to the conversion of intertidal wetlands to uplands.

The Port of Grays Harbor conducts maintenance dredging of their marine terminal facilities adjacent to the Federal navigation channel, where an average of 30,000 cy (maximum of 70,000 cy) is removed annually. Impacts of and regulatory restrictions on Port dredging are similar to those of the Corps dredging program, but the scale of Port dredging activities is smaller. Other Corps studies and activities in Grays Harbor are described in Sections below. At this time, the outcome of these studies is too uncertain for any specific projects to be considered as reasonably foreseeable future actions and included in this analysis.

6.2.1 Grays Harbor Long Term Management Study

Features of the Grays Harbor and Chehalis River Navigation Project include the navigation channel, the North and South Jetties, and the Point Chehalis revetment. The Corps' mission is to maintain all of these features in order to provide safe navigation in Grays Harbor. The Seattle District Corps is currently conducting a study, the Grays Harbor LTMS, to identify the most cost-effective and least environmentally damaging strategy to operate and maintain the Federal project in Grays Harbor. The LTMS is evaluating the implications of the persistent loss of sediment from the Grays Harbor entrance (including North Beach and South Beach), which is expected to continue indefinitely. Without intervention, shoreline erosion near the South Jetty would eventually breach the sand spit between South Beach and HMB adjacent to the South Jetty.

Four alternatives were screened through the LTMS' Multi-Criteria Decision Analysis process. The Corps is concluding its environmental evaluations to support a decision document for approval of the LTMS recommended plan. Preparation of a separate LTMS NEPA analysis would occur simultaneously with formulation of a recommended plan. Implementation of the breach fill maintenance project evaluated herein would extend through the period FY12 through FY18, or until actions to preserve the *status quo* are rendered moot by full implementation of LTMS measures, whichever occurs first.

6.2.2 Navigation Improvement Project

Section 202 of the Water Resources Development Act of 1986 authorized the Grays Harbor Navigation Improvement Project (NIP) and a channel depth of 38 feet. The NIP planned for modifications to 23.5 miles of channel. In 1991, the Corps completed the deepening of 19.7 miles of downstream channel (Bar Channel to Cow Point Reach), and the widening of the Cow Point Turning Basin to 900 feet. In 1990, the Corps completed the deepening of 3.8 miles of upstream channel (South Aberdeen Reach), and the widening of the Cow Point Turning Basin to 950 feet. The Corps only deepened to -36 feet because there was determined at that time to be insufficient economic justification to deepen to 38 feet (Corps 1989). This project has been completed.

The Port of Grays Harbor has requested that the Corps review the NIP to consider deepening the downstream channel (Cow Point to South Reach) to the full authorized depth of 38 feet. The Corps is working in cooperation with the Port of Grays Harbor to assess the economic viability of this channel deepening. If further deepening is found to be economically feasible, then, dependent on funding availability, the Corps would proceed with design and environmental evaluations to prepare a decision document for approval. Preparation of a separate NEPA document would occur simultaneously with formulation of a recommended plan. This project is in an early stage and not ready to be reviewed under the NEPA process.

6.2.3 Summary

Natural resources in the Grays Harbor area are affected by maintaining the navigation channel allowing greater intrusion of salt water at depth and thus increasing the abundance of marine fauna in the deep parts of Grays Harbor. The proposed project would perpetuate this phenomenon. If the NIP was approved and further deepening occurred the intrusion of salt water and abundance of marine fauna would increase. If the proposed LTMS preferred alternative is instituted the South Jetty could be extended about 500 feet eastward, and the eastern extension of the North Jetty could be partially removed to allow salmonid access to the wetland complex adjacent to the North Jetty extension at all tide stages. This would increase forage opportunities for salmonids and slightly reduce predation on emigrating juvenile salmon. The eastward extension of the South Jetty may reduce the frequency of material placement to maintain the sand spit. Taken together these actions would have minor cumulative effects on natural resources in Grays Harbor and maintain the *status quo* of the commercial and recreational activities in the Grays Harbor area.

6.3 Incremental Effects of the Proposed Action

The no action alternative would have little or no effect on the natural processes of the area. The preferred alternative (Alternative 3) of the proposed project would have direct and indirect effects on the natural environment, but these effects would be insignificant and are not expected to add a significant incremental impact; rather, the proposed action would facilitate a continuation of the current type and intensity of human use of the project area. Direct effects

associated with the proposed action would occur only in areas previously disturbed by maintenance activities. Sand placement and sand fencing contributes to shoreline protection in areas that may experience breaches. Therefore, the human environment is benefited by past, present, and future maintenance. These actions are designed to safeguard navigation and human activities within Grays Harbor and Westhaven State Park. In the context of past, present, and reasonably foreseeable actions, the incremental effect of placing sand and sand fencing would not result in significant cumulative effects.

7 ENVIRONMENTAL COMPLIANCE

The Corps has analyzed the environmental effects of the alternatives and the following sections describe how the preferred alternative complies with all pertinent environmental laws and executive orders.

7.1 National Environmental Policy Act

In accordance with NEPA, Federal agencies are required to declare the potential environmental effects of their projects and to solicit public comment. The purpose of this document is to solicit public comment and fulfill the Corps of Engineers' requirements under NEPA, and provide a basis for informed decision making. Public comments on the proposal were solicited via a Notice of Preparation (Appendix B) promulgated on 15 June 2012. This final supplemental EA includes a response to the single comment (Appendix C) received in reply to the Notice of Preparation.

7.2 Endangered Species Act, as amended. 16 U.S.C. 1531, et seq

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded projects must take into consideration impacts to federally listed or proposed threatened or endangered species. The project will be conducted entirely upland (landward of the +9 feet MLLW) and in an area where terrestrial ESA listed species are not known to occur (Corps 2006). As discussed in Appendix A, the Corps has determined that the sand placement project (Alternative 3) would have no effect on any threatened or endangered species in the project area. There would be no effect on designated critical habitat for any listed species. A "no effect" determination does not require consultation with the Services.

7.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act require Federal agencies to consult with NMFS regarding actions that may adversely affect EFH for Pacific coast ground fish, coastal pelagic species, and Pacific salmon. The Act defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Descriptions of EFH are provided in Fishery Management Plans produced by the Pacific Fisheries Management Council. In this project (Alternative 3), all of the material will be placed, and work will be done, above MHHW. The material placed at this elevation would exhibit no more than *de minimis* difference in character from the material already present in the breach fill area, will enter the intertidal area at naturally occurring erosion rates, and help maintain the intertidal area. Therefore, the Corps has determined that there would be no adverse effect on EFH as result of the project, and consultation under the MSA is not required if there are no adverse effects to EFH as a result of a project.

7.4 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, requires Federal agencies to carry out their activities in a manner which is consistent to the maximum extent practicable with the enforceable policies of the approved state Coastal Zone Management Program. The Corps

prepared a CZMA Consistency Determination (CD) for the proposed action to ensure that the proposed work is consistent to the maximum extent practicable with the enforceable policies, general conditions, and general activities specified in the City of Westport Shoreline Management Master Plan and the State of Washington Shoreline Management Program. The Corps submitted a request to Ecology for concurrence with its FY12-18 CD (Appendix D) on 9 August 2012. Via an e-mail dated 24 August 2012, Ecology renewed the consistency concurrence issued for the similar action in 2004 (a copy of the email is in Appendix E).

7.5 National Historic Preservation Act

Section 106 of the NHPA requires that the effects of proposed actions on sites, buildings, structures, or objects included or eligible for the NRHP must be identified and evaluated. In 2003, a pedestrian archaeological survey of the project was conducted by the Corps. No cultural resources were identified during the pedestrian survey. In addition, the project area is composed of fill material and recently deposited sand, which precludes the possibility of prehistoric or early historic-period archeological deposits being present. A review of the Washington Information System for Architectural and Archaeological Records Database indicated that there are no cultural resources recorded within or adjacent to the project area. Prior to the 2004 sand placement, the Corps sent a letter report to the Washington SHPO stating the negative results of the archeological survey and background research and recommending a determination of no historic properties affected for the project. A letter concurring with this determination was received from the SHPO on September 29, 2003. Further document review by Corps archeologists indicates that the project area has low probability for the existence of properties that could be eligible for listing in the NRHP. More pertinently, the nature of the undertaking is of a type that has “no potential to cause effects to historic properties.” Therefore, it is anticipated that there would be no impact to cultural resources due to the lack of any resources being known to occur in the impact area.

7.6 Clean Air Act, as amended, 42 U.S.C 7401 et seq

The purpose of this Act is to protect public health and welfare by the control of air pollution at its source. Some temporary mobile source emission releases are expected during construction (sand hauling and placement) activities. Construction vehicles and heavy equipment would temporarily and locally generate gasoline and diesel exhaust fumes. These emissions would be exempt from the conformity requirements under the Clean Air Act, because the project constitutes a routine facility repair activity generating an increase in emissions that is clearly *de minimis*, under 40 CFR 93.153(c)(2)(iv).

7.7 Clean Water Act

The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters (33 U.S.C. 1251). The Corps regulates the discharges of dredge or fill material into waters of the United States pursuant to Section 404 of the Clean Water Act. This permitting authority applies to all waters of the U.S., including navigable waters and wetlands. The selection of disposal sites for dredged or fill material is done in accordance with Section 404(b)(1) guidelines, which were developed by the U.S. Environmental Protection Agency (EPA) (see 40 CFR Part 230). Sand placement would fall completely within the footprint of the previously authorized breach fill, and would utilize marine sands dredged from navigation channel sources identical to the existing sands, or sands derived from a suitable upland source meeting the same pertinent characteristics. As the sand placement would not alter the character, scope, or design of the initial 1994 breach fill placement, the proposed action would constitute maintenance of a dike or similar structure, as the breach fill was constructed as

an engineered barrier between the Pacific Ocean on one side, and Half Moon Bay and the infrastructure of the City of Westport on the other. The breach fill is appropriately characterized as a “structure” even though it was not constructed with traditional durable materials, but with natural sands that were intended to mimic natural accretion, decretion, and erosion characteristics over time. The consequences of these natural processes were intended to be addressed through maintenance on a periodic basis, as required, or through other responsive measures deemed necessary. Thus, although not a typical dike, the breach fill is an engineered structure designed to control water, and such placements of material for repair and maintenance purposes are therefore exempt from the requirements of Section 404 under Section 404(f)(1)(B) of the Clean Water Act. Because no work subject to regulation under Section 404 is being conducted, a Section 401 certification is not required.

