



April 2, 2021

**RE: 61<sup>st</sup> PI W Culvert Improvement Project - City of Mukilteo Permit Applications**

**Project Narrative – (expanded)**

The City of Mukilteo Public Works Department proposes to replace a 54-foot long, 24-inch diameter multi-sloped corrugated metal pipe culvert (a complete fish passage barrier), with a new 40-foot long, 8-foot wide, 6.8-foot tall box culvert. The existing culvert is located 650 feet upstream from the creek's outlet to Puget Sound. The applicant would reposition the culvert south of its original location, recreate 325 linear feet of stream channel (75 feet upstream and 250 feet downstream), and raise the existing road a maximum of 2 feet to accommodate the new culvert's size, the site's steep topography, and an existing 8-inch diameter sanitary sewer line running along the roadway under the existing culvert.

The existing culvert and portion of road directly over the culvert would be removed. A foundation for the new box culvert would be installed and the new concrete culvert placed on the foundation. Gabion wingwalls would be installed to reinforce the culvert ends and to support the raised roadway. The road would be rebuilt and paved, and traffic barriers on the downstream and upstream sides of the culvert would be installed. Concrete gutters and vegetated roadway ditches would be built along the roadways edges to manage roadway runoff. The work would be completed with an excavator, loader, paver, pin pile setter, dump trucks, and hand and power tools.

Areas of the stream bank and bed within 75 feet upstream and 250 feet downstream of the roadway would be stripped of their deleterious material, and imported streambed fill would be placed such that these portions of the stream are regraded to restore a historical stream channel grade and meandering alignment. The upstream reach would be graded to approximately 6%, the culvert to 7%, and the downstream reach to approximately 11% grade.

The streambed would be lined with original and locally sources streambed materials to a two-foot minimum and five-foot maximum depth. Boulders would be placed at the new culvert's inlet and outlet to control displacement of the streambed. Improvements would be matched to existing stream conditions on the upstream and downstream ends of the project area.

Upland areas would be improved with a mix of topsoil and streambed cobbles, as well as a coir mat. Plants would be installed in three zones: areas directly adjacent to the stream would be planted with willows, twinberry, and dogwood shrubs; areas farther from the stream would be planted with red alder, Douglas fir, western red cedar, salmonberry, and snowberry; sloped areas directly upstream of the road would be hydroseeded with grass and clover species.

All work would occur during the in-water work window when the stream is dry. The Corps-approved in-water work window is July 16 through February 15.