

APPENDIX C

Section 404 (b) (1) Evaluation

SECTION 404(b)(1) EVALUATION
COLUMBIA SLOUGH SECTION 1135
HABITAT RESTORATION
MULTNOMAH COUNTY, OREGON

I. Introduction

Section 404 of the Clean Water Act of 1977 requires that all civil works projects involving the discharge of dredged or fill material into waters of the United States be evaluated for water quality effects prior to making the discharge. This evaluation assesses the affects of the fill material placed into the Columbia Slough, tributary to the Willamette River.

II. Description of the Proposed Activity

The proposed action is to provide ecosystem restoration in Columbia Slough by improving water quality and creating wetlands. This action involves dredging 44,900 cubic yards (CY) of sediments from the slough between rivermiles (RM) 8.5 and 16, creating 9 acres of wetland benches within the slough, and creating a total of 1.0 acre of new riparian scrub-shrub habitat, 11.3 acres of emergent wetland habitat, and 1.7 acres of aquatic bottom habitat; restoring 18 acres of adjacent wetland, and replacing five culverts in Buffalo Slough and Whitaker Slough to facilitate water flow, lower water levels, and create 19.7 acres of emergent wetland habitat (Figures 3a and 3b) Most of the excavated material would be used to create the wetland benches.

The physical environment of present-day Columbia Slough between RM 8.5 - 16 would be altered. The excavation of about 44,900 cubic yards (cy) of sediment would be excavated, deepening the channel from elevation 6'CRD (Columbia River Datum) down to elevation 3' CRD in the upper slough (upstream of the mid-dike levee), and from elevation 5' CRD down to elevation 2'CRD in the middle slough. Most of this material would be placed on the bank side of the channel to form wetland benches. The material would be dredged in two lifts, with a barge-mounted bucket dredge skimming off the top 12"-18", placing it on the side of the channel. Material would then be dredged from a lower level and carefully placed on top of this material. These benches would be about 20 feet wide, with varying lengths on each side of the slough channel. The estimated total surface coverage is about 9 acres. Deepening and narrowing the channel would accelerate water flow, reducing stagnation. During the excavation and placement of material, short-term turbidity is expected to occur. Water management techniques would be employed to temporarily stop or reduce flow until the sediments settled out.

Sediments within the slough will be handled so that "top" material dredged from undisturbed channel will be on the bottom of the piled material creating the bench. The excavation will be done with shallow cuts to get the top material on the bottom of the disposal site. Material will be placed rather than dumped. Placing excavated material top down would reduce the probability that sediments containing DDT would enter the water

system. Placement of material on top of existing sediments with DDT also keeps those sediments from contributing DDT to the system in the future. DDT in the sediments to be excavated does not exceed screening levels; however, it is beneficial to cover these sediments so that any DDT is less likely to become available in the ecosystem.

An estimated 3,600 CY of excess dredged material would be placed in 4-inch to 6-inch layers on the landward side of the main Columbia River levee along NE Marine Drive between NE 42nd Street and the I-205 bridge. The excess material will not have any direct contact or possibilities of running back into a waterway without first draining through several bio-swale systems, in order to filter out any sediments.

Replacement of four corrugated metal pipe (CMP) culverts with reinforced concrete pipe culverts on Buffalo Slough at Broadmoor and on Whitaker Slough at Colwood Golf Courses, together with installation of a 48" HDPE (high-density polyethylene) Spirolite culvert beneath NE 33rd Avenue, would involve excavation of 785 cy of material and placement of about 865 cy of material. About 185 cy of Class 100 rip rap per culvert, covering about 200 sq.ft. of surface area per culvert (1,000 sq. ft. total) would be placed to prevent erosion. Temporary cofferdams may be necessary during construction.

III. Description of the Discharge Site

Columbia Slough is a tributary to the Willamette River near its confluence with the Columbia River. The fill location corresponds to approximately RM 108.5 to RM 116 of the Columbia River. Columbia Slough is about 18 miles long and is located just south of and parallel to the Columbia River in a highly developed industrial and residential area of north Portland. Levees and embankments constructed in the early 1900's cut off flushing from the Columbia River and divided the slough into two parts. The slough does not meet Oregon Department of Environmental Quality requirements, suffering from stagnation, accumulation of industrial pollutants and toxic chemicals. Sediments are predominantly sand in the lower portions, changing to silt further upstream. Aquatic life consists predominantly of oligochaete worms in the benthos, some aquatic invertebrates, and various fish. Game fish include crappie, sunfishes, and white sturgeon. Juvenile chinook salmon are occasionally found during late spring high water conditions on the Willamette River. Non-game species include sucker, carp, stickle back, pea mouth and cottids.

