



THE LOTT WASTEWATER ALLIANCE BUDD INLET CLASS A RECLAIMED WATER FACILITY

In 1998, LOTT's four government partners chose reclaimed water as the core of their long-range Wastewater Resource Management Plan because of strong public desires to begin treating wastewater as a resource. For their first reclaimed water project, LOTT chose to produce Class A reclaimed water by upgrading a portion of their existing Budd Inlet wastewater treatment facility. The LOTT Wastewater Alliance serves the communities of Lacey, Olympia, Tumwater, and the urban area of north Thurston County, Washington. The treatment facility is located in the downtown area of Olympia, the state capital, and discharges effluent to the southernmost end of Puget Sound. LOTT completed construction of the Class A reclaimed water upgrade in 2004. The first full distribution and use of the water is expected to occur during the 2005 irrigation season.

Quote from LOTT plan: "Treasure LOTT's treated wastewater as a valuable, long-term resource to be cleaned and restored, reused, then ultimately returned to the environment."

The picture, right, shows a night view of the small footprint of the LOTT Class A reclaimed water facility at the Budd Inlet plant.



What was involved in planning?

LOTT's Budd Inlet Plant treats and discharges an average of 10 to 12 million gallons per day (mgd). Initially, up to 1.5 mgd will receive additional treatment to meet Class A reclaimed water. Because the site is located in downtown Olympia, land constraints required the facility to be compact. LOTT purchased some additional land assuring that the facility can expand to 5.0 mgd to meet future demands.

The Budd Inlet Reclaimed Water Facility meets three key purposes:

- Discharge of fewer pollutants into Puget Sound estuary.
- Makes reclaimed water available for use in downtown Olympia.
- Provides high profile public education and acceptance of reclaimed water use.

How does LOTT achieve Class A water treatment?

Wastewater going through the Budd Inlet Plant receives advanced secondary treatment, including nitrogen removal and ultraviolet disinfection before the effluent is discharged to Puget Sound. The Class A reclamation process begins by diverting this effluent for advanced treatment. LOTT adds chlorine (sodium hypochlorite) solution for additional disinfection, coagulating chemicals to precipitate additional contaminants from the water, and a backwashing counter-current sand filter to remove precipitated particles. LOTT disinfects the water again with sodium hypochlorite solution (bleach) for additional safety and to maintain a chlorine residual throughout the distribution piping. Equipment provides continuous monitoring of flow, turbidity, and chlorine residual to assure that only reclaimed water meeting the standard is sent to customers.

Storage for approximately 140,000 gallons of reclaimed water is available on-site. Water not used or stored will be routed to the existing LOTT outfall and discharged into Budd Inlet.



How does LOTT use the reclaimed water?

The City of Olympia will distribute reclaimed water from the Budd Inlet Plant. Potential uses include:

- Irrigation at the State’s Heritage Park, Marathon Park and, eventually, the State Capitol Campus.
- Irrigation at city parks in the downtown Olympia area.
- Irrigation, equipment wash down, boat wash down, dust suppression, and a constructed pond at the Port of Olympia.
- Irrigation, pump seals, cleaning and toilet flushing at LOTT’s Budd Inlet Treatment Plant
- Toilet flushing and cleaning of the pump house and wet well at LOTT’s Capitol Lake Pump Station.

Reclaimed water hydrant at LOTT facility

How much does this cost?

The capital cost for construction of the facility was \$2.8 million. Operating costs are estimated at \$127,000, including labor and benefits, chemicals, power, and miscellaneous supplies. Below lists how LOTT repays their capital cost debt and the allocation of their residential rate revenue.

Table 1: Residential Rates		
<i>Fee</i>	<i>Cost</i>	<i>Repay Project Capital Cost</i>
Residential connection fee	\$3,641 (20 yr avg)	\$327.69
Residential sewer rate	\$25.50	\$23.21
Table 2: Utility Costs		
<i>Fund</i>	<i>Amount</i>	
LOTT Operation and Maintenance	\$9.92	
New Capital and Debt Service	\$7.89	
Wages and Benefits	\$5.03	
Debt Service of 1994 Nitrogen Removal Upgrade	\$4.89	
LOTT Alliance Administration	\$1.55	
LOTT Equipment Replacement	\$1.25	

Conveyance and distribution systems costs through downtown Olympia are high. In conjunction with a sewer force main project, LOTT constructed one main 12-inch reclaimed water distribution line through downtown at an approximate cost of \$923,000. The cost of additional pipelines, pumping facilities, and other infrastructure necessary to serve the prospective customers could total millions of additional dollars.

Who can I contact for more information?

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