7.8 Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) as amended

The Migratory Bird Treaty Act (MBTA) of 1918 is the domestic law that affirms, or implements, the United States’ commitment to four international conventions with Canada, Japan, Mexico, and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possessing, transporting, and importing of migratory birds, their eggs, parts, and nests. Minor construction related impacts to migratory birds may occur; however, the breach fill area is disturbed habitat due to the high energy environment and the heavy use by humans and their pets (primarily dogs). Truck traffic and related noise would be restricted as much as possible to existing roadways, a sand quarry, and access to the site would only be via the existing Westhaven State Park access road. Impacts to area dune grass would be minimized as fill areas are largely restricted to un-vegetated eroded areas. No significant impacts to migratory birds are expected. No permits or authorizations for incidental take of migratory birds are required.

7.9 Environmental Justice (E.O. 12898)

Executive Order 12898 directs every Federal agency to identify and address disproportionately high and adverse human health or environmental effects of agency programs and activities on minority and low-income populations.

The QIN constitutes a distinct, separate community of Native Americans who rely on Treaty-reserved fish for subsistence, economic, and spiritual purposes. Sand spit maintenance is not expected to result in any disproportionate adverse environmental effects or impacts on the health of tribal members, or other minority/low-income populations. No interference with treaty rights is anticipated.

The project does not involve placement of a facility that would discharge pollutants or contaminants. Therefore, no human health effects would occur. Maintenance of the existing breach fill and construction of sand fencing would not negatively affect property values in the area, or socially stigmatize local residents or businesses.

7.10 Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972, as amended, prohibits the taking of marine mammals by citizens of the United States except under certain conditions (16 U.S.C. 1361). Several species of marine mammals can be found in Grays Harbor, and harbor seals and sea lions may occasionally be found in the lower Chehalis River, but are not frequently observed in the project area. Grays Harbor has several documented haul-out areas used regularly by harbor seals, but none of these sites are in the project area (Jeffries et al. 2000). Considering the infrequent occurrence of marine mammals in the project area and that the project will not affect a significant portion of the forage range of marine mammals in Grays Harbor, it is unlikely that

seals or sea lions would encounter the project. No permits or authorizations for incidental take or harassment of marine mammals are required.

7.11 Floodplain Management (E.O. 11988)

Executive Order 11988 requires Federal agencies to consider how their activities may encourage future development in floodplains. The breach fill maintenance project would not encourage additional development.

8 UNAVOIDABLE ADVERSE IMPACTS

The primary unavoidable adverse impact would be a minor disruption of the terrestrial community at the South Beach and HMB placement sites. Because of the numerous disruptions (multiple sand placements and continuing erosion) in these locations the terrestrial and intertidal communities are likely composed of organisms that favor disturbed areas. Other animals may transit the South Beach and HMB placement sites, but likely do not reside there. There would be a minor increase in air pollution and greenhouse gases in the area.

9 COMPARISON OF NO-ACTION (ALTERNATIVE 1), SAND PUMP ASHORE (ALTERNATIVE 2), AND PREFERRED ALTERNATIVE (ALTERNATIVE 3)

The no action alternative (alternative 1) would not meet the purpose and need of the project while sand pump ashore and sand placement alternatives (alternatives 2 and 3 respectively) would meet the purpose and need of the project. The sand pump ashore alternative could affect ESA listed species (bull trout and its critical habitat, lower Columbia River Chinook upper Willamette River Chinook salmon, Columbia River chum salmon, eulachon and green sturgeon) and disrupt intertidal substrate and water quality, and EFH in the project vicinity, which the preferred alternative would not. The preferred alternative (alternative 3) and the sand pump ashore alternative (alternative 2) would maintain Westhaven State Park, allowing continued heavy human use of the park and associated pet use and vehicle parking. The atmospheric environment would continue to be indirectly affected by the sand pump ashore and preferred alternatives (alternatives 2 and 3) because these alternatives would assist in maintaining the Grays Harbor entrance channel allowing commercial vessel traffic through Grays Harbor and continued vehicular access to Westhaven State Park.

The no action alternative (alternative 1) would be the least costly, but would likely allow a breach to occur that would destroy a portion of Westhaven State Park and would likely cause a change in the water current dynamics in the Grays Harbor entrance channel. Any change in water current dynamics would likely be detrimental to commercial shipping to the Port of Grays Harbor. If the navigation channel was negatively affected, the result would be a major effect on the local economy because there would be fewer jobs for local people. The sand pump ashore (alternative 2) and preferred alternative (alternative 3) would avert these potential problems.

The no action alternative (alternative 1) was rejected because it does not meet the purpose and need for the project. The sand pump ashore alternative (alternative 2) would achieve the project purpose, but would have greater negative environmental effects on the intertidal zone and aquatic environment than the preferred alternative (alternative 3). Specifically, the sand pump ashore alternative would directly affect the adjacent intertidal zone and nearby water body as a result of decanted water (with some suspended sand) filtering through the constructed berms and through the native substrate onto the intertidal zone and into the adjacent water body. The sand pump ashore (alternative 2) would likely have some negative effects to those ESA listed species that occurred in the nearshore areas during the pump ashore operation and may also adversely affect EFH in the nearshore area. The pipeline that brought the sand and water slurry to the placement

site would cross the intertidal zone disrupting the intertidal substrate. Also the sand pump ashore alternative requires construction workers on the intertidal zone maintaining the pipeline adding to the disruption of this area. For these reasons the sand pump ashore (alternative 2) was rejected. In light of the placement volumes involved, up to 15,000 cy and 30,000 cy under Responsive Action No. 1 and Responsive Action No. 2, respectively, Alternative 2 would also be significantly more expensive than Alternative 3, and thus a less cost-effective means of achieving the purpose and need.

The preferred alternative (alternative 3) is recommended because it would fully achieve the project purpose, has minimal environmental impacts, would be cost effective relative to meeting the purpose and need of the proposed project, and would perpetuate the present circumstances of maintaining the sand spit that connects South Jetty and the land mass to the south, separating HMB from the Pacific Ocean and maintaining the water current dynamics of the Grays Harbor entrance channel.

10 CONCLUSION

Overall there would be general non-significant effects to the environment of Grays Harbor because the preferred alternative (alternative 3) would not generate significant impacts on the quality of the human or natural environment, and the preparation of an Environmental Impact Statement is thus not required. A finding of no significant impact is provided in Appendix F.

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APPENDIX A: NO EFFECT ENDANGERED SPECIES ACT MEMORANDUM

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MEMORANDUM FOR RECORD

SUBJECT: No Effect Determination for Endangered Species Act Listed Species and Critical Habitat in the Grays Harbor Sand Placement Project Area.

1. After winter storms breached the sand spit adjacent to the Grays Harbor South Jetty in 1993, the Corps placed about 600,000 cubic yards (cy) of sand to close the breach until a “long term solution” could be developed. Sand placement has occurred four times, 2001 (135,000 cy), 2004 (two placement episodes of 29,500 and 22,780 cy, respectively) and 2010 (30,000 cy) since 1993. Rapid erosion has continued and if left unchecked would likely result in the formation of another breach just south of the South Jetty allowing the ocean direct tidal communication between South Beach and Half Moon Bay. An interim action is necessary, and there may be others in the future, to protect against undue risk of formation of a breach and consequent threat to the stability and maintenance of the features of the Federal navigation project until actions to maintain the *status quo* have been rendered moot by full implementation of Long-Term Management Strategy Measures or through FY 2018, whichever occurs first.
2. Repairs are intended to address erosion caused by winter storm events when the breach fill area shows signs of either waves washing over the sand spit that connects South Jetty with the adjacent mainland at the entrance to Grays Harbor, or it is determined through survey data that 15,000 cubic yards (cy) or more of sand has eroded from the southwest corner of Half Moon Bay (HMB) beach. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement the placement of sand once the thresholds are reached. All placement locations would be above mean higher high water. Breach fill responsive action events would take sand material from the Half Moon Bay mitigation stockpile, which may be refilled through beneficial use, or sand material acquired from an upland source and trucked overland to the sand placement sites.
3. The initial phase of the project consists of placement of up to 30,000 cubic yards of sand, on the South Beach placement fill site. The sandy material will be of the same character (similar in composition) to the existing breach fill material and will come from an upland source. All sand will be placed in the upland above the mean higher high water level. The proposed project is described below and shown on the enclosed Figure 1. The proposed work in Fiscal Year (FY) 2012 will occur in the summer of 2012. Other breach fill operations may occur during Fiscal years 2012 through 2018.
4. The project will be conducted entirely in the upland and there would be no in-water placement of materials. Table 1 summarizes the ESA listed species and critical habitat that may be found in the project vicinity. Of the species listed in table 1, only western snowy plover, marbled murrelet, and eastern stock Steller sea lion might be found in the terrestrial environment. All other species are strictly aquatic or found only considerable distances offshore of the project area. Adult marbled murrelet occur in Grays Harbor, but only in the aquatic environment. They

nest in old growth forests and forage in marine waters. Therefore they are not expected to occur in the project site. Eastern stock Steller sea lion occasionally occur in the vicinity of the project site, but there are no haulout sites in the area, and are not expected to come ashore at the project site. Therefore the project will have **No Effect** on these species or designated critical habitat. The western snowy plover is the only ESA listed species that might be found in the project area (more detail is given on this species below).

5. The sand will be of the same character as the sand in the sand spit. Some sand will over time erode from the sand placed in the South Beach placement site and enter the intertidal areas of Half Moon Bay and South Beach. The erosional forces involved are naturally occurring. Any sand that erodes onto the intertidal areas will enter the local long-shore drift cells and contribute to the processes that keep the intertidal beaches amenable to the organisms that live there. Thus the placed sand will enter the intertidal system as a natural component.

