

Your Guide to Class A Reclaimed Water



Class A Reclaimed Water

What is reclaimed water?

Reclaimed water is used water that has been cleaned to a high standard so it can be beneficially reused. LOTT Clean Water Alliance – a non-profit corporation formed by the cities of Lacey, Olympia, and Tumwater, and Thurston County – produces Class A Reclaimed Water. This high quality water can be used for almost any purpose except drinking. LOTT's Class A Reclaimed Water is continually monitored and tested to ensure that it meets strict quality standards set by the Washington State Departments of Health and Ecology.

Why produce reclaimed water?

LOTT produces reclaimed water as part of a long-range plan for managing our communities' wastewater capacity needs into the future. The plan is based on public feedback that wastewater should be treated as a resource to be reclaimed and reused. As our communities grow and more wastewater requires treatment, LOTT plans to expand reclaimed water production.



How is reclaimed water distributed?

Lacey, Olympia, and Tumwater reuse the water or distribute it to customers for irrigation and other uses. Thurston County does not currently distribute reclaimed water to customers, but that could change in the future.

Reclaimed water is sensible!

Water use in our local communities more than doubles in summer months due to irrigation. Every gallon of reclaimed water that is used for outdoor watering represents a gallon of potable water saved for drinking and other critical uses.

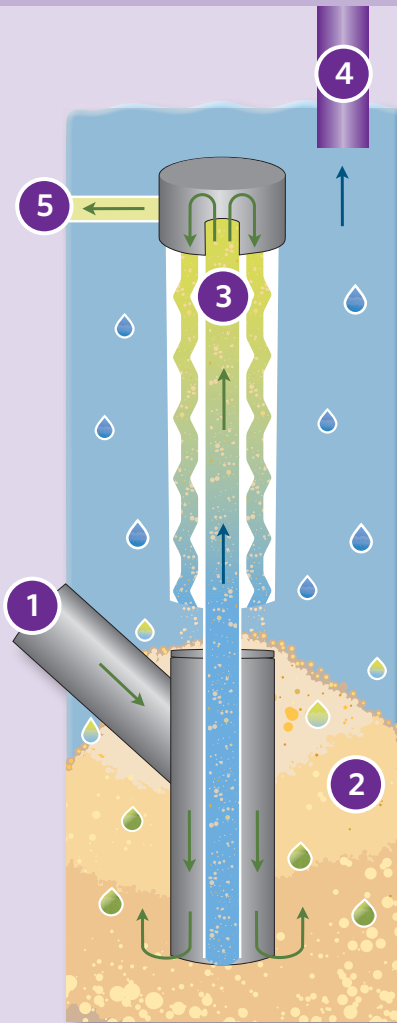


Reclaimed water is sustainable!

By producing reclaimed water, LOTT creates a resource from our wastewater. Reclaimed water can be used for many non-potable uses to help stretch water supplies. Reclaimed water may even be used to enhance wetlands and restore stream flows, improving habitat for fish and wildlife.

Using proven technologies that mimic nature's treatment and filtering processes, LOTT produces high quality reclaimed water from water that is used and discarded every day.

