The Chuckanut Estuary occupies the north end of Chuckanut Bay, a large bay connected to Bellingham Bay in northern Puget Sound. The estuary contains biologically productive mudflats, sand and gravel beaches, and salt marshes along its shoreline. A railroad track built on a rock berm runs across the outer edge of the bay inlet, severely restricting tidal exchange between the estuary and the bay. The proposed restoration would remove some or all of the railroad berm to improve tidal flows and other nearshore processes that sustain the estuary. In addition, key portions of roads, overwater structures, and nearshore fill would be removed near the mouth of Chuckanut Creek to reconnect the salt marsh to the estuary.

Processes Restored

- Natural formation of tidal channels in estuaries.
- Unrestricted movement of saltwater through tidal channels in estuaries.
- Accumulation and retention of organic material from plants and aquatic animals.
- Unrestricted movement and migration of fish and wildlife.
- Natural exposure to wind and wave action.

Conditions Improved

- Re-established historic tidal flat habitats that are important foraging and resting areas for large flocks of shorebirds, such as Dunlin, as well as other marine birds like Great Blue Heron.
- Re-established intertidal and shallow subtidal areas to encourage the growth of kelp and eelgrass, increasing nearshore productivity for fish, birds and other marine species.
- Increased area, length, and complexity of shoreline.
- Improved resiliency of the shoreline to respond to changes in the environment such as rising sea levels and increasing frequency of storm events.
Partial restoration would increase the opening in the railroad from 210 ft to 500 ft by removing a portion of the berm and installing a longer bridge. Although this would double the size of the existing opening, tidal exchange with the bay would remain slightly restricted. The partial alternative would not restore the estuary connection to the salt marsh near Chuckanut Creek and no additional stressors would be removed.

The full restoration alternative would aim for complete removal of tidal barriers by replacing the existing railroad berm with a bridge that would span the entire width of the estuary. This would increase wave energy and restore historical circulation patterns in the estuary. Removing the berm also uncovers the intertidal area that is currently covered by the railroad berm. The full alternative would remove a gravel parking area at the northeastern end of the estuary to restore connection of a salt marsh adjacent to the mouth of Chuckanut Creek. Additional stressors at the mouth would also be removed including nearshore fill, docks, and associated in-water pilings.