6. Western Snowy Plover: The Western snowy plover nests at three sites in Washington: Leadbetter Point, Midway Beach, and Damon Point/Oyhut Wildlife Area. The Damon Point site is located in the Grays Harbor inlet, approximately two miles north of the project site across the mouth of Grays Harbor from Half Moon Bay, and has been designated as critical habitat. The Midway Beach nesting area is located approximately seven miles south of the project site. Historically, the Westport area supported plover nesting.

a. A 2006 shorebird survey conducted multiple transect surveys at the ocean beach, Half Moon Bay, and inner dunal areas (Corps 2006). The study concluded that the vast majority (94%) of shorebirds used the ocean beach (South Beach) on the west side of the sand spit. Although suitable habitat does exist in the inner dunal area, no snowy plovers were observed in any of the transect areas. This is thought to be due to heavy human use, along with pets (primarily dogs), documented in the area.

b. The current terrestrial habitat in the Half Moon Bay area is unsuitable for Western snowy plover nesting. Foraging habitat would not be impacted as a result of the proposed project because plovers are not known to forage on the beaches at Half Moon Bay. The proposed project will have **no effect** on the Western snowy plover because of high human and pet (primarily dog) use of the area, the documented lack of snowy plover use of the area, and the project will have no effect on prey availability. The project simply places sand and sand fencing on the South Beach placement site area, sand in the Half Moon Bay mitigation stockpile, and sand on the Half Moon Bay placement site, and will have **no effect** on designated critical habitat for western snowy plovers.

7. The U.S. Army Corps of Engineers has determined that the 2012 through 2018 project will have no effect on any of the ESA listed species or designated critical habitat in the project area.

8. Reference: U.S. Army Corps of Engineers. 2006. Half Moon Bay Shorebird Assessment

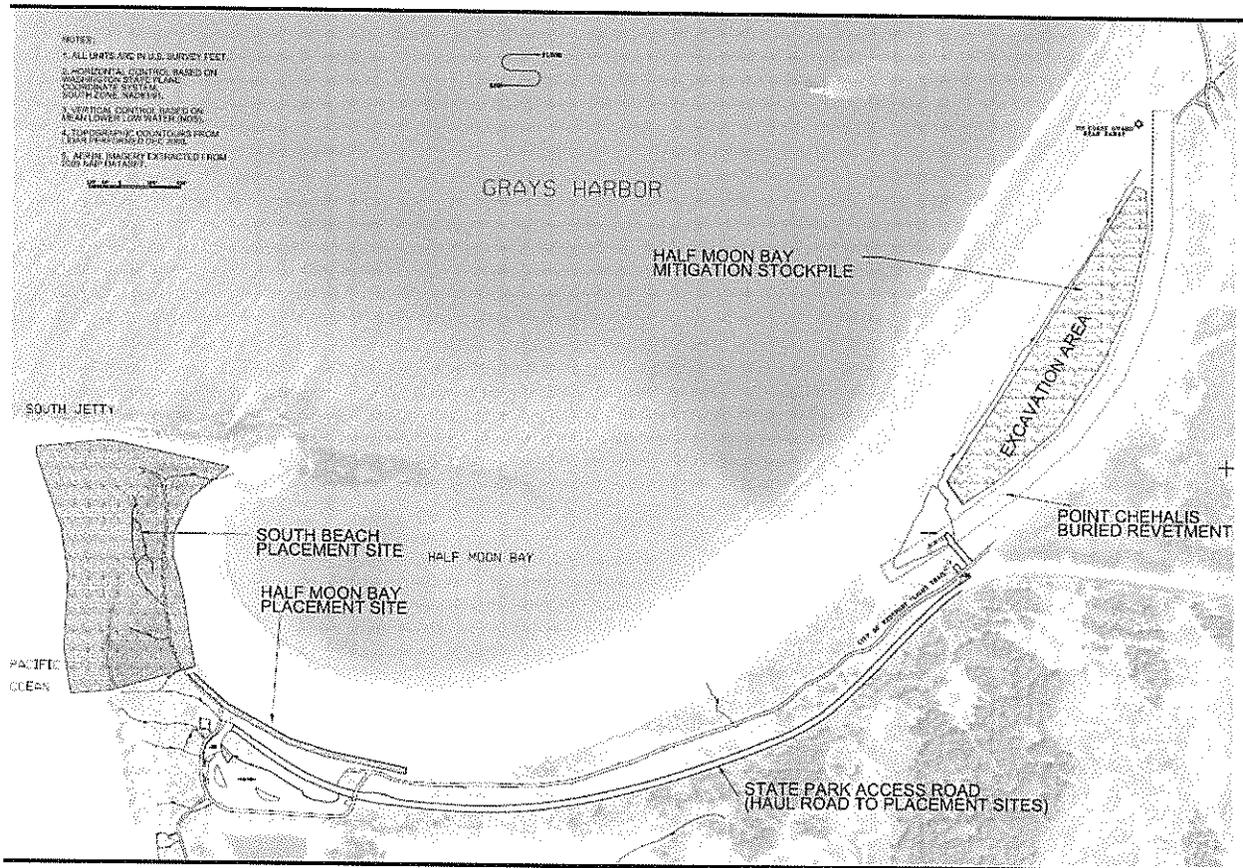

Jeff Laufle
Endangered Species Coordinator


Robert Donnelly
Environmental Coordinator

- 2 Encls
- 1. Table 1
- 2. Figure 1

Table 1. Endangered Species Act listed species and critical habitat potentially occurring in the project vicinity and effect determinations

SPECIES	LISTING STATUS	CRITICAL HABITAT	EFFECT DETERMINATION
Coastal/Puget Sound Bull Trout <i>Salvelinus confluentus</i>	threatened	Designated	No effect
Lower Columbia River Chinook Salmon <i>Onchorhynchus tshawytscha</i>	threatened	Designated Not in project area	No effect
Upper Willamette River Chinook Salmon <i>Onchorhynchus tshawytscha</i>	threatened	Designated Not in project area	No effect
Columbia River Chum Salmon <i>Onchorhynchus keta</i>	threatened	Designated Not in project area	No effect
Western Snowy Plover <i>Charadrius alexandrius nivosus</i>	threatened	Designated	No effect
Marbled Murrelet <i>Brachyramphus marmoratus</i>	threatened	Designated Not in project area	No effect
Southern Green Sturgeon <i>Acipenser medirostris</i>	threatened	Designated	No effect
Eastern Stock Steller Sea Lion <i>Eumetopias jubatus</i>	threatened	Designated Not in project area	No effect
Eulachon <i>Thaleichthys pacificus</i>	threatened	Designated	No effect
Southern Resident Killer Whale <i>Orcinus orca</i>	endangered	Designated	No effect
Humpback Whale <i>Megaptera novaeangliae</i>	endangered	Not designated	No effect
Blue Whale <i>Balaenoptera musculus</i>	endangered	Not designated	no effect
Fin Whale <i>Balaenoptera physalus</i>	endangered	Not designated	no effect
Sei Whale <i>Balaenoptera borealis</i>	endangered	Not designated	no effect
Sperm Whale <i>Physeter macrocephalus</i>	endangered	Not designated	no effect
Leatherback Sea Turtle <i>Dermochelys coriacea</i>	endangered	Not designated	no effect
Loggerhead Sea Turtle <i>Caretta caretta</i>	threatened	Not designated	no effect
Green Sea Turtle <i>Chelonia mydas</i>	threatened	Designated Not in project area	no effect
Olive Ridley Sea Turtle <i>Lepidochelys olivacea</i>	threatened	Designated Not in project area	no effect



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APPENDIX B: NOTICE OF PREPARATION

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**US Army Corps
of Engineers®**
Seattle District

Notice of Preparation

Planning and Cultural Management Division
Environmental and Cultural Resources Branch
P.O. Box 3755
Seattle, WA 98124-3755
ATTN: Elizabeth Chien (OD-TS-NS)

Public Notice Date: 15 June 2012
Expiration Date: 07 July 2012

Name: South Jetty Breach Fill Maintenance

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Seattle District (Corps) plans to prepare, pursuant to the National Environmental Policy Act (NEPA) Section 102(C), a draft supplemental environmental assessment (EA) for proposed maintenance through Fiscal Year (FY) 2018 of the breach fill between South Beach and Half Moon Bay (HMB), Grays Harbor near Westport, Grays Harbor County, Washington. Repairs are intended to address erosion caused by winter storm events when the breach fill area shows signs of either waves washing over the sand spit that connects South Jetty with the adjacent mainland at the entrance to Grays Harbor, or it is determined through survey data that 15,000 cubic yards (cy) or more of sand has eroded from the southwest corner of HMB beach. Previous work to place sand in the breach area was most recently completed in October 2010 and further repair is expected to be constructed in summer 2012 and future years through FY 2018, as needed.

AUTHORITY

The Grays Harbor and Chehalis River Project, including associated operation and maintenance of the Federal navigation channel and the South Jetty, is authorized by the Rivers and Harbors Act of August 30, 1935 (House Document 53, 73rd Congress, 2nd Session), as amended. The proposed work is within the Grays Harbor and Chehalis River Project operations and maintenance (O&M) authority because its intent is to protect navigation features, including the South Jetty and navigation channel, the operability and effectiveness of which the Corps has determined may be threatened in the event of a breach in the sand spit adjacent to the South Jetty.

NEED

After winter storms breached the sand spit adjacent to the Grays Harbor South Jetty in 1993, there were concerns about the stability of the South Jetty structure and potential damages to the navigation channel. In response, the Corps placed about 600,000 cy of sand to close the breach.

On a recurring seasonal basis (most recently in the winter 2010 and fall and winter of 2011) storms have damaged the breach fill area reducing the elevation and width of the sand spit, greatly increasing the probability of a breach recurring at the site. The persistent loss of sediment from the Grays Harbor entrance and adjacent beaches is expected to continue indefinitely. Shoreline erosion in the vicinity of the South Jetty could result in the eventual breaching of the landmass adjacent to the South Jetty. In order to assess the threat of such a

breach to the Federal navigation project and to develop a long-term strategy to maintain and protect Federal navigation project features, the Corps has continued studies to formulate and assess various management alternatives. The Long Term Management Strategy (LTMS) study, which remains ongoing at this time, will conclude with a recommendation for how to best ensure the continued operability of navigation project features.

