Section 404(b)(1) Evaluation
Repair of the North and South Jetties at Tillamook Bay
Tillamook County, Oregon

I. Introduction

Section 404 of the Clean Water Act (CWA) of 1977, as amended, requires that all projects involving the discharge of dredged or fill material into waters of the United States be evaluated for water quality and other effects prior to making the discharge. All disposal of dredged or fill materials associated with the north and south jetty repair at Tillamook Bay, to include the revetment, are undertaken by or at the direction of the Corps of Engineers (Corps). Federal regulations, at 33 CFR 336.1, provide that a Section 404 permit will not be issued for such discharges of dredged material by the Corps; however, the Corps shall apply the Section 404(b)(1) guidelines to the project. This evaluation assesses the effects of the placement of fill material, as described below, for the construction of the revetment, capping and routine and critical repairs of the north and south jetty utilizing guidelines established by the U.S. Environmental Protection Agency (USEPA) in conjunction with the Secretary of the Army under the authority of Section 404(b)(1) of the Act.

II. Description of Proposed Action

Proposed Action

With funding available this Fiscal Year (Oct 1 to Sept 30), the Portland District plans to construct the north jetty revetment and will prioritize work to cap the north and south jetty heads and repair the trunks of the north and south jetty, subject to future availability of funding. This proposed alternative addresses the areas of greatest concern in terms of structural stability.

The proposed action is to protect the north jetty root by constructing a revetment which prohibits further erosion of the foredune at that location. Although this is the minimum maintenance option to project the Federal interest, when combined with the capping of the north jetty, it will improve both the structural stability of the entire jetty and increases the life expectancy between future maintenance and repairs. For this reason, constructing only the north jetty revetment is not considered a stand alone alternative.

The revetment along the north jetty root will be 60-foot wide and depending on funding, the minimum length will be between, 450 feet (250 feet along shoreline) and the maximum length will be 600 feet (400 feet along shoreline), these lengths include wrap-arounds on both ends and cobble fill on the north end. The revetment will require approximately 5,000 tons of stones.

The 100-foot caps on the ends of the north and south jetties would leave the jetties 375-foot and 790-foot shorter, respectively, than the authorized lengths. The south jetty will

require a 50-foot long by 50-foot wide pier-type structure made from sheet pile and back-filled with approximately 5,000 cubic yards of material and a dolphin tie-off eastward along the shore. The north side will require a 60-foot long by 50-foot wide pier-type structure made from sheet pile and back filled with approximately 3,500 cubic yards of fill. This north side pier platform is necessary for a land based crawler crane that can reach the off-load pad.

This proposed action includes critical and routine trunk repairs to the south and north jetty. The amount of jetty stone needed for the routine repairs of the south jetty are approximately 8,000 tons and for the critical repair the approximate amount will be 37,000 tons. The south jetty will require a 50-foot long by 50-foot wide off loading structure made from sheet pile and back filled with approximately 5,000 cubic yard of material and a dolphin tie-off eastward along the shore.

The amount of jetty stone needed for the routine repairs of the north jetty are approximately 30,000 tons and for the critical repair the approximate amount will be 78,000 tons. The north side will require a 60-foot long by 50-foot wide off-loading structure made from sheet pile and back-filled with approximately 3,500 cubic yard of fill. The fill material will consist of shot rock (quarry waste). This material will be placed after placement of the sheet pile to minimize turbidity impacts. Upon completion of the project, the material will be removed prior to the removal of the sheet piles to ensure that no excess material is left at the off-loading site. The contractor will be responsible for proper disposal of the excess material in accordance with local, state and federal laws. The north side off-loading structure is necessary for a land based crawler crane that can reach the off-load pad. The dolphins used for the off-loading structure would use natural wood pilings and would be removed at the end of construction.

Purpose and Need

The purpose of the action is to repair the north and south jetty, and to protect the foredune and jetty root of the north jetty. This action is necessary to prevent further deterioration and subsequent loss of the jetty heads and trunks, the north jetty root and the United States Coast Guard (USGS) watchtower. Field measurements in 2003 determined a 384-foot loss to the north jetty and a 666-foot loss to the south jetty. Further analysis based on historical recession rates predict that the north jetty will be 475-feet shorter than its authorized length and the south jetty will be 890-feet shorter than its authorized length by 2006. Continued deterioration of both jetty heads and the north jetty root could destabilize the navigation project at Tillamook.