IV. Factual Determinations

a. Physical Substrate Determinations

The substrate of the fill site is primarily silt and sand.

b. Water Circulation, Fluctuation, and Salinity Determinations

The fill action would have little or no effect on water fluctuation or salinity. With the deepening and narrowing of the slough and replacement of culverts, circulation should improve.

c. Suspended Particulate/Turbidity Determination

Placement of 44,900 CY of dredged material would result in minor, short-term turbidity in Columbia Slough. The discharge itself is expected to meet State water quality standards; however, minor amounts of bottom sediments in the slough may be disturbed by the increased flow until the new regime stabilizes.

d. Contaminant Determinations

Sediments in the middle portion of the slough are primarily silts and silty sand. Analysis from 1999 sampling (see Appendix A) indicates that sediments are composed of more than 20 percent fines, with some samples exceeding 5 percent volatile solids.

Historical data from the main Slough were reviewed to evaluate potential sediment issues related to in-water disposal (side casting) of Slough sediments. Most of the surface samples were below the screening levels (SLs) of the regional Dredge Material Evaluation Framework for the Lower Columbia River Management Area (DMEF). Additional sampling was conducted by the Corps of Engineers to characterize the sediment of portions of the middle and upper Columbia Slough mainstem (Appendix A). The chemical testing indicated that the only contaminant exceeding the DMEF screening levels was DDT. DDT levels were highest upstream of the 'Four Corners' area near MCDD Pump Station #4. Source of the DDT is probably historic spraying for mosquito control as well as agricultural use. Subsequent biological testing indicated no risk for bioaccumulation in wildlife or humans. The wetland benches are proposed to end at NE 158th, downstream of this area.

Sediments in Columbia Slough downstream of the proposed action may contain contaminants. As these sediments are disturbed by and re-enter the water column, there could be a temporary increase in water-borne contaminants. These would be expected to re-settle within a short period of time.

e. Aquatic Ecosystem and Organism Determinations

Adverse impacts to the structure and function of the aquatic ecosystem and organisms would be minor and short term in nature. In-water work would be scheduled to comply with Oregon Department of Fish and Wildlife preferred work period, which is June 15 to September 15, or as otherwise agreed to. Provision of restored wetland, wetland benches and cooler, faster-flowing water would improve the aquatic ecosystem, including providing increased quantity and quality of available habitat for native turtles.

f. Proposed Disposal Site Determinations

Placement of dredged material in Columbia Slough would not violate Environmental Protection Agency or State water quality standards, except for a short duration during placement. Placement of sediments would not introduce new substances into surrounding waters or violate the primary drinking water standards of the Safe Drinking Water Act (42 USC 300 et seq.).

g. Determination of Cumulative effects on the Aquatic Ecosystem

The proposed action is not expected to have significant adverse cumulative effects on the aquatic ecosystem. Provision of restored wetland, wetland benches and cooler, faster-flowing water would improve the aquatic ecosystem.

h. Determination of Secondary Effects on the Aquatic Ecosystem

The proposed work would not cause any lasting negative secondary effects on the aquatic ecosystem. There could be some minor disturbance of existing sediments in the slough during placement of the dredged material and during flow events. Sediments that re-enter the water column are expected to settle out in the immediate area.

V. Coordination

The environmental restoration report/environmental assessment describing the proposed action is the main report to which this Section 404(b)(1) is attached as Appendix C, and is under concurrent review. The proposed action was coordinated with appropriate Federal, State, and local resource agencies, organizations, and interested members of the public through issuance of Public Notice. State water quality certification is requested concurrent with review of the report/environmental assessment.

VI. Findings of Compliance or Non-Compliance with the Restrictions on Discharge

- a. No significant adaptations of the guidelines were made relative to this evaluation.
- b. The "no action" alternative was considered and rejected because it would not be responsive to wetland restoration needs in the area.
- c. The proposed action is in compliance with applicable State water quality standards.
- d. The proposed action would not violate the toxic effluent standards of Section 307 of the Clean Water Act.
- e. The proposed action would have no effect on threatened or endangered species or their critical habitat. The Corps has determined that the project would have no effect

on bald eagles, or listed salmonids. A biological assessment concluding no effect was submitted to the U.S. Fish and Wildlife Service. The proposed action would improve quantity and quality of available habitat for the western pond turtle and the painted turtle, listed as Sensitive Critical in Oregon.

f. The fill would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, and wildlife. Significant adverse effects on aquatic ecosystem diversity, productivity, and stability, and recreational, esthetic, and economic values would not occur.

g. Appropriate steps to minimize potential adverse impacts would be specified in the construction contract.

With the inclusion of appropriate and practical conditions to minimize pollution and adverse effects to the aquatic ecosystem, the proposed action is specified as complying with the requirements of the Section 404(b)(1) guidelines.

Date: _____

RANDALL J. BUTLER
Colonel, EN
Commanding