Prior to completion of the LTMS study, there is a tangible risk that, without further preventative action, continued erosion in the vicinity of the South Jetty could produce another breach. Pending completion and review of the data collection and analysis efforts presently underway, there is uncertainty regarding the degree of risk of another breach occurring, as well as the nature and scope of any resultant impacts on the navigation project. In view of this uncertainty, the Corps plans to take action to preserve the *status quo* and protect against a breach recurrence until a definitive evaluation of the effects of another breach on the Federal interest in maintaining existing navigation project features is complete. If the breach fill area is breached tidal currents and waves would be allowed to uninhibitedly pass directly between the ocean and HMB. This condition could potentially have adverse effects on the operation and maintenance of the Federal navigation project, including shoaling in the navigation channel, structural damage to the South Jetty, damage to the Point Chehalis revetments and groins, damage to the Westport Marina features, and adverse impacts to the North Jetty resulting from changes in littoral drift. The breach fill sand spit is located adjacent to South Jetty between South Beach and HMB in Township 17 North, Range 12 West of the Willamette Meridian (46 degrees, 54.43 minutes, 21 seconds north latitude, and 124 degrees, 07.21 minutes, 47 seconds west longitude). The sand spit also protects HMB, infrastructure of the City of Westport, and adjacent Westhaven State Park and associated buildings, parking lots, roads and trails.

PURPOSE

The purpose of the proposed project is to continue, pending completion of the Long Term Management Strategy and implementation of recommended measures, to continue the current management practice of preserving the sand spit that connects South Jetty with the land mass to the south by protecting against an undue risk of a breach recurring (as occurred in 1993) in the sand spit that separates South Beach (to the west) from HMB (to the east).

PROPOSED ACTION

There are several options that could be undertaken depending on the specific triggering thresholds that are met. These options include: 1) place sand on the South Beach placement site area, 2) installation of sand fencing; 3) place sand on HMB placement site; and/or 4) some combination of the above options. The sand would be obtained from upland sources or from the HMB mitigation stockpile and transported via trucks. Two triggering thresholds (standards), which consider the specific conditions of a given storm season have been established to guide the decision about which option, if any, should be implemented. Each threshold has a corresponding responsive action. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement the placement of sand once the thresholds are reached. The project period is FY 2012 through 2018, or until actions to maintain the *status quo* are rendered moot by full implementation of Long Term Management Strategy Measures, whichever occurs first.

The action-triggering thresholds and corresponding responses are as follows:

- Threshold No.1. The Corps determines through evaluation of pertinent survey data that 15,000 cy of sand has eroded from the southwest corner of the HMB beach since the most recent sand placement event.
- Responsive Action No.1. Placement of up to 30,000 cy of clean sand along approximately 1,000 linear feet of beach in the southwest corner of HMB. Sand would be excavated from the existing buried revetment HMB mitigation stockpile, or obtained from another suitable upland source, and truck-hauled on the existing state park access road. Any quarry supplying the sand material would be required to match the relevant characteristics of the marine sands presently comprising the breach fill. Minor grading would occur for creating a temporary access route on the sand and for safety when bulldozing sand over the bank top. No road building materials (i.e., rock) would be used in transporting the sand. The replacement material would be placed landward of the +9 foot MLLW contour line (the mean higher high water contour) at its natural angle of repose to minimize impacts on intertidal ecology. Some mechanical grading and reworking of the sand may be required in addition to water currents and wave actions, which are expected to subsequently regrade and disperse this sand eastward along the beach and offshore. No in-water work would be performed. Sand grain size and other pertinent characteristics would be fully consistent with existing beach sand and marine sands in the nearshore area. Care would be taken to minimize impacts on dune grass.
- Threshold No. 2. The breach fill footprint south of South Jetty is overtopped by water from the west, resulting from one or more storm events.
- Responsive Action No. 2. Place clean sand of the same character (similar grain size and other pertinent characteristics) to the material in the breach fill area in the South Beach placement site, above elevation +9 feet MLLW (the mean higher high water contour). Sand fencing could also be installed as part of this action. Sand would be excavated from the existing buried revetment HMB mitigation stockpile, or obtained from another suitable upland source, and truck-hauled on the existing state park access road. Any quarry supplying the sand material would be required to match the relevant characteristics of the marine sands presently comprising the breach fill. The precise location and quantity of placed sand would be selected based on an analysis of the most effective means of responding to the observed overtopping conditions and the most efficacious means of addressing the risk of further overtopping and head-cutting. The sand would be obtained from an upland site and trucked to the placement site, or excavated and mechanically transferred from the existing buried HMB mitigation stockpile to the placement area utilizing either track vehicles that require no improved road or with trucks, by constructing a temporary access route. No in-water work would be required. Sand fences may also be installed to capture wind borne sand and reduce erosion of the sand placed in the South Beach breach placement site. Care would be taken to minimize impacts to any dune grass present in the South Beach placement site.

Two alternatives for the maintenance repair will be considered as follows:

- No Action. The Corps would not take any action to prevent further loss of breach fill material and recession of the shoreline at South Beach or HMB. As a result, significant damage to the breach fill could occur. There is a large degree of uncertainty relating to predictions of the status of the breach fill area during this time period. The risk of a breach similar to the December 1993 event has been reduced by elevating the beach fill area above +30 feet mean lower low water (MLLW), planting dune grass to slow wind-blown erosion, and placing cobble on HMB. However, persistent erosion would ultimately create a breach if left unchecked.

- Sand Placement. This alternative, as described above, would continue the current management practice of adding material and possibly sand fencing to the top of the South Beach placement site area, and to HMB above MHHW, as circumstances require as determined by designated threshold criteria, thus reducing the likelihood of a breach occurring. This in turn would continue the present water current dynamics of the entrance channel and continue supplying material to the intertidal area via material eroding from the South Beach placement site, thus reducing the eastward movement of the intertidal area adjacent to the breach fill area.

ANTICIPATED IMPACTS

Wetlands. There will be no impacts to wetlands as there are no wetlands in the area of the breach fill.

Biological Resources. There are threatened and endangered species and designated critical habitat located in the project vicinity. In accordance with Section 7(a)(2) of the ESA, the Corps has determined that the project will have “no effect” on any Endangered Species Act (ESA) listed species or their designated critical habitat.

Although bald eagle was delisted on June 28, 2007, they continue to be protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. These acts require measures to prevent bald eagle “take” resulting from human activities. Impacts to bald and golden eagles will be considered as a part of the NEPA process.

Construction noise (primarily dump trucks) may temporarily add to disturbance of non-listed wildlife in the project area, over and above the regular and prolonged disturbance that humans’ and their pets’ use of Westhaven State Park generate on wildlife in the area under the no-action alternative.

Water Quality. Sand placement would fall completely within the footprint of the previously authorized breach fill. As the sand placement would not alter the character, scope, or design of the initial 1994 breach fill placement, the proposed action would constitute maintenance of a dike or similar structure, as the breach fill was constructed as an engineered barrier between the Pacific Ocean on one side, and Half Moon Bay and the infrastructure of the City of Westport on the other. The breach fill is appropriately characterized as a “structure” even though it was not constructed with traditional durable materials, but with natural sands that were intended to mimic natural accretion, decretion, and erosion characteristics over time. The consequences of these natural processes were intended to be addressed through maintenance on a periodic basis, as required, or through other responsive measures deemed necessary. Thus, although not a typical dike, the breach fill is an engineered structure designed for the control of water, and such placements of material for repair and maintenance purposes are therefore exempt from the requirements of Section 404 under Section 404(f)(1)(B) of the Clean Water Act. Because no work subject to Section 404 regulation is being conducted, a Section 401 certification is not required.

Coastal Zone Management

The Corps has prepared a Coastal Zone Management Act (CZMA) Consistency Determination for the proposed action to ensure that the proposed work is consistent to the maximum extent practicable with the enforceable policies, general conditions, and general activities specified in

the City of Westport Shoreline Management Master Plan and the State of Washington Shoreline Management Program. The consistency determination will be submitted to the Department of Ecology (Ecology) for review and concurrence prior to the start of construction. It is anticipated that the proposed project will be consistent with the CZMA.

Cultural Resources. Section 106 of the NHPA requires that the effects of proposed actions on sites, buildings, structures, or objects included or eligible for the NRHP must be identified and evaluated. In 2003, a pedestrian archaeological survey of the project was conducted by the Corps. No cultural resources were identified during the pedestrian survey. In addition, the project area is composed of fill material and recently deposited sand, which precludes the possibility of prehistoric or early historic-period archeological deposits being present. A review of the Washington Information System for Architectural and Archaeological Records Database indicated that there are no cultural resources recorded within or adjacent to the project area. Prior to the 2004 sand placement, the Corps sent a letter report to the Washington SHPO stating the negative results of the archeological survey and background research and recommending a determination of no historic properties affected for the project. A letter concurring with this determination was received from the SHPO on September 30, 2003. Further document review by Corps archeologists indicates that the project area has low probability for the existence of properties that could be eligible for listing in the NRHP. More pertinently, the nature of the undertaking is of a type that has “no potential to cause effects to historic properties.” Therefore, it is anticipated that there would be no impact to cultural resources due to the lack of any resources being known to occur in the impact area.

Air Quality. Construction vehicles and heavy equipment would temporarily and locally generate gasoline and diesel exhaust fumes, carbon dioxide (CO₂), carbon monoxide, and fugitive dust on roadways. These emissions would be exempt from the conformity requirements under the Clean Air Act, because the project constitutes a routine facility repair activity generating an increase in emissions that is clearly *de minimis*, under 40 CFR 93.153(c)(2)(iv). In any response episode requiring use of an upland source of sand, assuming the sand was transported from a quarry 25 miles from the project site, this would lead to the production of about 140 tons of carbon dioxide. Considering that total world production in 2005 was over 5,000 million tons the effect would be an insignificant exacerbation of effects of CO₂ emissions on global climate change. Air quality would not be significantly impacted as a result of the proposed project.

