COASTAL ZONE MANAGEMENT ACT
CONSISTENCY DETERMINATION

Submitted by the U.S. Army Corps of Engineers, Portland District, Civil Works

For Actions Related to the

South Jetty Foredune Augmentation

Near the Mouth of the Columbia River, Clatsop County, Oregon

April, 2013

I. Introduction and Project Description:

The U.S. Army Corps of Engineers, Portland District Civil Works section (Corps) is proposing to construct a dynamic revetment feature adjacent to the South Jetty root near the Mouth of the Columbia River (MCR). This feature will augment the existing deteriorated foredune and arrest accelerated erosion in order to avoid a breach through the Spit and to protect the jetty root and the Federal Navigation Channel. Sand will be excavated, and then cobble fill material will be placed above and below the elevation delineating 404 and Section 10 Waters of the U.S. Excavated sand will be placed at the structure toe. This South Jetty Foredune Augmentation project is also a smaller component of and is related to future proposed actions described in the MCR Jetties Major Rehabilitation Environmental Assessment (EA) and related Biological Assessments (BA), Biological Opinion (BiOp), and Letter of Concurrence. Its completion is considered a critical base-condition for the future potential rehabilitation and repair work that is planned at the South Jetty proper, as well as North Jetty and Jetty A.

The purpose of protecting and stabilizing the foredune at the MCR South Jetty is to prevent further foredune erosion, and to mitigate the risk of foredune breaching and breaching of Clatsop Spit. It is advantageous to stabilize the foredune now, before it is completely eroded, so that the stabilizing treatment can utilize the foredune as a buttress. Stabilization of the south jetty foredune is required to maintain the South Jetty's functional purpose of providing deep-draft navigation at the Mouth of the Columbia River (MCR).

Currently, the foredune south of the South Jetty is in a condition of advanced deterioration. The initial foredune (1970's) had a crest elevation of 30 and 40 ft NAVD and 50-100 ft crest width. The foredune is now a relatively narrow feature on an otherwise flat, low-elevation area adjacent to a tidal marsh. The high-crested foredune prevents storm-induced overtopping and protects the narrow strip of low-lying land that is separating the ocean from the jetty lagoon called Trestle Bay. Between 2003 and 2007, the concave shoreline area receded more than 40 feet; thus, further reducing the protective ability of the foredune. Presently, the foredune crest has been reduced to less than 25 ft NAVD along much of the project's 1,100 ft reach.

Without stabilization, the foredune at the root of the South Jetty is expected to continue to erode and recede, resulting in a possible breach through the spit along the South Jetty Root and into Trestle Bay. It is estimated this breach could occur in 8-16 years. Such a breach would cause a secondary flow way to develop from the Columbia River estuary to the ocean, re-directing hydraulic flow from the existing inlet, threatening inlet stability, and disrupting navigation at the MCR.

During the late 1920s, the South Jetty root breached extensively, and there was considerable overtopping of Clatsop Spit. This breaching event modified the configuration of the MCR inlet and adversely affected navigation. The 1928 breach through the South Jetty cross section occurred near the jetty's shore connection. Before the jetty was repaired, a large volume of sediment passed through the breach (from south to north) and deposited in the inlet, changing the inlet's morphology. Much of the sediment in the littoral system immediately south of the jetty was lost through the breach, creating a sand deficit, and narrowing the margin between the ocean and Trestle Bay. Storm surge overtopped the shore and passed into Trestle Bay, threatening the stability of the entire inlet. Tidal circulation through the breach promoted the northward migration of Clatsop Spit, which adversely impacted navigation through the MCR.

A similar breach occurred at Grays Harbor, WA in December 1993. Rapid post-breach intervention was required to prevent loss of navigation function at the inlet and to protect the town of Westport. The post-breach response was costly and very large in scale. Through pre-breach intervention, this project seeks to avoid the potential for this type of costly breach scenario.

A dynamic revetment (cobble/gravel berm) will be constructed along the ocean side of the foredune immediately adjacent to the current root of the South Jetty at Clatsop Spit. The feature's dimensions are approximately: 1,100 linear feet; crest width 65-ft; crest height 22-ft NAVD; and slope1:5 h (resulting in about 150-ft total structure width from the edge of the existing dune). The total cobble fill volume is about 43,000 cy of material (not including the excavated and replaced sand), and associated excavation for keying-in the base of the structure is about 18,000 cy of sand. The outside, overlay of the feature will consist of rounded cobbles, and the core of the structure may be rounded or angular stones. The life-cycle of dynamic revetment is expected to be 20-50 years, with maintenance intervals of 10-15 years featuring 10-25% cobble replacement.

The dune augmentation feature will key-in to the existing foredune and will be comprised of a gravel bedding layer, a core of angular or rounded cobble, and a 4-ft deep rounded cobble overlay. The attributes of a dynamic revetment are such that the feature's cross-section will be compliant with wave and water level forcing and will subsequently be re-shaped to an equilibrium profile to match evolving site conditions. A properly designed and constructed dynamic revetment is "dynamically stable", so that it can adapt to a project site which exhibits time-varying topographic change (erosion). The slope aspect of dynamic revetment revetments is 2-3 times flatter than standard rip-rap revetments, due to the relatively small and dynamic material used (cobbles 1 to 12 inches vs. rip-rap 3 to 5 ft diameter). Rounded cobble material used within the dynamic revetment cross-section is more porous than conventional rip-rap and will absorb wave action, reducing turbulence & reflective dissipation, thus resulting in less erosion (scour) of structure toe and adjacent beach areas as compared to a conventional rip-rap revetment. Dynamic revetments are also more similar to naturally-formed cobble beaches that occur along the OR Coast. They reduce the potential for indirect hydraulic effects adjacent to the structure, and they are more aesthetically appealing and accessible for beach recreationalists.

The dynamic revetment will be constructed by first excavating sands from the toe of the existing foredune in order to key-in the feature (which could entail a depth of sand between 5-8ft depending on summer or winter beach profiles), and then placing cobble materials in layers. Excavation and material placement will be staged in sections and according to low-tides, in order to accommodate the challenges of periodic potential structure exposure to wave and tidal forces during storm surges. Otherwise, much of the construction will occur in the dry sands area. After construction is complete, the excavated sand will be placed at the toe of the structure to preserve the existing grade at the time of construction; any remaining sand will be used to supplement low spots in the foredune crest.

The construction, storage, and staging areas have been sited to avoid and minimize impacts to wetlands and cultural resources in the vicinity. Access to the site through the Park will be along the jetty road. Dune access will occur via unpaved improvement to Access Road A, one of two existing sand roads that traverse the shore pine (*Pinus contorta 'Contorta'*) forest between the Jetty Access Road and shoreline. From the southern-most route, a small loop road enclosing an additional staging area is also proposed immediately adjacent to the dune/beach access site. These impacts will involve ground disturbance,

including removal of some of the shore pine trees (0.37 acre). The entrance to the access road will require some widening to provide a turning radius and meet grade for safe equipment passage. This will entail some wetland impacts (0.08 acre). There will also be limited staging and stockpile opportunity at a second, more northern existing unimproved roadway Access Road B, as well as in Parking Area B. This northern unimproved road and staging area is mostly free of trees and consists of a dominance of scotch broom and European beach grass. Traffic will be restricted extending west on the Access Road B roadway in order to avoid effects to cultural resources (the trestle) and further disturbance to the dune. Construction implementation plans were developed in a manner that balanced and minimized effects to cultural resources, shore pine forests, foredune vegetation, and wetlands in the project area. Wetlands and shore pine impacts were avoided and minimized, but ultimately unavoidable when considering geographical and construction related constraints in combination with impacts to other resources.

A survey of the existing vegetation to be removed will be conducted and will include stem counts for affected shore pine in order to inform the replanting plan for site restoration. Vegetation and trees and removal will be minimized. A large majority of vegetation removal will include scotch broom (*Cytisus scoparius (L.)*), European beach grass (*Ammophila arenaria (L.)*), and some shore pine (*Pinus contorta 'Contorta'*). Removed trees will be disposed of off-site (unless otherwise indicated). Clearing vegetation at the dune crest will be avoided as much as possible, and clearing on the leeward side is more preferable, relatively, in order to maintain dune stability. Post-construction restoration plans will be reviewed by the Oregon Parks and Recreation Department Forester to ensure the replanting plan meets Park needs.

