



US Army Corps
of Engineers
Portland District

Columbia Slough Section 1135 Restoration Project

Ecosystem Restoration Report and Environmental Assessment



April 2001

EXECUTIVE SUMMARY

S.1 AUTHORITY AND JURISDICTION

This Ecosystem Restoration Report and environmental assessment were prepared pursuant to Section 1135 of the Water Resources Development Act of 1986 (Public Law 99-662), as amended. Section 1135, P.L. 99-662, authorizes the Secretary of the Army to modify the structure and operation of water resource projects to improve the quality of the environment in the public interest. The report is in accordance with EC 1105-2-214, Project Modifications for Improvement of the Environment and Aquatic Ecosystem Restoration (dated November 1997).

The first levees were constructed by local residents primarily from 1919 until 1921. The Corps of Engineers reconstructed 53,000 feet and revetted 4,000 feet of levees along the Columbia River in these areas (now incorporated as Peninsula Drainage Districts No. 1 and No. 2, Multnomah County Drainage District No. 1 (MCDD #1), and Sandy Drainage Improvement District) between 1939 and 1941. Additional improvements and modifications were made in 1949 at MCDD #1, pump station No. 1 (near Peninsula Canal), and also restored the levee and the main pumping plant following the railroad embankment failure caused by the 1948 flood. The Corps' levee improvements also included the blockage of the locally constructed Peninsula Drainage Canal. Additional Corps work was performed between 1956 and 1961, raising the effective height of the levee by about one foot and adding a second pump station (MCDD #1, pump station #4) near 174th Avenue to evacuate flood waters from the upper end of the slough. At approximately the same time, local interests constructed a cross-levee at 142nd Avenue and added other interior drainage improvements.

The purpose of this proposed project is to restore aquatic and riparian habitat along nearly 7 miles of the middle and upper slough segments, between the two pump stations. The project will not negatively impact the original flood control project.

S.2 PROJECT BACKGROUND

The Columbia Slough represents a portion of the historic flood plain of the Columbia River extending about 20 miles eastward from the Willamette River to the Sandy River. In its natural state, the Columbia River seasonally inundated this area. A network of lakes, waterways, and wetlands spread over the entire area. It was thickly forested along shorelines and low areas, and was also made up of wetland prairie and oak savannah, bordered by riparian forest. It supported vast populations of waterfowl and other birds, elk, deer, river otter, and other smaller mammals. In the 150 years since the first settlers began to adapt the flood plain to their own uses, the area has been transformed from a natural system of lakes, sloughs, and wetlands into a highly managed water system of levees and pumps to provide drainage and flood damage reduction. Despite its urbanized nature, Columbia Slough is viewed as a valuable open space and natural resource to the Portland metropolitan area.

S.3 PROPOSED PLAN

The purpose of the proposed plan is to improve water quality and create and restore wetlands along a segment of Columbia Slough. The proposed project will consist of three main components: (1) creation of wetland benches and a meandering channel by dredging the Columbia Slough between MCDD Pump Station No. 1 (MCDD #1) and NE 158th Avenue to a designed depth, then placing the material along opposite sides of the channel to create wetland benches and a meandering low water channel; (2) replacing three culverts in Buffalo Slough and two culverts in Whitaker Slough; and (3) constructing a wetland marsh covering nine acres at Galitzski Flats near 162nd Avenue, and restoring nine acres of adjacent riparian woodland habitat at Galitzski Springs by removing invasive species and planting native species.

Little emergent marsh habitat is available along the main slough, primarily due to the steep banks and narrow channel along most of the project area. Creation of wetland benches would involve dredging Columbia Slough from MCDD #1 to NE 158th Avenue to a designed depth and placing the material along the edges of the channel to create wetland benches and a meandering channel during low water conditions. The benches would be planted to provide emergent wetland and riparian scrub-shrub wetland vegetation.

Undersized, blocked, deteriorated, and/or high invert elevation culverts are restricting flow in Buffalo Slough and Whitaker Slough. These flow restrictions increase hydraulic retention time and raise water surface elevations. The stagnant water provides favorable conditions for high water temperatures and severe algal blooms, leading to poor water quality and aesthetics. Culverts will be replaced to decrease water residence time in the slough to improve water quality conditions.

The 19.1-acre Galitzski Flats / Springs site, located east of NE 162nd Avenue between Airport Way to the north and the Union-Pacific Railroad right-of-way to the south, consists of a 9.4-acre low-lying field (Galitzski Flats) dominated by reed canary grass and a 9.7-acre heavily vegetated sideslope (Galitzki Springs) incised by several small drainages associated with perennial springs. Galitzski Flats was originally a permanent open water body (Duck Lake) that was drained in the early 1920s. Restoration would focus on re-creating wetland and open-water habitat in the Galitzki Flats, and increasing forest cover, improving age-distribution of trees, and snag recruitment in Galitzki Springs.

The estimated project construction costs are \$3,685,000 (October 2000 price levels and conditions). Plans and specifications are estimated to cost \$262,000, for a total project cost of \$3,947,000. Fully funded implementation costs (primary construction extending from summer 2001 through summer 2004) are estimated at \$4,348,000.

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