Noise. Temporary local increases in noise would occur as a result of construction activities. Construction vehicles would cross Westhaven State Park when the park is in use, and would travel community roads between a commercial quarry and the placement site in any response episode requiring use of an upland source of sand. Work would be done during daylight hours to minimize the adverse effects on park visitors. It is anticipated that any noise impacts from construction would be minor, localized, and not significant.

Traffic. Construction-related traffic would disrupt visitors to Westhaven State Park during construction. Park visitors may be required to detour around the construction zone. Efforts would be made to minimize disturbances to local traffic patterns during construction through appropriate work hours, signage, notifications and proper traffic controls. It is anticipated that traffic impacts would be minor, localized, and not significant.

EVALUATION

The Corps has made a preliminary determination that the environmental impacts of the proposal can be adequately evaluated under the National Environmental Policy Act through preparation of a supplemental environmental assessment (EA). The Corps is currently

US Army Corps of Engineers, Seattle District
Notice of Preparation – Breach Fill Maintenance, Westport, Washington

preparing the supplemental EA to address potential environmental impacts associated with the breach fill maintenance for the period FY2012 through 2018.

In preparation of the environmental documentation for this project, coordination has been conducted or is ongoing with the following public agencies:

- (1) Washington Department of Ecology;
- (2) Quinault Indian Nation;
- (3) State Historic Preservation Office;
- (4) City of Westport;
- (5) Port of Grays Harbor;
- (6) Washington State Parks Commission;
- (7) Interagency Dredge Material Management Program:
 1. Corps;
 2. Environmental Protection Agency;
 3. Washington Department of Ecology;
 4. Washington Department of Natural Resources.

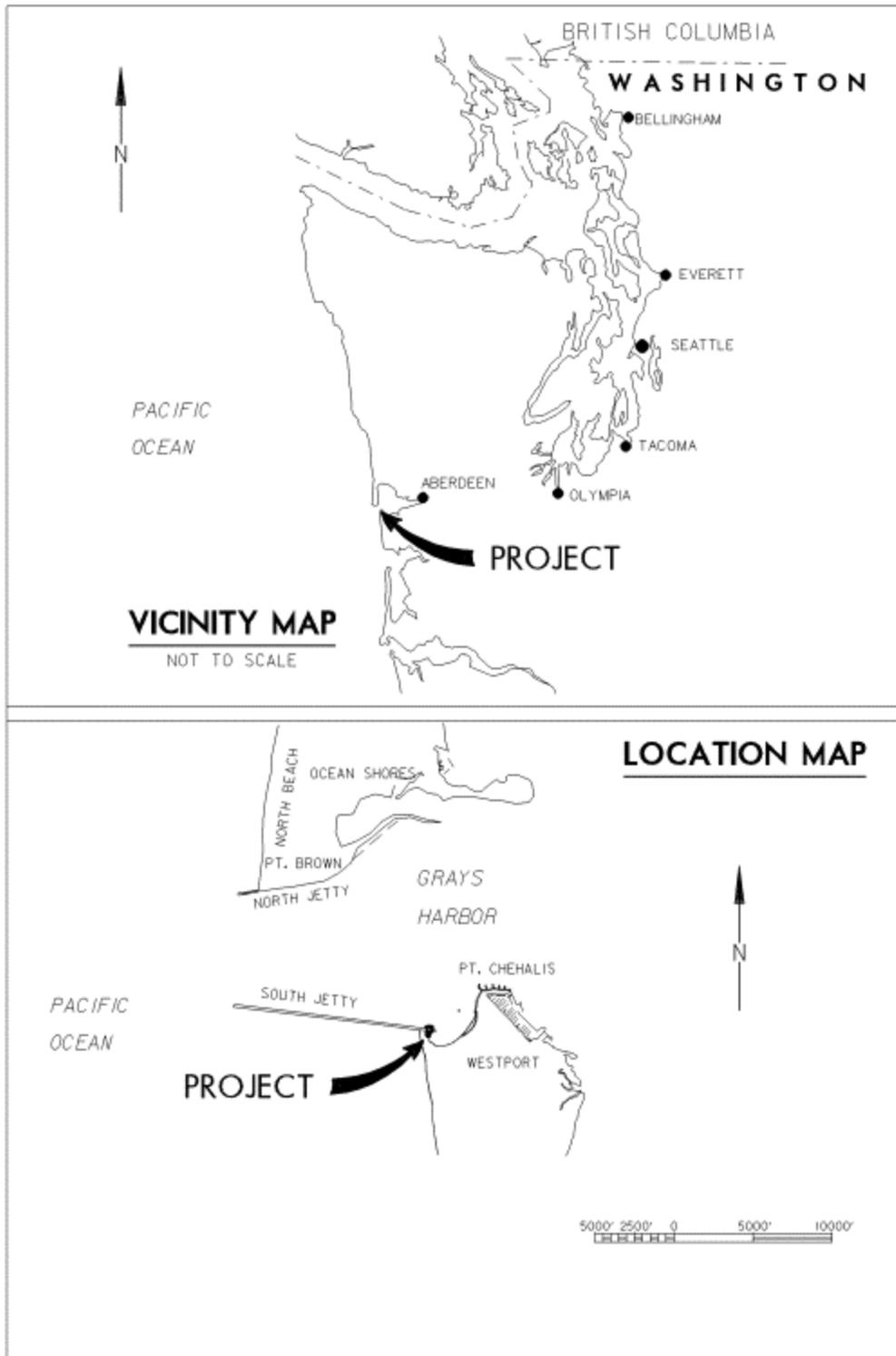
The Corps invites submission of factual comment on the environmental impact of the proposal. The Corps will consider all submissions received before the expiration date of this notice. The nature or scope of the proposal may be changed upon consideration of the comments received. The Corps will initiate an Environmental Impact Statement (EIS), and afford the appropriate public participation opportunities attendant to an EIS, if significant effects on the quality of the human environment are identified and cannot be mitigated.

Submit comments to this office, Attn: Elizabeth Chien, Navigation Section, no later than *21 days after the date of this notice* to ensure consideration. In addition to sending comments via mail, comments may be e-mailed to Elizabeth.A.Chien@usace.army.mil. This Notice of Preparation can be found at the following website:

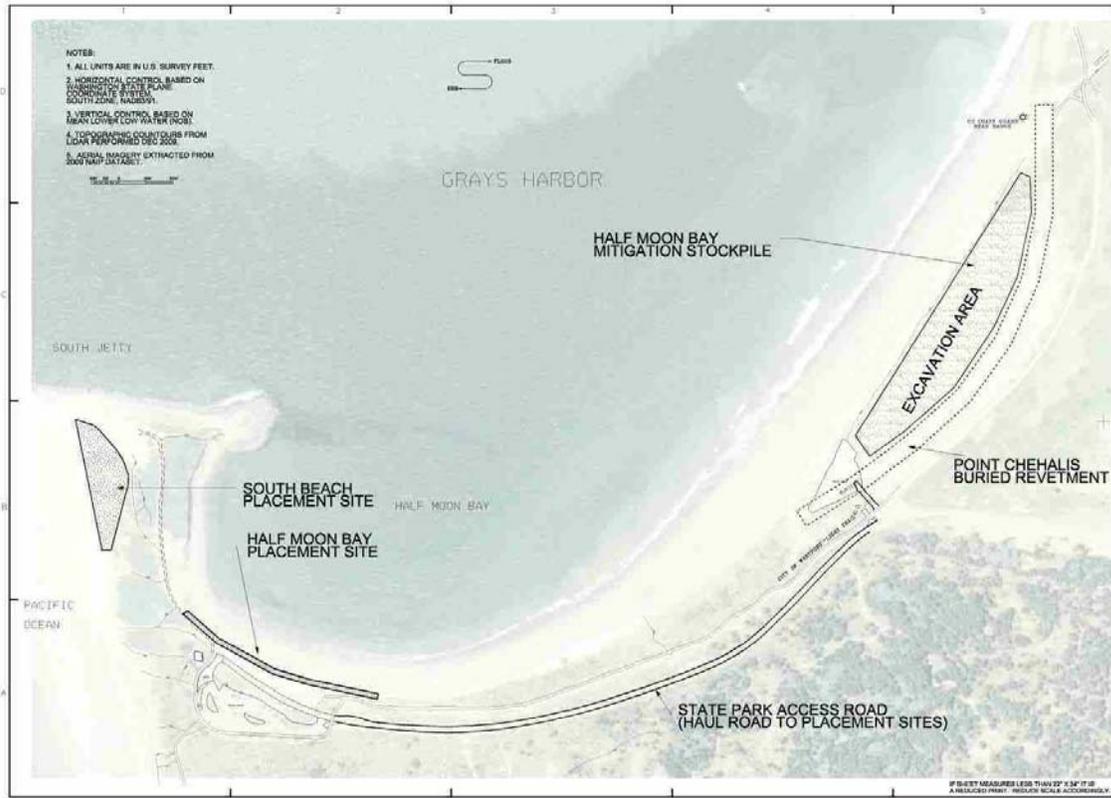
http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=ERS&pagename=ERS_Documents.

under “South Jetty Breach Fill Maintenance.” Requests for additional information should be directed to Ms. Elizabeth Chien at 206-439-4533 or the above e-mail address.

PROJECT LOCATION MAPS



US Army Corps of Engineers, Seattle District
Notice of Preparation – Breach Fill Maintenance, Westport, Washington



Locations of the sand placement sites

APPENDIX C: COMMENT AND RESPONSE

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

June 20, 2012

Colonel Bruce Estok
U.S. Army Corps of Engineers, Seattle District
P.O. Box 3755
Seattle, Washington 98124-3755
Attention: Elizabeth Chien, OD-TS-NS

Re: Notice of Preparation (dated June 15, 2012) Draft Supplemental Environmental Assessment (EA) for Proposed Maintenance (2012-2018) of the Breach Fill between South Beach and Half Moon Bay, Westport, Washington.