Areas will be re-vegetated with native, in-kind plant species, follow standard practices and be planted during the recommended planting season for each particular species. A pre-construction and post-construction survey will be taken to document existing and final conditions. Shore pine replanting ratios will be no less than 1:5. The replanting plan prepared by the Contractor will indicate a reasonable survivability rate after 1 year to be expected. Areas that do not meet this rate will be replanted. No herbicide application will be allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation. No surface application of fertilizer will occur within 50 feet of any wetland or ocean waters. Haul roads will be graded and narrowed to meet pre-site conditions. USACE plans to restrict vehicular access to the beach near the project site following construction. Coordination with Parks will be required to post signs and barriers.

Following construction, the contractor will remove all equipment, trailers, and material from the site. The Contractor will be responsible for restoring in-kind or better in areas that are disturbed following construction activities. Disturbed areas will most likely include Parking lot B, Jetty Road, the access haul road A&B, and any staging areas. The staging areas will be scarified and replanted with native in-kind species. USACE will consider input from the Forester at the Oregon Parks and Recreation Department regarding re-vegetation plan design. It is anticipated that Jetty Road and Parking Lot B will need patchwork. If road repairs involve more intensive paving repairs, then a post-construction stormwater management plan must be developed to indicate the water quality treatment for affected wetlands and water bodies.

Approximately 0.08 acres of interdunal depressional palustrine wetlands will be permanently impacted due to unavoidable construction activities (the need to meet a steep grade between the existing unimproved road and the paved road; and the need for an adequate area to meet turning radius

requirements; along with the potential need for future replenishment at the dune) and cultural constraints (World War II bunkers, the jetty trestle, etc.). Mitigation bank credits from will be purchased from a mitigation bank coming on-line in April near Long Beach WA. Though it is out-of-basin, (Columbia River rather than Pacific Ocean), it has appropriate, in-kind wetland credits. This mitigation is considered appropriate because: there are no mitigation banks or in lieu fee locations with service areas applicable to the project location; the affected wetland type limits the potential pool of banks with similar wetland types; and there are current limitations for on-site wetland restoration or creation.

The dynamic revetment will entail temporary removal and permanent fill below 404 waters of the U.S. The functional hydraulic and hydrologic effects of this fill have been somewhat avoided and minimized based on the structure's ability to better accommodating natural erosional and depositional coastal processes while maintaining the shoreline protection required for protecting the navigational jetty structure. The augmentation feature will also blend in with the beach aesthetic and recreational uses that occur in the vicinity. Though most of the structure will be behind/above the 404 jurisdictional elevation and in the dry sands, the depth required to key-in the toe is below this elevation, and the structure will be inundated during storm surges. Therefore, some sandy shoreline habitat is being converted with the placement of cobble materials. As compensatory mitigation, the Corps is proposing to participate in tsunami debris removal. This will help protect the beach ecosystem by removing artificial debris that can have severe biological, chemical, and physical effects on water quality the coastal community. The Corps will coordinate with OPRD and ODFW to determine the best way to implement clean-up actions in the vicinity of the project area.

II. Jurisdiction and Consistency Requirements

For this project, relevant elevations are listed below:

MEAN LOWER LOW WATER, MLLW = -0.25 ft NAVD
MEAN HIGHER HIGH WATER, MHHW = 7.5 ft NAVD
MEAN HIGH WATER, MHW = 6.9 ft NAVD
MEAN TIDE LEVEL, MTL = 4.0 ft NAVD
MEAN SEA LEVEL, MSL = 3.8 ft NAVD
MEAN LOW WATER, MLW = 1.0 ft NAVD
Extreme Astronomical High Tide (at Astoria, OR) = 10.14 ft (3.09m) NAVD88
Extreme Astronomical Low Tide (at Astoria, OR) = -1.08 ft (0.33m) NAVD88
Augmentation Feature, Keyed-in Depth = 8.6 NAVD 88

The Corps owns the project area on the Clatsop Spit where the dynamic revetment is proposed and leases it to Fort Stevens State Park under the Oregon Parks and Recreation Department (OPRD). As such, the State Park is on federal lands, and the Corps has been in coordination with OPRD during project development.

In its initial design, the dynamic revetment will key-in to a depth elevation of approximately 8.6 ft NAVD 88. The location of the proposed project feature is exclusively on federal property, and as designed the foredune feature does not extend below the Mean High Water (MHW) line (8.6 ft vs. 6.9 ft, respectively). The dynamic nature of the structure will shift over time, such that future slopes could flatten from a 1:5 to a 1:15 profile and may extend beyond the design elevation. However, in the future the foredune augmentation feature is not expected to extend beyond 6.9 ft NAVD. Mean High Water

(6.9 ft NAVD) demarcates the landward extent of State ownership of the Territorial Sea, and State-owned Recreation Area and Submersible lands. On other non-federal lands, this zone from the jurisdictional vegetation line is typically under the jurisdiction of OR Parks and Recreation Department (OPRD) as part of the area indicated "Dry Sands, Public Recreation Easement" within the Oregon Shore Boundary (which extends landward to the Beach Zone vegetation line). Additionally, the landward jurisdictional elevation for the Shoreline State Planning Goals is Mean Higher High Water (MHHW) (7.5 NAVD 88). However, the foredune augmentation feature as constructed will be exclusively on federal lands.

Under 15 CFR 923.33 (a), the constructed project is considered on Federal excluded lands, which *are excluded from the boundaries of the State's coastal zone*. Additionally, *federal lands are not subject to local zoning regulations.* However, 15 CFR 923.33 (b) indicates the Federal actions must comply with consistency provisions of section 307 of the CZMA when there are spillover impacts. The Corps has determined that in this particular case there could be minor "spillover" effects due to the following implementation related activities: the proposed Clean Water Act 404 waters compensatory mitigation of tsunami debris removal will occur on state-owned lands; temporary access restrictions will be required during construction on the beach and the Jetty Access Road outside of federal lands; permits are required for passage of trucks along non-federal roads in the park; and there is very minimal possibility that through the flattening of the structure over time, there is limited potential for migration of some of the cobble material. Therefore, this project is seeking state concurrence with the Corps' Coastal Zone Management Act (CZMA) Consistency Determination from the Department of Land Conservation and Development (DLCD) per CZMA Section 307 (c) and 15 CFR 923.33 (a) & (b).

The CZMA per 15 CFR 930.30 states "provisions of this subpart are intended to assure that all Federal agency activities including development projects affecting any coastal use or resource will be undertaken in a manner consistent to the maximum extent practicable with the enforceable policies of approved management programs." Therefore, CZMA requires that federal actions be consistent, to the maximum extent practicable with the enforceable policies of the Oregon Coastal Management Program (OCMP). According to DLCD, the enforceable policies of the OCMP include: (1) the statewide planning goals, (2) the applicable acknowledged city or county comprehensive plans and land use regulations (those approved by the Land Conservation and Development Commission as being in compliance with the statewide planning goals), and (3) selected state authorities (e.g. those governing removal-fill, water quality, actions in the ocean shore, and fish and wildlife protection). The following discussion explains the content of the enforceable policies of the OCMP and how this project meets the requirements of such policies.

The Corps prepared its determination consistent with content requirements described in 15 CFR 930.39, and has based its determination "upon an evaluation of the relevant enforceable policies of the management program" and has included or incorporated by reference commensurate supporting information. The Corps has evaluated its determination of effects in compliance with 15 CFR 930.33-39, as applicable. The Corps has also considered 15 CFR 930.32 when evaluating consistency to the "maximum extent practicable".

