

Primary Sedimentation Basins Project Budd Inlet Treatment Plant

The primary sedimentation basins are the oldest part of the Budd Inlet Treatment Plant – built over 60 years ago. A major capital improvement project is underway to upgrade and expand these basins. The construction is expected to cost approximately \$38 million and take two years to complete.

Project Description: This project involves the construction of two new primary sedimentation basins. Odor control facilities, piping, and chemical and electrical control systems are also needed to support the basins.

The project will be built on the existing 14-acre Budd Inlet Treatment Plant site and an adjacent 1.74-acre parcel that LOTT purchased from the Port of Olympia. The project area is located next to the East Bay district in Olympia, on the west side of Jefferson Street NE between Marine Drive and Thurston/Olympia Avenue NE.

Because of the proximity to neighboring businesses, residential areas, and the new Hands On Children’s Museum, the facilities were designed with attractive frontage along Jefferson Street. The new sedimentation basins will be constructed at ground level and enclosed in a building to capture and treat odors. New odor control facilities will be constructed as part of the project. Supporting equipment will be surrounded by walls and canopy structures to screen them from view. The facility will be secured to prevent unintended entry.



The engineering firm HDR, Inc. began design of this project in 2008. Since then, HDR has worked closely with LOTT staff in the development of the design. In 2009, LOTT selected Mortenson Construction to serve as General Contractor/Construction Manager and provide pre-construction services. As part of those services, they conducted a value analysis of the design, helping LOTT to identify cost-saving opportunities that reduced the estimated construction cost by over 15%.

Project Need: The primary sedimentation basins are the first stage of treatment after initial screening of wastewater. They consist of large, concrete channels where primary treatment occurs through a settling process. Solids in the wastewater float to the surface or sink to the bottom, leaving cleaner water in between, which is pumped to the next stage of treatment.



Portions of the existing basins were constructed in the late 1940s and early 1950s. While the structural integrity of the basins remains sound, they do not meet current earthquake standards. The existing basins create a dangerous bottleneck in the “flow through” capacity of the plant. If they were to fail, wastewater would not be able to move through the plant, and sewage would back up in downtown Olympia. Additionally during some high flow events, the basins cannot hold all the incoming flow and treatment performance is compromised. This can lead to the bypass of wastewater flows that are not fully treated into Budd Inlet. Electrical panels located in the existing primaries building can also be flooded during high flow events, creating a safety risk.

The Primary Sedimentation Basins project is the most urgently needed capital improvement project at the Budd Inlet Treatment Plant. While it was delayed once, further delay creates the risk of catastrophic plant failure. Delay would also cost more in the long run, as construction and financing rates are currently at historic lows. This project will eliminate an electrical safety risk, remove the bottleneck currently limiting hydraulic capacity, and provide for improved treatment during high flow events. These improvements are needed to sustain existing treatment capacity, although they will not expand the overall treatment capacity of the plant beyond current permit limits. Ultimately, these improvements will help to maintain permit compliance, and meet LOTT's mission of protecting public health and the environment.



Construction Activities: Construction will require significant excavation, up to 25 feet deep, and several extended periods of pile driving to install the new basins and related infrastructure. Noise and increased truck traffic related to construction activity is expected. Environmental cleanup will occur as part of the project, under a Voluntary Cleanup Work Plan approved by the Washington State Department of Ecology. Soil and groundwater testing will be conducted throughout the construction activity to ensure proper removal of contamination. The Primary Sedimentation Basins project will include several separate bids. Construction began in October 2011 and will be completed in approximately two years.

Cost: The construction cost of the Primary Sedimentation Basins project is estimated at \$38 million. Partial funding for the project was received through the Washington State Department of Ecology Water Pollution Control Revolving Fund. With design costs, land acquisition, cleanup costs and other expenses, the total project costs will most likely exceed \$50 million. It is costly because of the complexity of constructing a large-scale project within the footprint of a fully-operational wastewater treatment plant. The plant must continue to operate 24 hours a day, even during construction. Construction must occur in a small area riddled with existing infrastructure, including piping and electrical conduit located deep underground.

Other Improvement Projects: Approximately \$62 million worth of improvements at the Budd Inlet Treatment Plant are scheduled for construction by 2018, including this Primary Sedimentation Basins project. These projects were identified in the Budd Inlet Treatment Plant Master Plan as necessary to sustain the life of the plant and support LOTT's mission. Our local communities depend on the Budd Inlet Treatment Plant to serve as the core of their regional wastewater system.

Investing in these major capital improvements projects is essential to keep the plant working properly. LOTT actively manages a Capital Improvements Plan (CIP) that looks ahead to utility needs through the year 2053. The CIP is reviewed and adjusted each year to reflect changes in project needs. Other projects planned at the treatment plant include process control improvements, expansion of reclaimed water production, odor control, and electrical substation improvements.



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