



Project Description for Eastsound Sewer and Water District WWTP Expansion

The Eastsound Sewer and Water District (District) Wastewater Treatment Plant (WWTP) currently serves 1090 ERUs (residential equivalents). The wastewater flow to the WWTP is primarily domestic and commercial sewage from residential areas within Eastsound. There are no significant sources of industrial wastewater. The plant treats water to a secondary treatment level, then disinfects the effluent with chlorine prior to discharge into President Channel, Strait of Georgia.

In recent years, the District has experienced increased difficulty with plant operations. Rising BOD₅ effluent, filamentous growth causing poor settling, and managing effluent pH levels are the primary challenges. The plant also has aging equipment in need of inspection. The two treatment cells have not been inspected or properly maintained since 1997 due to the inability to take them offline, as influent flows are greater than the capacity of a single treatment cell. The second treatment cell incorporates the chlorine contact basin within its footprint, thereby reducing the actual treatment capacity of the cell. The plant does not have a digester and thus wastes directly from its clarifier to aging dewatering equipment that needs to be upgraded. A digester is needed to allow the plant to concentrate their WAS and thus dewater more efficiently. Wastewater average daily flow is projected to increase at a growth rate of 3.03%, which is equivalent to the ERU growth rate of the District. Based on the growth rate, the flow rate would reach 100% of the permit limit (0.16 MGD) by year 2029. However, the plant is bumping up against the peak month BOD₅ limit of 234 lbs/day this year.

Proposed plant upgrades include a new 4 stage Bardenpho activated sludge treatment cell with clarifier, a flow splitter to equally divide flows between the three treatment cells, a dedicated chlorine contact basin for redundancy, a digester, new dewatering equipment for redundancy, and aeration system/instrumentation upgrades to improve nutrient removal rates.