In evaluating the determination of consistency for the South Jetty Foredune Augmentation Project, it is also notable that repairs have been conducted on the South Jetty proper numerous times in the past, most recently in 2007. In 2004, DLCD conditionally concurred with the Corps' consistency determination

that the proposal for the repair of the South Jetty at the Mouth of the Columbia River in Clatsop County, Oregon could proceed in a manner consistent to the maximum extent practicable with the enforceable policies of the Oregon Coastal Management Program (OCMP). This South Jetty Foredune Augmentation Project is a smaller component of and is related to previous and future repair work planned at the South Jetty proper. Work related to the greater suite of jetty rehabilitation actions was mentioned in the 2004 consistency determination. The foredune augmentation is related to past jetty maintenance and root protection measures and has been identified as a critical base condition for protecting the jetty in order to avoid a breach through the neck of the Spit before implementation of proposed future major repairs on the jetty proper.

Additionally, similar project work which included a revetment structure was completed by the Corps at the Tillamook North Jetty, with concurrence received from DLCD in 2004. Implementation of a revetment structure in order to protect the North Jetty root at Tillamook, and measures to protect the jetty root at the MCR South Jetty indicate there is precedence for concurrence with the Corps' determination that these actions are consistent with enforceable state and local policies. This foredune augmentation action will occur both prior to and as a supplement to the major repairs and rehabilitation actions that are required for the larger MCR jetty system, including additional work needed on the South Jetty. Jetty repairs and erosion protection measures were partially identified in the 2004 consistency determination and concurrence. As such, the review by DLCD for proposed foredune augmentation activities may be construed as supplemental coordination per 15 CFR 930.46.

III. Consistency Determination

A. Statewide Planning Goals, the Clatsop County Comprehensive Plans Goals, and Policies, and the Clatsop County Land and Water Development and Use Ordinances:

References:

- *Oregon's Statewide Planning Goals & Guidelines*, (March 12, 2010);
- *Clatsop County Comprehensive Plan Goals and Policies*, Codified May 29, 2007;
- *Clatsop County Land and Water Development and Use Ordinance*, July 1, 2005.

The Corps in coordination with DLCD and the County Planning Office has determined that the following Statewide Planning Goals, local comprehensive plan policies, and zoning ordinances *may* be applicable to demonstrating the proposed project's consistency with the enforceable policies of the OCMP. *The Corps has evaluated consistency of the project as a whole and has not limited the evaluation to its potential spillover effects, even though a majority of the actions and the entirety of the constructed feature will occur on federal lands that are not subject to local zoning and are excluded from the state's coastal zone (15 CFR 923.33 (a)).*

The Corps has completed resource inventories and impact assessments for various other state and federal laws, including but not limited to the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), and the National Historic Preservation Act (NHPA). The Corps has received a Biological Opinion from National Marine Fisheries Service (NMFS) and a Letter of Concurrence from U.S. Fish and Wildlife Service (USFWS) regarding this project as a component of

the larger suite of jetty rehabilitation and repair actions. The Corps will be updating its existing CWA Section 404 (b) (1) Evaluation, and has requested State Water Quality Certification (WQC) as required under CWA Section 401. The Corps submitted information to DEQ in a Joint Permit Application, which included the Corps' evaluation related to water quality impacts. The Corps also is in coordination with the State Historic Preservation Office (SHPO) regarding cultural resources. Information provided for this consistency determination can be found in further detail in all of this documentation, which is incorporated herein by reference. These can be viewed at the Corps' website at: http://www.nwp.usace.army.mil/Missions/Currentprojects/MouthoftheColumbiaRiverJettyRehabilitation.aspx.

1. STATEWIDE PLANNING GOALS

GOAL 6: AIR, WATER AND LAND QUALITY: *"To maintain and improve the quality of the air, water and land resources of the state."*

The Corps' compliance with state and federal environmental laws demonstrates consistency with this goal. These laws include but are not limited to the ESA, under which the Corps has completed Consultation with the NMFS and the USFWS, and Section 106 of the NHPA under which the Corps is coordinating with the SHPO. These evaluations were conducted for the greater suite of jetty rehabilitation and repair actions, which included foredune augmentation as a baseline condition. These documents are incorporated herein.

This foredune stabilization activity will remain in compliance with the Clean Air Act (CAA) and the State Implementation Plan. The project is not located in a non-attainment area; it is not a transportation project; and it will not qualify as a major stationary source of emissions of criteria pollutants.

The Corps has requested CWA Section 401 Water Quality Certification (WQC) from OR Department of Environmental Quality (DEQ) and has further submitted Water Quality Findings indicating how proposed actions will be protective of state-designated Beneficial Uses for the North Coast Basin. A CWA 404(b) (1) Evaluation also was prepared for the Major Rehabilitation and Major Maintenance Actions, and this foredune stabilization project was also included in the evaluation. The Corps will purchase compensatory wetland mitigation credits for its unavoidable impacts to 0.08 acre of interdunal palustrine emergent freshwater depressional wetlands immediately adjacent to the existing Jetty Access Road. The Corps is also proposing to coordinate with Oregon Parks and Recreation Department (OPRD) for tsunami debris removal to offset fill in 404 waters other than wetlands. The existing 2012 404 (b) (1) evaluation document will be updated to reflect the supplemental wetland determination and wetlands and waters compensatory mitigation related to changes in the staging area and design footprint for the foredune augmentation work. These staging area changes avoided impacts to cultural resources and shore pine forests. A Sediment Evaluation Framework (SEF) determination of clean fill also was submitted with the CWA 401 WQC request. The Corps has a CWA 402 National Pollution Discharge Elimination System (NPDES) general 1200-CA permit (#14926) through the DEQ for its stormwater management and erosion controls during project construction. The Corps intends to maintain compliance with its terms and conditions, including development of an Erosion and Sediment Control Plan (ESCP) prior to disturbance and work performed on federal lands.

Additionally, under the National Environmental Policy Act the Corps will be updating and resubmitting for public comment the *Revised Final Environmental Assessment for Rehabilitation of the Jetty System at the Mouth of the Columbia River* (otherwise known as the EA). These documents satisfy the substantive federal requirement of Coastal Zone Management Act and also demonstrate consistency with state and local land use policies.

GOAL 17: COASTAL SHORELANDS: *"To conserve, protect, where appropriate, develop and where appropriate restore the resources and benefits of all coastal shorelands, recognizing their value for protection and maintenance of water quality, fish and wildlife habitat, water-dependent uses, economic resources and recreation and aesthetics. The management of these shoreland areas shall be compatible with the characteristics of the adjacent coastal waters; and To reduce the hazard to human life and property, and the adverse effects upon water quality and fish and wildlife habitat, resulting from the use and enjoyment of Oregon's coastal shorelands."*

The project features are exclusively on federal lands. Much of the description of consistency with Goal 6 also applies here. Though there will be some restrictions to certain portions of beach access during construction of the feature, this will be short-term and temporary in nature. The OPRD manages the access and uses in the area through a lease with the Corps, and the Corps foredune augmentation project will not be changing any of these uses. Proposed construction access points are along existing unimproved roads. The proposed staging areas will be re-vegetated.

The purpose of the South Jetty foredune stabilization is to implement a critical stabilization measure that: strengthens the South Jetty Root area before a breach event develops, reduces the risk of foredune breaching, and extends the jetty's functional purpose maintaining deep-draft navigation at the Mouth of the Columbia River (MCR). The jetty system supports safe passage of maritime commerce through the MCR, which is estimated to be about $20 Billion per year. Further, preserving the function of the jetty and reducing the risk of fill into the navigation channel is protective of human life and property. This is *not* a dredging or disposal site proposal. This project is protective of water-dependent navigational uses as well as recreational, cultural, and ecological resources in the vicinity. Jetties represent a significant public investment and perform a critical safety function. This project element is a continuation of repair and rehabilitation of the South Jetty proper, and is a critical base-condition for any future repair and rehabilitation actions required at the South Jetty. As noted in the Goal 6 discussion, the Corps has determined that the benefits of protecting the root and avoiding a breach that could affect deep-draft navigation outweigh the unavoidable effects to wetlands and waters of the U.S.