General Description of Dredged or Fill Material

Depending on the availability of funds, the revetment will be constructed to a minimum length of 250 feet to the maximum length of 400 feet to include the cobble fill and wrap-arounds. Once the revetment is constructed, sand fill from local sand and gravel distributors will be used to fill the area in the front of the revetment. The sand fill

volume for placement in front of the revetment after its construction to the minimum length will be 2,400 (cy) and for the maximum length will be 6,000 cy.

Cobble fill for placement at the north end of the revetment has been calculated to be 730 cy and the size of the cobbles would range from 2" to 8" diameter

Description of the Proposed Discharge Site

Other then the rock placement on the jetty, there will be no material discharged into the ocean from repair of the north and south jetty and construction of the revetment.

III. Alternatives

Due to projected limited funding to repair the entire project, two different capping lengths were estimated, 50 feet and 100 feet. A 100 foot head repair has been standard repair practice in the Portland District and provides for a more reliable longer term fix in the presently increasing wave environment of the Pacific Ocean. History has shown that Portland District's normal O&M practices for our coastal jetties involves, at the minimum, stabilizing the jetty head, or capping. The four alternatives are as follows:

Alternative 1 – Jetty Caps and Revetment

The plan includes 100 foot caps at the ends of the north and south jetties, and a revetment at the root of the north jetty. The 100 foot caps on the ends of the north and south jetties would leave the jetties 375 feet and 790 feet shorter than the authorized lengths.

Alternative 2 – Jetty Caps, Revetment, and Critical Trunk Repairs

This alternative is the same as the proposed action with the exception of routine trunk repairs to both the north and south jetties.

Alternative 3 – Alternative Jetty Lengths, Revetment, and Critical and Routine Trunk Repairs

This alternative is the same as the preferred alternative except for the additions of alternative jetty lengths which includes a 200-foot extension of the north jetty and a 360-foot extension of the south jetty.

Alternative 4 – No Action

The no action alternative was reviewed for this study and was determined to be unacceptable due to the danger and risk of jeopardizing the integrity of both jetties. To allow the jetties to continue to deteriorate will eventually lead to an increase in shoaling at the channel entrance. As more of the jetties deteriorate, waves will move further into the navigation channel increasing boating hazards and further de-stabilizing the inner portion of the jetties.

IV. Factual Determinations (40 CFR § 230.11)

Physical Substrate Determinations

The existing sand gradation at the revetment site ranges from 0.10 mm to 0.33 mm with a D50 around 0.20 mm. The Corps is recommending that the sand to be placed be somewhat coarser than this gradation to provide added stability to the sandfill in this high energy area. The recommend sand gradation will be 0.20mm to 0.70 mm (D50 = 0.50 to 0.60mm).

Water Circulation, Fluctuation and Salinity Determinations

Water quality characteristics such as salinity, water chemistry, clarity, color, odor, taste, dissolved gas levels and nutrients are not likely to be affected. Hydraulic features such as current patterns, water circulation, velocity and salinity would remain unchanged.

Suspended Particulate/Turbidity Determinations

An increase in suspended sediments in the water column is expected during the construction period of the jetties; however, this impact is expected to stay within acceptable levels for fish and wildlife species of concern. Short-term turbidity is expected to occur with the placement of the temporary dolphins. Long-term adverse impacts are not anticipated.

Turbidity is not expected to occur with the placement of jetty stone, cobbles or sand for the repair of the jetties or the revetment.

Contaminant Determinations

For the material that will be placed in front of the revetment, the Corps will ensure that the material to be placed is free of contaminates by requesting contaminant analysis documentation from the company that provides the material. The quarry material will be clean quarry stone and will be certified as such by the company that provides the material.

Aquatic Ecosystems and Organism Determination

Overall, the proposed action is not expected to have any long-term impacts on the structure or functions of the aquatic ecosystem. The impacts to anadromous fish would be minimized by scheduling work to avoid primary migration periods. There will be no impact to the benthic and aquatic communities as a result of the placement of sand in front of the revetment.

Proposed Disposal Site Determinations

Placement of sand fill in the surf zone immediately in front of the revetment after construction will not cause any significant environmental effects. The proposed placement of dredged material would be in compliance with the USEPA and the State of Oregon water quality standards.