Dear Colonel Estok:

The Environmental Protection Agency (EPA) reviewed the referenced supplemental Environmental Assessment (EA) Notice of Preparation in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

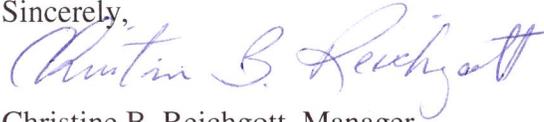
The EPA recognizes the need for ongoing, short-term actions to address erosion and prevent another breach in the vicinity of the South Jetty. Triggering thresholds for sand placement have been identified, and we support the Corps' efforts to beneficially use maintenance dredged material, as well as appropriate upland-sourced materials, in an effort to preserve the project area until a long-term alternative has been selected via the Grays Harbor South Jetty Long-Term Management Strategy process. We encourage the Corps to expand the supplemental EA analysis to include the potential for direct pump off of dredged material to the immediate breach area. Limiting the scope of the EA to upland sources or truck transport of dredged material from the Half Moon Bay stockpile unnecessarily limits the Corps future nourishment options, especially given that this EA is intended to cover the Corps' short-term options through 2018.

The EPA also recently provided comments on the Draft Letter Report and EA (and Public Notice CENWS-PM-ER-12-06) for the ongoing Long-Term Management Strategy work to address the South Jetty. We look forward to discussions between our agencies before a final long-term alternative is selected.

*Received
22 June 2012
Elizabeth Chien*

For questions on our comments please contact me at (206) 553-1601 or by email at reichgott.christine@epa.gov for further coordination on this project please contact Justine Barton of my staff at (206) 553-6051 or by email at barton.justine@epa.gov.

Sincerely,



Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

- cc. Ryan McReynolds, USFWS
- Helen Pressley, Ecology
- Amy Spoon, WDFW
- Mark Mobbs, Quinault Indian Nation
- C.J. Klocow, Corps of Engineers, Seattle District

Handwritten red notes:
Christine Reichgott
55
3/27/2013
3/27/2013

The U.S. Army Corps of Engineers Response

The Environmental Protection Agency suggested that the U.S. Army Corps of Engineers (Corps) include the potential for direct pump off of dredge material to the breach fill area. The Corps acknowledges this as an option and revised the environmental assessment accordingly.

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APPENDIX D: COASTAL ZONE MANAGEMENT ACT CONSISTENCY
DETERMINATION

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Environmental & Cultural Resources Branch

August 9, 2012

Federal Permit Section
Washington Department of Ecology
P.O. Box 47600
Olympia, Washington 98503

Dear Ms. Pressley:

The U.S. Army Corps of Engineers, Seattle District (Corps) is proposing to conduct maintenance of the South Jetty Breach Fill, Fiscal Years (FY) 2012-2018, Westport, Grays Harbor County, Washington. Initial construction is planned for the summer of 2012, but could occur in any year between FY 12-18 and would take approximately two months. The enclosed document is for your consideration:

Coastal Zone Management Act Consistency Determination

Below is a summary of compliance with the six enforceable laws:

Shoreline Management Act- The Corps has prepared a Coastal Zone Management Act Consistency Determination. The Corps has determined that the proposed project is consistent with the Grays Harbor County Shoreline Master Program regulations to the maximum extent practicable, and therefore complies with the Washington State Shoreline Management Program.

State Environmental Policy Act (SEPA)- The Corps, Seattle District is the lead Federal agency for this project, and has prepared an Environmental Assessment (EA) (The EA/FONSI is dated 3 July 2012) to comply with the National Environmental Policy Act (NEPA). The Corps will conclude the NEPA process prior to the start of any work. SEPA is pre-empted by Federal law.

Clean Water Act- Sand placement would fall completely within the footprint of the previously authorized breach fill, and would utilize marine sands dredged from navigation channel sources identical to the existing sands, or sands derived from a suitable upland source meeting the same pertinent characteristics. As the sand placement would not alter the character, scope, or design of the initial 1994 breach fill placement, the proposed action would constitute maintenance of a dike or similar structure, as the breach fill was constructed as an engineered barrier between the Pacific Ocean on one side, and Half Moon Bay and the infrastructure of the City of Westport on the other. The breach fill is appropriately characterized as a "structure" even though it was not constructed with traditional durable materials, but with natural sands that were intended to mimic natural

accretion, decretion, and erosion characteristics over time. The consequences of these natural processes were intended to be addressed through maintenance on a periodic basis, as required, or through other responsive measures deemed necessary. Thus, although not a typical dike, the breach fill is an engineered structure designed to control water, and such placements of material for repair and maintenance purposes are therefore exempt from the requirements of Section 404 under Section 404(f)(1)(B) of the Clean Water Act. Because no work subject to regulation under Section 404 is being conducted, a Section 401 certification is not required

Clean Air Act- Some temporary mobile source emission releases are expected during construction (sand hauling and placement) activities; however air quality is not expected to be effected to any significant degree. The project constitutes a routine facility maintenance and repair activity, generating an increase in emissions that is clearly *de minimis* under 40 CFR 93.153(c)(2)(iv), and is thus exempt from the Clean Air Act conformity requirements.

Energy and Facility Site Evaluation- Not applicable

Ocean Resource Management Act- Not applicable

The Corps is requesting your concurrence with the Corps' Coastal Zone Management Act consistency determination. If you have any questions, please contact, Dr. Robert Donnelly, 206-764-6981 or robert.f.donnelly@usace.army.mil.

Sincerely,

A handwritten signature in cursive script, appearing to read "John M. Haupt" with "for" written below it.

Evan R. Lewis
Chief, Environmental & Cultural Resources Branch

Enclosures (1)

**COASTAL ZONE MANAGEMENT ACT
CONSISTENCY DETERMINATION**

Fiscal Years 2012 through 2018
South Jetty Breach Fill Maintenance
Westport, Grays Harbor County, Washington

1. **Introduction.** Pursuant to the Coastal Zone Management Act (CZMA) 16 USC 1456 Federal agencies activity are required to be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of the approved state Coastal Zone Management (CZM) Programs. The Shoreline Management Act (SMA) of 1972 (RCW 90.58) is the core of authority of Washington's CZM Program. Primary responsibility for the implementation of the SMA is assigned to local government.

The proposed project identifies two specific and objectively measurable site condition thresholds, assessing degree of sand loss that would trigger responsive action which include a range of responsive actions that would be taken if either of the triggering thresholds is met, and assesses the environmental impacts of that responsive action. Maintenance is intended to address erosion caused by winter storm events when the breach fill area shows signs of either waves washing over the sand spit that connects South Jetty with the adjacent mainland at the entrance to Grays Harbor, or it is determined through survey data that 15,000 cubic yards (cy) or more of sand has eroded from the southwest corner of Half Moon Bay (HMB) beach. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement the placement of sand once the thresholds are reached. All placement locations would be above mean higher high water. Breach fill responsive action events would take sand material from the HMB mitigation stockpile, which may be refilled through beneficial use, or sand material acquired from an upland source and trucked overland to the sand placement sites. Implementation of any contingent breach fill maintenance actions (FY12 through FY18) would be undertaken as an intermediate measure pending implementation of the Operations and Maintenance Long Term Management Strategy (LTMS) that is currently under development. Prior to completion of the LTMS study, there is a tangible risk that, without further preventative action, continued erosion in the vicinity of the South Jetty could produce another breach. Pending completion and review of the data collection and analysis efforts presently underway, there is uncertainty regarding the degree of risk of another breach occurring, as well as the nature and scope of any resultant impacts on the navigation project. In view of this uncertainty, the Corps plans to take action to preserve the *status quo* and protect against a breach recurrence until a definitive evaluation of the effects of another breach on the Federal interest in maintaining existing navigation project features is complete. The project includes installing sand fencing to reduce wind erosion, and minimizing impacts to native dune grass. The project period for the breach fill maintenance action is Fiscal Years (FY) 2012 through 2018, or until actions to maintain the *status quo* are rendered moot by full implementation of LTMS measures, whichever occurs first.

CZM Consistency Determination

South Jetty Breach Fill Maintenance, FY 12-18, Westport, Grays Harbor County, Washington, August 2012

2. State of Washington Shoreline Management Program.

Primary responsibility for implementation of the State of Washington Shoreline Management Act of 1971 has been assigned to local governments. The determination of this action's consistency with the Coastal Zone Management Act is based upon review of the Washington's CZMP, *Managing Washington's Coast: Washington State's Coastal Zone Management Program* (Ecology Publication 00-06-029, February 2001); the Washington Administrative Code (WAC) Shoreline Management Act Titles; and the policies and standards of the adopted Grays Harbor County Shoreline Management Master Program, City of Westport Shoreline Management Master Program, and the Grays Harbor Estuary Management Plan. Applicable sections of each plan are presented below, with the Corps' consistency indicated in ***bold italics***.

3. Grays Harbor County Shoreline Management Master Program

Grays Harbor County implemented the SMA through the preparation of a Shoreline Master Program (SMP), adopted on June 3, 1974 (Resolution #7419) and updated on April 5, 2002. The applicable portions of this SMP are addressed below.

Chapter 2. Shoreline Management Policies, Activity Policies, 9. Shoreline Works and Structures:

d. SWS should minimize and/or compensate adverse effects on beach sand movement and further, minimize alteration of the natural shoreline.

Consistent. The project is designed to protect the sand spit between Half Moon Bay and South Beach, including the uplands and intertidal lands between the Pacific Ocean and Half Moon Bay, adjacent to South Jetty. The project will reduce the probability of a breach occurring.

Chapter 2. Shoreline Management Policies, Amenity Policies, 1. Visual Enhancement.

c. The natural shoreline configuration should be preserved to protect scenic beauty. The leveling of hills and dunes, the filling of troughs or the terracing of slopes are other activities which can have the effect of creating an unnatural and visually unappealing shoreland configuration.

Consistent. The project is designed to preserve the interdunal land between the Pacific Ocean and Half Moon Bay adjacent to the South Jetty.

Chapter 2. Shoreline Management Policies, Amenity Policies, 3 Archeological Areas and Historic Sites

a. Where possible local government should consult professional archeologists to identify areas containing potentially valuable archeological data, and to establish procedures for salvaging the data.