Currently, the foredune south of the South Jetty is in a condition of advanced deterioration. The initial foredune (1970's) had a crest elevation of 30 and 40 ft NAVD and 50-100 ft crest width. The foredune is now a relatively narrow feature on an otherwise flat, low-elevation area adjacent to a tidal marsh. The high-crested foredune prevents storm-induced overtopping and protects the narrow strip of low-lying land that is separating the ocean from the jetty lagoon called Trestle Bay. Between 2003 and 2007, the concave shoreline area receded more than 40 feet; thus, further reducing the protective ability of the foredune. Presently, the foredune crest has been reduced to less than 25 ft NAVD along much of the project's 1,100 ft reach. It is advantageous to stabilize the foredune before it is completely eroded so that the stabilizing treatment can utilize the foredune as a buttress.

Besides protecting the jetty from breaching, stabilizing the existing dune feature will maintain the existing coastal foredune, back-dune, and relic dune features, along with the mature shore pine forest. The project has also been sited to avoid the historic jetty trestle features, which would also be affected in the event of a breach. Though not part of the project's direct purpose, the foredune augmentation feature also will protect the existing South Jetty Access Road, which leads to former military developments and the current restroom and parking lot facilities on the Clatsop Spit.

Goal 17, Implementation requirement (5) states:

> *"Land-use management practices and non-structural solutions to problems of erosion and flooding shall be preferred to structural solutions. Where shown to be necessary, water and erosion control structures, such as jetties, bulkheads, seawalls and similar protective structures: and fill whether located in the waterways or on shorelands above ordinary high water mark, shall be designed to minimize adverse impacts on water currents, erosion, and accretion patterns."*

There is already dense coverage of dunegrass and shore pine vegetation on the dune, but it is insufficient to withstand the wave and wind forcing environment at this location. As the dune scarp continues to erode towards Trestle Bay, the existing vegetation is being undermined. Vegetative solutions were not deemed adequate to resolve the accelerated erosion problem.

Multiple alternatives were considered to address erosion issues and minimize adverse impacts to ocean processes, including a traditional riprap revetment, geotubes filled with sand and stacked on the beach, beach nourishment via dredged material, and sand fill instead of cobble. These alternatives were not selected as preferred for various reasons. A riprap structure would have been a less accessible to recreationalist, and would be a "harder" structural approach more reflective of wave action and less complementary to a more natural beach aesthetic. Geotubes are considered a temporary solution that was expected to degrade and disperse over time. Sand fill and beach nourishment would have had more environmental effects based on the source and delivery of the sand, and beach nourishment would take too long to become adequately effective to arrest the erosion and loss of the dune in this location. Mobile beach sand fill in an area already experiencing continual recession was not considered a sustainable solution.

A dynamic revetment feature of smaller cobble relative to a larger, more static rip-rap structure is proposed in order to provide sufficient protection to the existing foredune. This design element uses the existing dune as buttress before it has eroded away completely. This avoids the need for construction of an additional seawall or other feature. The design of the cobble berm augmentation feature is also less "structural" than more hardened stabilization measures like sea walls or rip-rap revetments.

The cobble berm design and extent minimize the risk of transferring changes in erosion or deposition patterns to adjacent beach and dune areas because the movement of the cobble berm feature itself dissipates rather than transfers or reflects the erosive energy. The purpose of the project is to avoid erosion of the adjacent jetty root, and to preserve the existing dune function and structure in the vicinity. The interface with the existing stable dune has been designed to avoid undermining it.

The dynamic revetment project approach is specifically designed to better blend in with the recreational uses and coastal processes that occur in the location. Both the composition and function of the dynamic revetment alternative more closely mimic natural cobble beaches and processes that have formed along other portions of the Oregon Coast. The character of the feature also better accommodates recreational accessibility and natural coastal aesthetics, particularly in contrast to more hardened alternative rip-rap structures. Through its project development process, the Corps has identified design and implementation measures that minimize and avoid impacts and reduce the project footprint and preserve shore pine and foredune vegetation. The Corps is also proposing to restore foredune vegetation after project completion. The dynamic revetment/cobble berm design maintains some of the natural coastal processes while reducing the potential for erosional impacts along adjacent shorelines.

As described under Goal 6, the Corps has completed impact assessments for various state and federal laws including but not limited to the ESA. Consultations were conducted for the greater suite of jetty rehabilitation and repair actions, which included foredune augmentation as a baseline condition

During and after implementation of its project, the resident biological community and ecological integrity of the Spit will be preserved. While there will be a small acreage of substrate conversion from dry sand habitat to a cobble foredune substrate, the dynamic design of the cobble berm/revetment feature maintains some coastal erosional and depositional processes because of the malleable nature of the feature. Relative to a typical hardened revetment, there is less chance of the proposed feature reflecting or redirecting erosional forces to the adjacent shoreline. By reducing wave run-up and the potential for over-topping, the existing foredune and associated vegetation would be preserved.

The coarsening of the shoreline in this location is not expected to significantly alter the biological communities or habitats in the vicinity. Most of the project is located in an area that is comprised of dry sands, except during storm events and extreme tides. Proposed construction activities for the most part have avoided wet sands and dune disturbance, and impacts from equipment access would be short-term. Compensatory mitigation for fill in 404 waters of the U.S. in the form of tsunami debris removal has been proposed to offset the minimal impacts of substrate conversion and temporal construction effects.

The project area is also outside of boundaries delineating razor clam beds. ODFW provided boundaries for protection of the existing razor clam beds, and the Corps will prohibit construction traffic in this area and along the beach outside of the vicinity of the dune structure. Mobile organisms are adapted to the dynamic nature of the habitat and some to a certain extent may be able relocate.

The Corps has received a Biological Opinion from National Marine Fisheries Service (NMFS) and a Letter of Concurrence from U.S. Fish and Wildlife Service (USFWS) regarding this project as a component of the larger suite of jetty rehabilitation and repair actions. Such documentation is incorporated herein by reference. Biological Assessments (BAs) were prepared under ESA consultation to address federally listed species under the jurisdiction of the NMFS and USFWS for the greater suite of Rehabilitation and critical repair actions which included the proposed foredune stabilization action and are incorporated herein. The BAs were provided to the respective agencies for review and consultation.

On March 18, 2011, USACE received a Biological Opinion from NMFS indicating that USACE proposed actions were not likely to adversely affect any listed species, with the exception of eulachon,

humpback whales, and Stellar sea lions (May 18, 2011, *Endangered Species Act Biological Opinion and Conference Report and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Major Rehabilitation of the Jetty System at the Mouth of the Columbia River* – NMFS No 2010/06104,). For these species, NMFS determined that Corps' actions were not likely to jeopardize the existence of the species. NMFS also concluded that Corps actions were not likely to adversely modify any of the current or proposed critical habitats. There was a Conservation Recommendation to carry out actions to reverse threats to species survival identified in the *Columbia River Estuary ESA Recovery Plan Module for Salmon and Steelhead*. USACE also provided a conference report for critical habitat that NMFS proposed for leatherback turtles, eulachon, and Lower Columbia River coho salmon. USACE will request NMFS adopts its conference report now that the eulachon and leatherback habitat has become designated. The Corps will also consult on proposed critical habitat for Lower Columbia River Coho.

On February 23, 2011 USACE received a Letter of Concurrence from USFW regarding potential effects to species under their jurisdiction (*Major Rehabilitation of the Jetty System at the Mouth of the Columbia River Navigation Channel, Clatsop County, Oregon and Pacific County, WA*; USFWS # 13420-2011-I-0082). USACE determined its actions would have no effect on listed species, with the exception of bull trout, marbled murrelets, and snowy plover. USACE concluded that its actions were not likely to adversely affect these species or their critical habitat. The USFW concurred with USACEs determination. USFW also included four Conservation Recommendations to protect and improve snowy plover habitat and manage attractant waste derived from construction actions.

The foredune stabilization and associated actions remain within the scope of effects previously evaluated in the 2011 Biological Opinion and Concurrence Letter. USACE confirmed this in a conference call with NMFS and in an email with USFWS. Additionally, because stone placement and pile installation will not occur on the jetty, an Incidental Harassment Authorization (IHA) is not required for this foredune augmentation component of work.