Fill material would not introduce toxic substances into surrounding waters or violate the primary drinking water standards of the Safe Drinking Water Act (42 U.S.C. § et seq).

Potential Effects on Human Use Characteristics

Municipal and Private Water Supplies: There are no municipal or private water supply intakes in the vicinity of the material placement site.

Recreational and Commercial Fisheries: Attempts will be made to notify the local recreational fisheries as to when the work on the jetties will be conducted. Coordination of the placement of the rubble stone on the jetties would be scheduled to avoid conflict with the recreational fisheries that operate on Tillamook Bay.

Water-related recreation: No impacts to water-related recreation are anticipated.

Aesthetics: The open coastal environment where the revetment is to be placed may have visual impacts due to the height and length of the revetment. The impacts are unavoidable in order to preserve the integrity and stability of the north jetty.

Parks, etc: Impacts to Barview State Park will involve the temporary placement of rubble stone and a temporary staging area for construction equipment. Any scraping or placement of material will be removed and the site restored to its original state.

The impact could potentially cause several campsites to close. Accommodations can be made for public access to the beach during the revetment construction by several means. One possibility for the public to access to the beach during revetment construction is by an existing gravel road. This road is in rather poor condition, and intersects the main road to the jetty, landward of the campsites. If this path were used for the public to access the beach, then one more campsite would need to be closed. However, the closure would only be temporary.

Determination of Cumulative Effects on the Aquatic Ecosystem

The proposed action is not expected to cause any significant cumulative effects on the aquatic ecosystem given the low productivity levels of aquatic organisms in the repair and revetment area.

Determination of Secondary Effects on the Aquatic Ecosystem

No secondary effects on the aquatic ecosystem are anticipated.

Coordination

The proposed work has been coordinated with the following agencies:

Federal
U.S. Environmental Protection Agency
U.S. Fish and Wildlife
National Oceanic and Atmospheric Administration
U.S. Coast Guard

State of Oregon
Oregon Department of Fish and Wildlife
Oregon Department of State Lands
Oregon Department of Environmental Quality
Oregon Department of Land Conservation and Development
Oregon State Department of Parks and Recreation

County
Tillamook County

Other
Port of Garibaldi

V. Findings of Compliance (40 CFR § 230.12)

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. Alternatives: The no action alternative was considered and subsequently rejected. Breaching of the jetty would cause severe ecological and economic damage to the region.

c. Water Quality Standards [40 CFR § 230.10(b)(1)]. The proposed action is in compliance with applicable State of Oregon water quality standards.

d. Toxic Effluent Standards [40 CFR § 230.10(b)(2)]. The proposed action would not violate the toxic effluent standards of Section 307 of the Clean Water Act.

e. Endangered Species [40 CFR § 230.10(b)(3)]. The use of these sites would not harm any endangered species or their habitat designated as critical, endangered, or threatened according to the Endangered Species Act of 1973.

f. Marine Sanctuaries [40 CFR § 230.10(b)(4)]. No marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972 will be affected by the proposed action.

g. No Significant Degradation [40 CFR § 230.10(c)].

(1) The proposed action would not result in significant adverse effects on human health or welfare, including municipal water supplies, plankton, fish, shellfish, or wildlife.

(2) Significant adverse effects on life stages of aquatic life and other wildlife dependent on the aquatic ecosystem, on ecosystem diversity, productivity, or stability, or on recreational, esthetic, or economic values would not occur.

(3) No significant adverse effects on aquatic ecosystem diversity, productivity and stability are expected due to avoidance, impact minimization, mitigation of impacts, and implementation of best management practices, monitoring actions, and research actions to assess project-related impacts throughout the project life.

(4) No significant adverse effects of the fill material are expected on recreational, aesthetic and economic values.

h. Minimization of Impacts [40 CFR § 230.10(d)]. Appropriate actions to minimize potential adverse impacts would be specified in the construction contract.

VI. Conclusions

On the basis of the factual determinations and findings made above, I conclude that the proposed fill materials comply with the Guidelines at 40 CFR Part 230 and with the requirements of Executive Order 11,990 (Protection of Wetlands).

I further conclude, based on the factual determinations and findings made above that the proposed fill material associated with this project is in the overall public interest.

Date: _____

Charles S. Markham
Lieutenant Colonel, EN
Acting Commander