Consistent. Several cultural resources surveys have been conducted for previous Corps projects within the vicinity of Gray's Harbor. In 1984, Shapiro and Associates conducted a survey for historic sunken shipwrecks. Based on the information they compiled there are no shipwrecks within the vicinity of the project (Shapiro and Associates 1984). In 2002, the Corps conducted a cultural resource survey of the project area and determined that the project

CZM Consistency Determination

South Jetty Breach Fill Maintenance, FY 12-18, Westport, Grays Harbor County, Washington, August 2012

area is composed of recent dredge spoil fill and twentieth-century sand dune deposits. The Corps determined that no historic properties would be affected by project (Kent 2003). The State Historic Preservation Office (SHPO) concurred with the determination in correspondence with the Corps in September 2003.

d. The National Historic Preservation Act of 1966 and Chapter 43.51 RCW are hereby adopted as policies of this Master Program and their administration and enforcement is encouraged.
Consistent. The project footprint has not changed since the 1994 breach fill. The project does not involve any excavation but adds additional material to a highly disturbed site that has had multiple episodes of material added to it throughout the years. This placement has been accomplished to slow the erosion process in an area of very high-energy and strong natural erosive properties. Further document review by Corps archeologists indicates that the project area has low probability for the existence of properties that could be eligible for listing in the National Register of Historic Places (NRHP). More pertinently, the nature of the undertaking (maintenance work associated with an existing Corps structure) is of a type that has No Potential to Cause Effects to Historic Properties. Accordingly, no additional work beyond inclusion of this document evidencing the Corps' compliance with Section 106 in the permanent project files is considered necessary.

Chapter 2. Shoreline Management Policies, Environment Policies, 5. Ocean Beach Environment.

a. The Ocean Beach Environment is intended to apply to the beach, dune and upland areas associated with the Pacific Ocean. The environment is intended to preserve the natural systems and amenities which attract people to the area while providing for development of accommodations and services related to and necessary for support of human use of the beach areas.

Consistent. The project is designed to prevent a breach and maintain the existing ocean shoreline. If a breach between Half Moon Bay and South Beach appears to be imminent, up to 52,500 cubic yards of sand and sand fencing will be placed at South Beach placement site.

Chapter 2. Shoreline Management Policies, Administration Policies, 2. Shorelines of Statewide Significance.

d.1. Leaving undeveloped those areas that contain a unique or fragile natural resource.

Consistent. The project will help protect the resources and ecology of Half Moon Bay and South Beach.

Chapter 22, Conservancy Environment Regulations, 1. Purpose

The Conservancy Environment Regulations are intended to protect lands, wetlands, and water of economic, recreational, and natural value. Development for purposes which would be detrimental to resources capability and utilization is not permitted.

Consistent. The project is protecting dune lands, recreational and the natural shoreline along South Beach and Half Moon Bay beach.

CZM Consistency Determination

South Jetty Breach Fill Maintenance, FY 12-18, Westport, Grays Harbor County, Washington, August 2012

4. Westport Shoreline Management Master Program

The City of Westport implemented the SMA through preparation of a SMP (Title 17- Westport Zoning Ordinance, Chapter 17.32), adopted April 28, 1998. The Half Moon Bay jetty extension and placement of sand/gravel at the base of the existing breakwater fall under the jurisdiction of this shoreline master program.

17.32.040 Shoreline Environments.

(1) Urban Shoreline. (B) Recreation and Parks.

The beach along Half Moon Bay is designated as Urban Shoreline (Recreation and Parks use Zone).

Consistent. The sand placement and sand fencing will reduce the likelihood of a breach occurring between South Beach and Half Moon Bay. Sand placement and sand fencing adjacent to the South Jetty will also help preserve the intertidal areas of both areas.

(2) Conservancy Shoreline.

The sand/gravel placement site falls within the Conservancy Shoreline.

Consistent. Sand placement and sand fencing adjacent to the South Jetty will maintain the existing dunal area adjacent to South Beach

17.32.050. Shoreline Environment Guidelines. (1) Urban Shoreline Environment

(F) Conditional Uses. Bankline erosion control, shoreline protective structures, and landfills are conditional uses in the Conservancy environment.

Consistent. Sand placement and sand fencing adjacent to the South Jetty will maintain the intertidal areas of South Beach and Half Moon Bay.

(G) (iii) Grading and filling operations consistent with the permitted uses shall be permitted shoreward of the primary dune, where such dune is ascertainable. Modifications in the primary dune are permitted only where other alternatives are not available and then only when necessary to serve a public purpose (e.g., road, public access, utility, or safety measure) and not merely private or recreational purposes. Grading and filling will not be permitted for the purpose of creating new land out of waters of the state.

Consistent. If the primary dune erodes to the point that triggers are needed; sand placement will occur and will mimic the cross-section of the adjacent dunes. The area has been subjected to severe natural and human disturbance over the past decades; however, the Corps has planted native dune grass vegetation on some areas in efforts to maintain the breach fill against wind and wave overtopping erosion. The Corps will avoid to the maximum extent possible disturbance of native dune grass. Sand fences will be installed to further reduce wind erosion. The proposed project is intended to maintain the status quo of the spit between Half Moon Bay and South Beach and protect against an undue risk of formation of a breach through the South Beach spit.

(G) (iv) Shoreline protective structures, docks, piers. Shoreline protective structures, docks, and piers are permitted within the harbor area (any urban shoreline lying easterly of the main jetty) and any extension of the main jetty necessary to protect the main jetty or improve its functioning.

CZM Consistency Determination

South Jetty Breach Fill Maintenance, FY 12-18, Westport, Grays Harbor County, Washington, August 2012

The normal maintenance and repair of existing shoreline works and structures shall be exempt from the requirement to obtain a shoreline substantial development or conditional use permit pursuant to RCW 90.58.030(3)(e)(i).

Consistent. Proposed sand placement and sand fencing is a shoreline protective measure and would be located in the urban zone south of South Jetty. It is intended to maintain the beach at the western end of Half Moon Bay and to control erosion which would serve to protect the jetty.

17.32.050. Shoreline Environment Guidelines. (2) Conservancy Shoreline Environment

(D) Minor modifications of the bank line may be permitted on a case-by-case basis. These alterations shall be for the purpose of stabilizing the bankline, not for the purpose of developing new upland areas.

Consistent. The project is designed to maintain the sand spit between South Beach and Half Moon Bay at the eastern base of South Jetty.

(F). Conditional Uses. Bankline erosion control and shoreline protective structures, new shoreline works and structures, and landfills associated with approved shoreline permits

Consistent. The breach fill between Half Moon Bay and South Beach was designed to restore gradually sloping intertidal beach. The maintenance placement of sand and sand fencing will reduce the likelihood of a breach occurring between South Beach and Half Moon Bay.

17.32.055 Shoreline Use Activities.(4) Erosion Control.

Activities permitted within the category of backline erosion control include riprapping and minor straightening and sloping of the bank line as required to stabilize upland areas and prevent accelerated erosion processes.

Consistent. Sand placement and sand fencing will reduce the likelihood of a breach occurring between South Beach and Half Moon Bay. Sand placement and sand fencing adjacent to the South Jetty will maintain the existing sand spit and the intertidal areas.

17.32.055 Shoreline Use Activities.(8) Shoreline Works and Structures.

Bulkheads, Breakwaters, Jetties and Groins, Landfills, Dredging, Shoreline Protection.

(D) Relevant landfill guidelines. Pursuant to WAC 173-16-060(14), landfills occur to replace shoreland areas removed by wave action or the normal erosive processes of nature.

(i) Shoreline fills or cuts should be designed and located so that significant damage to existing ecological values or natural resources, or alteration of local currents will not occur, creating a hazard to adjacent life, property, and natural resources systems.

Consistent. Placement of sand and sand fencing on the sand spit between Half Moon Bay and South Beach will maintain the existing conditions and help prevent a breach occurring.

17.32.055 Shoreline Use Activities. (13) Recreation

The recreational experience may be either an active one, involving swimming, surfing, windsurfing, swimming, or the experience may be passive, such as enjoying the natural beauty of a vista.

Consistent. Maintenance placement of sand and sand fencing on the sand spit between Half Moon Bay and South Beach will maintain existing recreational opportunities. The project will result in the status quo for recreation.

17.32.055 Shoreline Use Activities. (14) Restoration

Restoration of shoreline areas shall mean returning the area to its natural state.

Consistent. The placement of sand and sand fencing on the sand spit will minimize the likelihood of a breach occurring between the Pacific Ocean and Half Moon Bay and retain the status quo for the shoreline.

1. Grays Harbor Estuary Management Plan

The Grays Harbor Estuary Management Plan (GHEMP) is a coordinated regional comprehensive plan designed to guide land and water use activities in the Grays Harbor estuary and the surrounding shoreline. It was approved in January 1986 and is implemented through the Grays Harbor County Shoreline Master Program, the Master Programs of local jurisdictions, and the State Shoreline Management Act. The planned Half Moon Bay activities, including placement of sand on the spit between Half Moon Bay and South Beach is located in Management Unit 44, a special unit that included all the water area not included within any other designated management unit. The management objective for the Unit 44 Planning Area is to protect areas for purposes that directly use or depend on natural systems (p. 112). Activities that occur in these areas should be compatible with natural systems in order to maintain the carrying capacity and biological productivity of the bay. Special conditions are imposed on Unit 44 to ensure that activities are carried out in a manner that does not reduce or degrade these estuarine resources.

Management Unit 40, Planning Area VIII.

Allowable activities include jetties and bank erosion control.

Consistent. The maintenance activities involving placement of sand and sand fencing to restore the elevation of the sand spit between Half Moon Bay and South Beach is intended to maintain the status quo of the shoreline and reduce the probability of a breach occurring.

Conclusion

Based on the preceding evaluation, the Corps has determined that the proposed project complies with the policies, general conditions, and general activities specified in the Grays Harbor County SMP, City of Westport SMP, and the Grays Harbor Estuary Management Plan. The proposed action is thus considered consistent to the maximum extent practicable with the State of Washington Shoreline Management Program.