GOAL 18: BEACHES AND DUNES: *"To conserve, protect, where appropriate develop, and where appropriate restore the resources and benefits of coastal beach and dune areas; and to reduce the hazard to human life and property from natural or man-induced actions associated with these areas."*

Implementation Policy 5: *"Beachfront protective structures shall be permitted only where development existed on or before January 1, 1977. Local comprehensive plans shall identify areas where development existed on January 1, 1977. For the purposes of this requirement and Implementation Requirement 7, 'development' means houses, commercial and industrial buildings, and vacant subdivision lots which are physically improved through construction of streets and provision of utilities to the lot and includes areas where an exception to (2) above has been approved. The criteria for review of all shore and beachfront protective structures shall provide that:*

(a) visual impacts are minimized;
(b) necessary access to the beach is maintained;
(c) negative impacts on adjacent property are minimized; and
(d) long-term or recurring costs to the public are avoided."

The foredune augmentation feature will be located exclusively on federal lands, which are excluded from the state coastal zone and local zoning. Notwithstanding this exclusion, the Corps has determined that the proposed action is consistent to the maximum extent practicable with Goal 18.

The Corps has several lines of reasoning supporting this consistency determination: 1) While the jetty and associated structures may not qualify as "development" for purposes of this goal, the proposed action and associated circumstances would qualify for a goal exception; 2) there is precedence for a consistency determination based on DLCD finding related to the Tillamook Revetment in 2004; and 3) prior work related to repair and rehabilitation at the South Jetty was already determined to be consistent in 2004, and this action is supplementary to what was proposed, executed, and predicted as future maintenance needs at the South Jetty.

1.) The main purpose of the project is to preserve and augment the existing foredune in order to protect the South Jetty Root and to avoid potential breaching through the neck of the Clatsop Spit. This is an important base-condition for any future repair or rehabilitation of the South Jetty. If such a breach were to occur, there would be significant impacts to the existing Spit, roadway, park facilities, the Federal Navigation Channel, and the entrance to the Mouth of the Columbia River (MCR).

Such a breach would not only negatively affect the Federal Navigation Channel, but would also impact the existing Jetty Access Road that provides the only route accessing Clatsop Spit. There is also a real potential that such a breach would affect the existing parking lots and restroom facilities on the Spit, along with cultural resource sites like the historic buried bunkers and trestle that are in the vicinity. As noted in Goal 17, the purpose of the South Jetty foredune stabilization is to implement a critical stabilization measure that: strengthens the South Jetty Root area before a breach event develops, reduces the risk of foredune breaching, and extends the jetty's functional purpose maintaining deep-draft navigation at the Mouth of the Columbia River (MCR). The jetty system supports safe passage of maritime commerce through the MCR, which is estimated to be about $20 Billion per year. Further, preserving the function of the jetty and reducing the risk of fill into the navigation channel is protective of human life and property. This is *not* a dredging or disposal site proposal. This project is protective of water-dependent navigational uses as well as recreational, cultural, and ecological resources in the vicinity. Jetties represent a significant public investment and perform a critical safety function. This project element is a continuation of repair and rehabilitation of the South Jetty proper, and is a critical base-condition for any future repair and rehabilitation actions required at the South Jetty. The proposed dynamic revetment reduces the hazard to human life and property from natural or man-induced actions associated with this area.

The Corps has assessed the applicable goal requirements contained in Implementation requirement 5, outlined above. Visually, the cobble berm revetment feature will look similar to cobble beaches that occur naturally along the Oregon coast. The Corps is not creating or hindering new or existing access to the beach, as this is regulated by OPRD under it lease with the Corps. The characteristic of the smaller rounded cobble maintain the beach aesthetic and make it much more accessible and passable by beach recreationalists. The dynamic and malleable nature of the revetment has been designed to absorb and dissipate energy, rather than reflecting or translating the erosion problem to adjacent beach areas. Finally, the design has also considered the maintenance needs over time and has balanced the size of the feature with the replenishment requirements, which are estimated to be 4,000 to 10,000 cy every 10-years.

The Corps has also considered whether the project would qualify for an exception to implementation requirement (5) based on the standards for such exceptions as outlined in Statewide Planning Goal 2-Land Use Planning. Notwithstanding its sovereign immunity from seeking a Goal Exception for the construction of the foredune feature on federal lands, the Corps has determined that its proposed actions are consistent with the statewide standards for such a Goal Exception for the following reasons:

Exceptions Standards:

(1) *"Reasons justify why the state policy embodied in the applicable goals should not apply;"*
In this particular situation, the prohibition of a beachfront protective structure could result in the catastrophic breach of the foredune and the South Jetty root, jeopardizing a significant navigation structure that protects the Federal Navigation Channel and the Mouth of the Columbia River, both of which are essential to regional commerce. The construction of the proposed dynamic revetment to stabilize the root of the South Jetty will prevent the impacts of a jetty failure on resources and uses that are key components of the county estuary plan and the land uses anticipated in the plan. In this particular instance the protection of the jetty is an essential activity, required to maintain a unique navigational feature and to promote the policies embodied in the Clatsop County plan and statewide planning goals.

(2) *"Areas which do not require a new exception cannot reasonably accommodate the use;"*
The proposed project area is the best and only logical location for the proposed foredune augmentation feature. There is no other location that will provide breach protection for the adjacent South Jetty root. The very narrow strip comprising the neck of Clatsop Spit provides limited inland, non-shoreline area. Any protective feature further inland would allow the dune to erode further towards Trestle Bay and would not provide adequate level of jetty protection without significantly greater environmental impacts and limited, if any, effectiveness. Not implementing foredune augmentation would allow additional narrowing of the width of the Spit. As noted, this location is already at risk of breach because of the accelerated erosion of the dividing dune, its location at the MCR, and its exposure to extreme coastal and fluvial processes. Allowing further erosion of the natural dune would require the construction of an additional protective feature (such as a seawall) in order to provide sufficient backing for any constructed dune stabilization feature to protect the jetty, since there would be nothing left to serve as a buttress. A new inland feature that does not take advantage of the existing dune would likely be a much larger feature in order to withstand the forcing environment in this coastal location. Based on the Corps' analysis, there are no areas which do not require an exception which could reasonably accommodate the use.

(3) *"The long-term environmental, economic, social and energy consequences resulting from the use of the proposed site with measures designed to reduce adverse impacts are not significantly more adverse than would typically result from the same proposal being located in areas requiring a goal exception other than the proposed site;"*
The jetty system supports safe passage of maritime commerce through the MCR, which is estimated to be about $20 Billion per year. Further, preserving the function of the jetty and reducing the risk of fill into the navigation channel is protective of human life and property. Jetties represent a significant public investment and perform a critical safety function. This project element is a continuation of repair and rehabilitation of the South Jetty proper, and is a

critical base-condition for any future repair and rehabilitation actions required at the South Jetty. As indicated above, the environmental, economic, social and energy costs associated with a catastrophic jetty breach are more significant than construction of the small dynamic revetment designed to limit the potential for such failure. The dynamic revetment is designed to protect the root of the jetty and to avoid a breach through the neck of Clatsop Spit into the Federal Navigation Channel. The feature is not expected to have significant environmental impacts. Analyses of the resources in the area and the functional structure design indicate that there will be minimal impact on biological or cultural resources, currents, sediment transport and erosion-accretion patterns. The overall impact will be positive in that such impacts are significantly less severe than the results of responding to a jetty failure or breach of the Spit. Additionally, the area impacted is in public ownership and no impacts that are more severe than impacts from continued erosion adjacent to the current jetty on any adjacent development are anticipated. The benefit from constructing this small dynamic revetment is protecting the jetty root and reducing the potential for a catastrophic jetty breach.

(4) *"The proposed uses are compatible with other adjacent uses or will be so rendered through measures designed to reduce adverse impacts."*
Adjacent uses to the north include the Fort Stevens State Park, the ocean shore, beach and dune features, a viewing tower, and a parking area. The navigation channel is also located north of the jetty. The dynamic revetment will serve to stabilize foredune and protect the jetty root. There are no identified compatibility issues with these uses. The revetment is designed as the minimum required to stabilize the foredune, and through its malleable design will accommodate coastal processes. It will also be more compatible with coastal aesthetics, as it is similar to cobble berm beaches that have formed naturally along the Oregon Coast. The smaller cobble size is also more easily accessible and passable for beach recreationalist, though the feature itself will be mostly in the dry, away from the wet sand and more heavily used clamming areas.

The Corps has determined its proposal for South Jetty Foredune Augmentation is consistent with Goal 18, Implementation Policy 5. Though the feature is located entirely on federal lands, it also is protective of critical navigational infrastructures, including the South Jetty and the Federal Navigation Channel, historical World War II bunkers, Park facilities and restrooms, and the South Jetty Access Road. Though the Corps will not be applying for a Goal exception, it meets the standards for such an exception. Further, maintenance of the South Jetty has been determined to be consistent in the 2004 determination and concurrence by DLCD, and this component of the work is supplemental to actions that were described for the previous and future jetty repairs. Finally, work that received concurrence in 2004 for the revetment at the Tillamook North Jetty was similar to circumstances described for the South Jetty Foredune Augmentation, for which the Corps' Consistency Determination also received concurrence from DLCD.

2.) In 2004 the Corps proposed a revetment structure to protect the root at the Tillamook North Jetty. This was a rip-rap structure that was constructed in conjunction with repairs on the jetty proper. The Corps received concurrence from DLCD with it consistency determination on July 1, 2004, which included the consistency with a Goal 18 Exception. Additionally, DLCD noted in the concurrence that in light of the potential for a breach, the circumstances for review of the project could also represent an "exigent circumstance" which limits complete adherence to the procedural requirements of the OCMP. If viewed as an exigent circumstance, this deviation would likely represent the minimum deviation from

the OCMP requirements to address the exigent circumstances. DLCD went on to note that any procedural inconsistencies could be fully resolved by County integration of an appropriate exception within the plan at the earliest opportunity. The situation at the MCR South Jetty is similar in nature and potential effect.

3.) Prior work related to repair and rehabilitation at the South Jetty was already determined by DLCD to be consistent with state and local land use policies on November 5, 2004. That documentation describes the likelihood of future jetty repair and major rehabilitation, and its relationship to the executed interim repairs carried out in 2006 and 2007. The foredune augmentation action is supplementary to what was proposed, executed, and predicted as future maintenance needs at the South Jetty. Therefore, there is precedence for a consistency determination related to this work , and as such, the review by DLCD for proposed foredune augmentation activities may be construed as supplemental coordination per 15 CFR 930.46.

2. CLATSOP COUNTY LAND USE PLANNING:

The following Zoning and Comprehensive Plan information is reflected on Clatsop County's website (http://maps.co.clatsop.or.us/applications/index.html, accessed 3/21/13). However, the action is being proposed by a federal agency, and the project features are located exclusively of federal lands. Federal lands status is not accurately reflected on the County's webmaps site indicating zoning.

Ground Coordinates: X: 7313227.46161; Y: 952147.43586
Zoning: RM - RECREATION MANAGEMENT – grading and fill is allowed in areas zoned RM.
Comp Plan: CONSERVATION OTHER RESOURCES – "*Conservation Other Resources areas provide important resource or ecosystem support functions such as lakes and wetlands and federal, state and local parks. Other areas designated Conservation Other Resources include lands for low intensity uses which do not disrupt the resource and recreational value of the land.* Most of the Columbia River Estuary is in this designation.*"
Overlay Districts:

- BEACHES AND DUNES OVERLAY (LWDUO 4.050) – The proposed project is allowed in the BDO as "structural shoreline stabilization" as per LWDUO 4.056(4)(B) (see discussion, below);
- SHORELINE OVERLAY (LWDUO 4.080) – The area is identified as a Category 1 shoreland under LWDUO 4086(1). The proposed project is allowed in the SO under 4.088(5) *Navigational Aids* due to its relationship to the South Jetty.

For purposes of CZMA consistency, there are some unique features of this project. First, the project feature is located entirely on federal lands. Second, the Corps is not required to obtain any local or state permits. Federal actions are exempt from local and state permitting by the Coastal Zone Management Act and by LCDC administrative rules, unless required by other federal law (See 15 CFR 930.39(e) and OAR 660-035-0030). As outlined in 15, CFR 930.39, "Federal agencies shall still be consistent to the maximum extent practicable with the enforceable policies that are contained in such State permit programs that are part of a management program". Although the Corps is not seeking a local development permit or a plan amendment containing a goal exception, the proposed action meets both local permit and statewide planning goal requirements for a goal exception as outlined. Therefore this

action is consistent to the maximum extent practicable with the enforceable policies of the Oregon Coastal Management Program.

CLATSOP COUNTY ZONING

As required by the Oregon Department of Environmental Quality (DEQ) for the federal CWA 401 WQC, and for DLCD's review process, the Corps requested a Land Use Compatibility Statement (LUCS) from the Clatsop County Planning Department. The statement will be included as a part of the 401 WQC request package and CZMA concurrence evaluations.

The County, in response to the Corps' LUCS request, indicated an application for a "Review Use" permit was required under Section 4.056 (B) of *Clatsop County Land and Water Development and Use Ordinance* (CCLWDUO) July 1, 2005.

Under principles of federal supremacy and sovereign immunity, the Federal government is not subject to state or local regulation. The Corps will not apply for a review permit from the County. However, Congress may, by clear and unambiguous language, waive the federal government's sovereign immunity. The CZMA does not require federal agencies to obtain permits, but it does require that federal agencies carry out their activities "in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs." 16 USC 1456(c) (1) (A). DLCD has recognized that federal agencies are not required to obtain permits unless a federal law, other than the CZMA, requires them to do so; however, federal agencies are required to demonstrate that the proposed activity is consistent to the maximum extent practicable with the enforceable policies underlying the permits. OAR 660-035-0030 (4). Notwithstanding the Corps' federal supremacy, its compatibility/consistency determination includes the following findings to demonstrate consistency with CCLWDUO Section 4.056(B):

Section 4.056: Development and Uses Permitted with Review.
(B) Structural shoreline stabilization.

1. *The priorities for beachfront protection, from highest to lowest, are:*
    a. *Proper maintenance of existing vegetation.*
    b. *Planting of riparian vegetation.*
    c. *Rip-rap.*
    d. *Bulkhead or seawall.*

Consistency Response:

a. and b: The current foredune is heavily vegetated with a European beachgrass dominated community transitioning into a shore pine forest. The accelerated rate of erosion is resulting in a dune failure with an over-steepened bank that is cutting into the neck of Clatsop Spit. This dune erosion not only threatens the existing, well-established vegetation, but also makes additional re-planting on a vertical dune face impossible. Dune vegetation has been insufficient to arrest the accelerated erosion in this area.
c. The Corps is proposing a dynamic revetment feature composed of cobble rather than rip rap. Relative to traditional rip-rap, the cobble berm revetment will provide the necessary dune protection, will reduce the possibility of altering adjacent erosion and deposition patterns, will maintain some shoreline processes, will be more accessible to

recreationalists, and will be similar to natural cobble beaches that occur along the Oregon Coast.

d. Not proposed.