APPENDIX E: ECOLOGY RESPONSE TO THE COASTAL ZONE MANAGEMENT ACT
CONSISTENCY DETERMINATION

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Donnelly, Robert F NWS

From: Randall, Loree' (ECY) [lora461@ECY.WA.GOV]
Sent: Friday, August 24, 2012 8:02 AM
To: Donnelly, Robert F NWS
Cc: Thomas, James R NWS; Pressley, Helen (ECY)
Subject: South Jetty Breach Fill

On August 13, 2012, Ecology received a letter from the Corps of Engineers (Corps) regarding Coastal Zone Management Act Consistency Determination for the maintenance of the South Jetty Breach Fill, Fiscal Years 2012 - 2018, Westport, Grays Harbor County. Ecology has reviewed and issued a consistency determination for this project in the past and NOAA has advised Ecology that once a federal consistency determination has been issued for a recurring project there is no need to go through the consistency review process again unless the project changes and/or the additional work will be conducted outside the original footprint that was reviewed. Ecology reviewed the August 13, 2012 Corps submittal and determined that the project has not changed and therefore Ecology did not initiate additional review. The Corps may presume concurrence has been granted for the South Jetty Breach Fill based on our past consistency decision. Ecology still agrees that the proposed project is consistent with Washington's Coastal Zone Management Program. Please let me know if you have any questions.

Thanks

Loree' Randall

401/CZM Policy Lead

360/407-6068

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APPENDIX F: FINDING OF NO SIGNIFICANT IMPACT

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FINDING OF NO SIGNIFICANT IMPACT
South Jetty Breach Fill Maintenance
Fiscal Years 2012-2018
Westport, Grays Harbor County, Washington

1. Background. The Supplemental Environmental Assessment (EA) (August 2012), incorporated by reference, supplements and incorporates by reference the Draft Supplemental Environmental Assessment and Biological Evaluation for the South Jetty Breach Fill Maintenance, prepared in February 2004 and supplemented by the U.S. Army Corps of Engineers (Corps) in December 2004, November 2005, and July 2010. The August 2012 document evaluates the impacts of up to four breach fill maintenance events during Fiscal Years (FY) 2012 through 2018. The Supplemental EA evaluated impacts to resources in Westhaven State Park area and the sand spit connecting South Jetty with the land mass to the south which separates South Beach from Half Moon Bay.

2. Purpose. The purpose of the proposed work is to continue, pending completion of the Grays Harbor Operations and Maintenance Long-Term Management Strategy (LTMS) and implementation of its recommended measures, to preserve the status quo by protecting against an undue risk of the recurrence of a breach in the sand spit that connects South Jetty with the land mass to the south as occurred in 1993. Maintenance of the breach fill protects the South Jetty, the Federal Navigation Channel, and other Federal navigation project features from damage which could result from a breach. Implementation of any contingent breach fill maintenance actions (FY12 through FY18) would be undertaken as an intermediate measure pending implementation of the LTMS that is currently under development. Prior to completion of the LTMS study, there is a tangible risk that without further preventative action continued erosion in the vicinity of the South Jetty could produce another breach. Pending completion and review of the data collection and analysis efforts presently underway, there is uncertainty regarding the degree of risk of another breach occurring, as well as the nature and scope of any resultant impacts on the navigation project. In view of this uncertainty, the Corps plans to take action to preserve the *status quo* and protect against a breach recurrence until a definitive evaluation of the effects of another breach on the Federal interest in maintaining existing navigation project features is complete. The project period for the breach fill maintenance action is FY 2012 through 2018, or until actions to maintain the *status quo* are rendered moot by full implementation of LTMS measures, whichever occurs first.

3. Preferred Alternative. The proposed action consists of placing sand material in the South Beach and Half Moon Bay placement sites with material obtained from an upland source or from the mitigation stockpile beginning in FY12 and continuing through FY18 as needed. The sand material would be placed in the South Beach and Half Moon Bay placement sites above +9 feet mean lower low water. There are several options that could be undertaken depending on the specific triggering thresholds that are met. These options include: 1) place sand in the South Beach placement site, 2) install sand fencing; 3) place sand in the HMB placement site; and 4) some combination of the above options. The sand would be obtained from upland sources or from the HMB mitigation stockpile, and transported via trucks. Two triggering thresholds, which consider the specific conditions in light of ongoing erosion and the effects of storm events,

have been established to guide the decision about whether a prescribed responsive action should be implemented. Each threshold has a corresponding responsive action. These triggering standards were established in order to make use of readily measurable and objectively verifiable indicators of risk of a breach occurring. The triggering thresholds are set at a level that permits the Corps adequate response time to procure and implement the placement of sand once the thresholds are reached.

The action-triggering thresholds and corresponding responses are as follows:

Threshold No.1. The Corps determines through evaluation of pertinent survey data that 15,000 cy of sand has eroded from the southwest corner of the HMB beach since the most recent sand placement event.

Responsive Action No.1. Placement of up to 15,000 cy of clean sand along approximately 1,000 linear feet of beach in the southwest corner of HMB, in a footprint approximately 0.8 acres in size. Sand would be excavated from the existing buried revetment HMB mitigation stockpile, or obtained from another suitable upland source, and truck-hauled on the existing state park access road. Any quarry supplying the sand material would be required to match the relevant characteristics of the marine sands presently comprising the breach fill. Minor grading could occur for pioneering a temporary access route on the sand and for safety when bulldozing sand over the bank top. Any material used to develop a temporary access route will be removed at the conclusion of the project. The replacement material would be placed landward of the +9 foot MLLW contour line (the mean higher high water contour) at its natural angle of repose to minimize impacts on intertidal ecology. Some mechanical grading and reworking of the sand may be required in addition to water currents and wave actions, which are expected to subsequently regrade and disperse this sand eastward along the beach and offshore. No in-water work would be performed. Sand grain size and other pertinent characteristics would be consistent with existing beach sand and marine sands in the breach fill and nearshore area. Care would be taken to minimize impacts on dune grass.

Threshold No. 2. The breach fill footprint south of South Jetty is overtopped by water from the west, resulting from one or more storm events.

Responsive Action No. 2. Placement of clean sand of the same character (similar grain size and other pertinent characteristics) as the material in the breach fill area in a footprint of up to 2.2 acres located within the 7.6-acre South Beach placement site, landward of elevation +9 feet MLLW (the MHHW contour). Any quarry supplying the sand material would be required to meet the relevant sand grain size and other characteristics of the marine sands presently comprising the breach fill and nearshore area. The precise location and quantity of placed sand would be selected based on an analysis of the most effective means of responding to the observed overtopping conditions and the most efficacious means of addressing the risk of further overtopping and head-cutting. The sand would be excavated or obtained from another suitable upland source, and truck-hauled on the existing state park access road. Minor grading could occur for pioneering a temporary access route on the sand. Any material used to develop a temporary access route will be removed at the conclusion of the project. No in-water work would be performed. Sand fences may also be constructed to capture wind borne sand and

reduce erosion of the sand placed in the South Beach breach placement site. Care would be taken to minimize impacts to any dune grass present in the South Beach placement site.

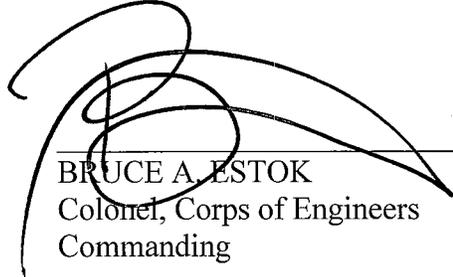
4. Summary of Impacts and Compliance. The preferred alternative will have no effect on Endangered Species Act (ESA) threatened and endangered species or their designated critical habitat in the vicinity of the South Beach or Half Moon Bay placement sites because the work will be done in the upland where no ESA listed species are found or critical habitat is located. The proposed action would result in no impacts to any properties listed, proposed for listing, eligible for listing, or potentially eligible for listing in the National Register of Historic Places. Construction noise (primarily dump trucks) may temporarily add to disturbance of non-listed wildlife in the project area, over and above the regular and prolonged disturbance that humans' and their pets' use of Westhaven State Park generate on wildlife in the area under the no-action alternative. There will be no impacts to wetlands as there are no wetlands in the area of the breach fill. Effects to air quality do not reach *de minimis* levels, and the project is thus exempt from the conformity requirements under the Clean Air Act. The Corps has prepared a Coastal Zone Management Act (CZMA) Consistency Determination for the proposed action to ensure that the proposed work is consistent to the maximum extent practicable with the enforceable policies specified in the City of Westport Shoreline Management Master Plan and the State of Washington Shoreline Management Program. Ecology renewed the consistency concurrence issued for the similar action in 2004, via their e-mail of 24 August 2012. Temporary local increases in noise would occur as a result of construction activities. Work would be done during daylight hours to minimize the adverse effects on park visitors. Park visitors may be required to detour around the construction zone. Efforts would be made to minimize disturbances to local traffic patterns during construction through appropriate work hours, signage, notifications and proper traffic controls. It is anticipated that traffic and noise impacts would be minor, localized, and not significant.

As was the case with the sand placement in December 2004, January 2005, and September 2010, little, if any, native dune grass vegetation would be disturbed by the transportation and the Corps will make every effort to avoid such impacts.

Sand placement would fall completely within the footprint of the previously authorized breach fill, and would utilize marine sands dredged from navigation channel sources identical to the existing sands, or sands derived from a suitable upland source meeting the same pertinent characteristics. As the sand placement would not alter the character, scope, or design of the initial 1994 breach fill placement, the proposed action would constitute maintenance of a dike or similar structure because the breach fill was constructed as an engineered barrier between the Pacific Ocean on one side, and Half Moon Bay and the infrastructure of the City of Westport on the other. Thus, the breach fill is an engineered structure designed to control water, and such placements of material for repair and maintenance purposes are exempt from the requirements of Section 404 under Section 404(f)(1)(B) of the Clean Water Act. Because no work subject to regulation under Section 404 is being conducted, a Section 401 certification is not required.

5. Finding. Based on the attached environmental documentation, coordination, and analysis conducted by the Corps environmental staff, I have determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment and therefore does not require preparation of an environmental impact statement.

20 Sep 2012
Date



BRUCE A. ESTOK
Colonel, Corps of Engineers
Commanding