2. *Proposals for rip-rap, bulkheads, or seawalls shall demonstrate that:*
   - *a. The beachfront protective structure is located in an area where the county has identified that development existed on or before January 1, 1977.*
   - *b. The development is being threatened by erosion hazard.*
   - *c. Non-structural means of shoreline stabilization cannot provide adequate erosion protection.*
   - *d. The structure is the minimum necessary to provide for the level of protection that has been identified.*
   - *e. The structure is placed as far landward as is practical, consistent with maintaining existing riparian vegetation.*
   - *f. Potential adverse impacts on adjacent property are minimized.*
   - *g. Existing public access is preserved. The county may require that the shoreline stabilization incorporate steps or other improvements to enhance public access to the beach.*
   - *h. Visual impacts are minimized.*
   - *i. Any rip-rap shall be covered with sand and re-vegetated with beach grass, willow or other appropriate vegetation.*

Consistency Response:

a. See discussions under State Goal 18

b. Currently, the foredune south of the South Jetty is in a condition of advanced deterioration. The initial foredune (1970's) had a crest elevation of 30 and 40 ft NAVD and 50-100 ft crest width. The foredune is now a relatively narrow feature on an otherwise flat, low-elevation area adjacent to a tidal marsh. The high-crested foredune prevents storm-induced overtopping and protects the narrow strip of low-lying land that is separating the ocean from the jetty lagoon called Trestle Bay. Between 2003 and 2007, the concave shoreline area receded more than 40 feet; thus, further reducing the protective ability of the foredune. Presently, the foredune crest has been reduced to less than 25 ft NAVD along much of the project's 1,100 ft reach.

   Without stabilization, the foredune at the root of the South Jetty is expected to continue to erode and recede, resulting in a possible breach through the spit along the South Jetty Root and into Trestle Bay. It is estimated this breach could occur in 8-16 years. Such a breach would cause a secondary flow way to develop from the Columbia River estuary to the ocean, re-directing hydraulic flow from the existing inlet, threatening inlet stability, and disrupting navigation at the MCR. During the late 1920s, the South Jetty root breached extensively, and there was considerable overtopping of Clatsop Spit. A similar breach occurred at Grays Harbor, WA in December 1993. Rapid post-breach intervention was required to prevent loss of navigation function at the inlet and to protect the town of Westport. The post-breach response was costly, very large in scale, and

could have been averted had pre-breach intervention been implemented. This project seeks to avoid the potential for this type of costly breach scenario.

During the late 1920s, the South Jetty root breached extensively, and there was considerable overtopping of Clatsop Spit in the project location. This breaching event modified the configuration of the MCR inlet and adversely affected navigation. The 1928 breach through the South Jetty cross section occurred near the jetty's shore connection. Before the jetty was repaired, a large volume of sediment passed through the breach (from south to north) and deposited in the inlet, changing the inlet's morphology. Much of the sediment in the littoral system immediately south of the jetty was lost through the breach, creating a sand deficit, and narrowing the margin between the ocean and Trestle Bay. Storm surge overtopped the shore and passed into Trestle Bay, threatening the stability of the entire inlet. Tidal circulation through the breach promoted the northward migration of Clatsop Spit, which adversely impacted navigation through the MCR.

c. and f. There is already dense coverage of dunegrass and shore pine vegetation on the dune, but it is insufficient to withstand the wave and wind forcing environment at this location. As the dune scarp continues to erode towards Trestle Bay, the existing vegetation is being undermined. During construction, disturbance to the dune will be minimized, and the site will be re-vegetated post-construction.

d. A dynamic revetment feature of smaller cobble relative to a larger, more static rip-rap structure is proposed in order to provide sufficient protection to the existing foredune. This design element uses the existing dune as buttress before it has eroded away completely. This avoids the need for construction of an additional seawall or other feature. The design of the cobble berm augmentation feature is also less "structural" than more hardened stabilization measures like sea walls or rip-rap revetments.

e. There is no location further landward on which to site the stabilization feature and still protect the existing dune in-place.

f. The cobble berm design and extent minimize the risk of transferring changes in erosion or deposition patterns to adjacent beach and dune areas because the movement of the cobble berm feature itself dissipates rather than transferring or reflecting the erosive energy. The purpose of the project is to avoid erosion of the adjacent jetty root, and to preserve the existing dune function and structure in the vicinity. The interface with the existing stable dune has been designed to avoid undermining it.

g. This project is not proposing any new permanent change to public access. OPRD manages public access in this area. Construction access will be achieved via existing unimproved, "authorized use only" roads. The project will create some temporary restrictions regarding access to the beach in the immediate vicinity of the project, and in the construction staging and access areas. Restrictions will be temporary in nature (approximately 2 months) and limited to a small geographic scope. Relative to the current site conditions (a sheer dune scarp), pedestrian access between the beach and the

back dune area will actually be increased along the length of the berm during seasons when the sand lens is lowest.

h. Visual impacts related to construction activities will be temporary in nature and limited in scope. Additionally, the cobble berm feature will look similar to other cobble berm beaches that have developed naturally along the Oregon Coast. The rounded cobble overlay will be similar to that which would be found in other coastal/fluvial systems. The excavated sands will be placed at the toe of the feature, and all disturbance areas will be re-vegetated and stabilized with appropriate vegetation.

i. Rip rap is not proposed. Cobble will not be vegetated, as this would not be a sustainable feature given the dynamic design. Areas on the dune that are disturbed will be replanted.

Subsequent to its initial response to the Corps and then discussions with DLCD, the County then indicated to the Corps that County would complete its LUCS based on a consistency review with the County Comprehensive Plan including the following plan policies and components of the *Clatsop Plains Community Plan*. Though the project features are limited to federal lands and the Corps will not be seeking permits, the Corps has determined its proposed actions are consistent with the statewide planning goals and local plan policies. The Corps evaluated Statewide Planning Goals 6, 17, and 18 in the preceding discussions. These evaluations also contributed to the consistency determination for the following County policies:

CLATSOP COUNTY COMPREHENSIVE PLAN GOALS AND POLICIES

Goal 6, Policy 13: "*Any development of land, or change in designation of use of land, shall not occur until it is assured that such change or development complies with applicable state and federal standards.*"

The Corps is not proposing development or changes in land use designation at the project site, and is complying with federal and state laws that are protective of natural and cultural resources. The discussion under Statewide Planning Goal 6, above, details this compliance.

Goal 17: See discussion above.

Goal 18: See discussion above.

***Clatsop Plains Community Plan:* Critical Hazards; Wind and Ocean Shoreline Erosion Policies**

2. The Corps has a CWA NPDES 1200 CA permit for stormwater management during construction, and will develop and implement a compliant Erosion and Sediment Control Plan. The Corps has also proposed site restoration via revegetation of dune grasses and shore pine in the staging and disturbance areas. These measures will avoid and control erosion and ensure site stabilization.
3. The Corps is seeking to stabilize the foredune and therefore intends to preserve as much of the existing vegetation as practicable. The Corps has minimized project impacts to the maximum extent practicable, and has and located required disturbance in areas that are least impactful to

wetlands and dune stability. Clearing and grubbing will be sequenced to minimize impacts and reduce the length of project duration. The Corps will restore and re-vegetate the area as described as soon as practicable post-construction.

4. The Corps will ensure successful replanting, but cannot include restrictions on pedestrian traffic, as it does not manage the Park. The Corps anticipates revegetation will return the area to its pre-construction level of stability or better. Trees will be planted along with ground cover such as native beach grass. Stem counts will be conducted prior to shore pine removal and replanting will occur at a 1:5 ratio.
5. As noted, proposed vegetation removal has been minimized to avoid species impacts.
6. Corps engineers specialized in the disciplines of coastal, civil, geotechnical, and hydraulic engineering have conducted site specific investigations to formulate the dynamic revetment and implementation design for the foredune augmentation cobble berm feature. Coordination has also occurred with OPRD and Department of Geology and Mineral Industries (DOGAMI).

B. Selected State Authorities (e.g. those governing removal-fill, water quality, actions in the ocean shore, and fish and wildlife protection)

ORS 274 – Submersible and Submerged Lands: This statute applies to disposal of dredged material below ordinary high water of navigable state waters. The *Revised Final Environmental Assessment for Rehabilitation of the Jetty System at the Mouth of the Columbia River* (otherwise known as the EA) and the Clean Water Act Section 401 and Section 404 (b) (1) evaluations satisfies the substantive federal requirement of this statute. The project component is not expected to extend beyond the elevation of 6.9 NAVD 88 and will not be on State-owned submerged or submersible lands.

ORS 496 – Application, Administration, and Enforcement of Wildlife Laws: The wildlife inventory and impact analysis contained in the EA and the Endangered Species Act Consultations, including the Biological Assessments and Biological Opinion meet the requirements of this statute.

ORS – General Protective Regulations: The EA describes the mechanisms and Best Management Practices used to minimize potential impacts of the South Jetty Foredune Augmentation Project.

ORS 468B – Water Quality: The EA and Clean Water Act (CWA) Sections 401 Water Quality Certification and 404 (b) (1) Evaluation prepared for this action address all water quality evaluations required by this statute.

ORS 196.795-990 – Oregon´s Removal-Fill Law: This requires a permit from the Department of State Lands (DSL) to remove or fill material in waters of the state. The Department of State Lands (Dan Carey) has indicated in an email on 4/13/2010 that DSL will defer to navigational servitude for the major rehabilitation of the jetties, of which this project is a component base condition.

ORS 390.605-390.770 – The Ocean Shore Law: For most non-federal entities, an Ocean Shore Permit from Oregon Parks and Recreation Department (OPRD) is required for work in the shoreline. Under principles of federal supremacy and sovereign immunity, the Federal government is not subject to state or local regulation. For the reasons outlined above in the Clatsop County land use section, and in compliance with 15 CFR 930.39(e) and OAR 660-035-0030(4), the Corps will not obtain a shoreline

permit from OPRD. The Corps will, however, carry out its activities "in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs…" per 15 CFR 930.32 and 15 CFR 930.39. The Corps has evaluated its determination of effects in compliance with 15 CFR 930.33-39, as applicable.

Information requested in the OPRD permit application, *Addendum A – Shoreline Protective Structure* has been provided throughout this consistency determination and in associated environmental compliance documentation. This project complies with OAR 736-020-0005 through 736-020-0030, which provides Beach Construction/Alteration Standards for permit review. These include but are not limited to the following factors:

Justify the location of a project seaward of the line of vegetation:
The placement of the revetment will stabilize the foredune area seaward of the line of vegetation and will minimally impact a portion of the existing dune. However, the staging areas, including those adjacent to the dynamic revetment will be re-vegetated upon completion of the project. There is no other location that will provide adequate protection for the jetty root, and the dynamic revetment will protect existing dune vegetation and shore pine forest.

Protect public use and avoid obstruction of public recreational use and access:
OPRD manages public use and access in this portion of the Park through its lease with the Corps. In this portion of the park Construction of the revetment will temporarily impact some of the recreational use of the dry sand beach in the immediate vicinity of the dynamic revetment and Parking Lot B for up to approximately three to four months. Access will be limited to ensure public safety during construction implementation. However, in the long-term, beach and recreational use near the stabilized dune will not be impacted. Further, the smaller size of the cobble materials relative to a static, rip-rap structure are more pedestrian-friendly for those seeking to access the dune from the beach.

Show that reasonable modifications which would better protect public rights or reduce public costs are not feasible:
OPRD manages the beach and parklands in this area, and the Corps is not proposing any permanent changes to management or operations related to foredune augmentation. As described in the Joint Permit Application (JPA) materials submitted to DEQ and incorporated herein, the purpose of the South Jetty foredune stabilization is to implement a critical stabilization measure that: strengthens the jetty root area before a breach event develops, reduces the risk of foredune breaching, and extends the jetty's functional purpose maintaining deep-draft navigation at the Mouth of the Columbia River (MCR). It is advantageous to stabilize the foredune before it is completely eroded so that the stabilizing treatment can utilize the foredune as a buttress. Further, foredune augmentation is a priority action that is required as a base-condition before a larger suite of repair and rehabilitation actions can be taken on the entire jetty system as a whole, including work on South Jetty proper. This is described in the associated Environmental Assessment.

Without stabilization, the foredune at the root of the South Jetty is expected to continue to erode and recede, resulting in a possible breach through the spit along the South Jetty Root and into Trestle Bay. It is estimated this breach could occur in 8-16 years. Such a breach would cause a secondary flow way to develop from the Columbia River estuary to the ocean, re-directing hydraulic flow from the existing inlet, threatening inlet stability, and disrupting navigation at the MCR. During the late 1920s, the South

Jetty root breached extensively, and there was considerable overtopping of Clatsop Spit. A similar breach occurred at Grays Harbor, WA in December 1993. Rapid post-breach intervention was required to prevent loss of navigation function at the inlet and to protect the town of Westport. The post-breach response was costly, very large in scale, and could have been averted had pre-breach intervention been implemented. This project seeks to avoid the potential for this type of costly breach scenario.

As noted in the JPA, various stabilization design alternatives were considered, but the conditions described above demonstrate why there would likely be a higher public cost in navigational effects if breaching is allowed to occur.

Retain scenic attractions of natural and cultural features:
The project implementation has avoided impacts to the historic trestle and bunker features. No scenic attractions will be impacted by the construction or repair of the jetties. The project site is located on a sandy beach that adjoins the South Jetty, which has a Congressionally authorized length of 6.6miles and extends out approximately 2.5-miles from the Clatsop Spit foredune location into the ocean. The jetty is the predominant feature of the area, and serves as a central focus for recreational uses such as walking, beachcombing, clamming, fishing, water sports, and sightseeing. The proposed dynamic revetment, which will extend up to 1,100 feet off of the South Jetty, will be subordinate in scale to the jetty itself, and therefore will be in keeping with the existing dominant features of the area. Unlike a riprap revetment alternative, the dynamic revetment design criterion for a smaller, rounded cobble overlay also is more similar to cobble berm beaches that occur naturally along the coast. This functional design works relatively more closely with natural shoreline processes.

Retain or restore vegetation seaward of the vegetation line vital to scenic values:
Any vegetation disturbed by construction staging for the dynamic revetment will be replanted upon completion of the project. The project is seeking to stabilize the dune and to avoid and minimize impacts to the dune vegetation and shore pine forest.

Avoid biological impacts.
There will be minimal biological impacts associated with the construction of the revetment. Clam beds in the vicinity are being avoided. The USFWS and NOAA/NMFS have both been consulted per Endangered Species Act (ESA) requirements and have provided their effects calls. The biological assessments are available on the Corps webpage.

Avoid or minimize obstruction of views from adjacent properties:
The revetment will not obstruct any views from adjacent properties and has been designed to be aesthetically similar to other cobble berm beaches that occur naturally along the Oregon Coast.

Avoid hazards to public safety:
The staging area for construction will be fenced and signed to avoid any danger to the public. Upon completion of the construction of the dynamic revetment, signs will be placed indicating that the revetment is for navigational aid and erosion control.

Avoid or minimize ocean erosion or safety problems for neighboring properties.
The placement of the dynamic revetment is specifically to reduce erosion to the adjacent jetty root, and by the nature of its malleable design is not expected to alter or accelerate erosion on adjacent beaches.

IV. Statement of Consistency

The proposed project has been evaluated through the EA, the BAs, CWA Water Quality Findings, and coordination with SHPO, all of which are incorporated herein by reference. Additionally, the project design has avoided and minimized environmental and cultural impacts while preserving recreational access and coastal processes at the foredune augmentation feature. The protection of the South Jetty foredune and root will ensure that the existing dune is maintained and that a breach is avoided through the neck of the Clatsop Spit. This also helps ensure that the Columbia River Federal Navigation Channel remains a safe, navigable commercial and recreational waterway. The proposed action complies with all applicable local, state, and federal laws and regulations.

Based on the above evaluation in conjunction with evaluations to meet ESA, NEPA, and CWA compliance requirements, the Corps has determined that the foredune augmentation/cobble berm dynamic revetment related to protection of the South Jetty root at the Mouth of the Columbia River is consistent with the Clatsop County Comprehensive Plan, applicable provisions of State Goals 2 (Land Use Planning) for goal exceptions, Goal 6 (Air, Water and Land Resources Quality), Goal 17 (Coastal Shorelands), Goal 18 (Beaches and Dunes) and OPRD requirements. The action is, therefore, consistent to the maximum extent practicable with the enforceable policies of the Oregon Coastal Management Program (OCMP).