Two Treatment Plants – Two Technologies

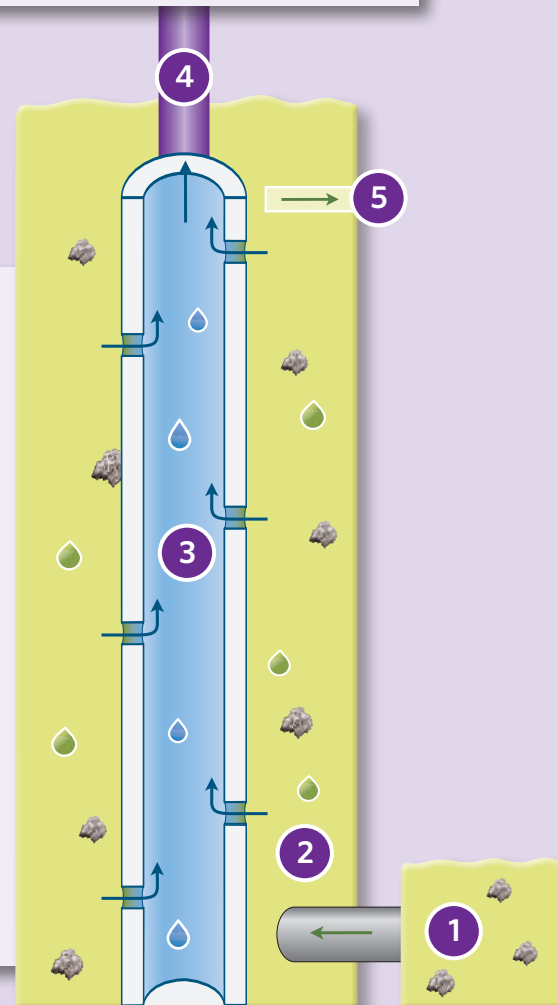


Budd Inlet Reclaimed Water Plant Sand Filter Technology

- 1 Treated wastewater (effluent) is pumped into the base of the sand filter and a chlorine solution is added.
- 2 Air forces effluent to flow up through the sand, leaving pollutants trapped in the sand particles.
- 3 Dirty sand flows up the center pipe and bounces down the sand washer. Clean sand falls onto the sand bed and goes back to work cleaning water.
- 4 Cleaned water is pumped to a chlorine contact basin and allowed time for disinfection, becoming Class A Reclaimed Water.
- 5 Dirty water from the sand washer is recycled back to the main plant for treatment.

Martin Way Reclaimed Water Plant Membrane Bioreactor Technology

- 1 Wastewater is aerated in basins where bacteria help break down pollutants.
- 2 The wastewater is then pumped into basins filled with thousands of membrane fiber strands.
- 3 Water is drawn into the hollow strands through tiny pores that pollutants can't get through.
- 4 Cleaned water is pumped to another basin and disinfected with a chlorine solution, becoming Class A Reclaimed Water.
- 5 Dirty water left behind is recycled back to the aeration basins for treatment.





Budd Inlet Reclaimed Water Plant

Budd Inlet Treatment Plant

The Budd Inlet Treatment Plant in Olympia is LOTT's main treatment facility, treating wastewater to advanced secondary standards. Most of the treated and disinfected water is discharged through an outfall to Budd Inlet, but a portion is diverted to the Budd Inlet Reclaimed Water Plant for further treatment to become Class A Reclaimed Water.



Budd Inlet Reclaimed Water Plant

The Budd Inlet Reclaimed Water Plant uses sand filter technology to produce up to 1.5 million gallons of reclaimed water daily. The actual volume produced each day varies to match demand for reclaimed water. The sand filters at the Budd Inlet Reclaimed Water Plant can be expanded to produce up to 3 million gallons a day. In the future, LOTT may use alternative treatment technologies to further expand reclaimed water production at this facility.



Downtown Uses

Class A Reclaimed Water from the Budd Inlet Reclaimed Water Plant is used to irrigate parks and streetscapes in downtown Olympia, such as Heritage/Marathon Parks, Percival Landing Park, Deschutes Parkway, and Marine Drive. It is also used in a fun wading stream at the East Bay Public Plaza, and for irrigation, process water, cleaning, water features, and toilet flushing at LOTT's Budd Inlet Treatment Plant and Regional Services Center.

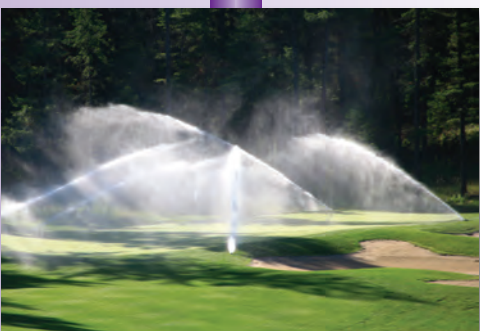


Storage Tank

Class A Reclaimed Water travels through purple pipes to LOTT's Reclaimed Water Storage Tank in Tumwater, which can hold up to 1 million gallons. The tank serves as the foundation for the City of Tumwater's Deschutes Valley Park.

Other Uses

Reclaimed water from the storage tank serves the Tumwater Valley Municipal Golf Course, which uses up to 600,000 gallons a day for irrigation. Future uses in the Tumwater area could also be served from this storage tank.



Reclaimed water must be conveyed in pipe systems that are color-coded purple. Where you see purple pipes, valves, or sprinkler heads, reclaimed water is likely in use.

Martin Way Reclaimed Water Plant

Martin Way Pump Station

Much of the wastewater from the Lacey area flows through LOTT's Martin Way Pump Station. Most is sent to the main Budd Inlet Treatment Plant, with a portion diverted to the Martin Way Reclaimed Water Plant for treatment to become Class A Reclaimed Water.

Martin Way Reclaimed Water Plant

The Martin Way Reclaimed Water Plant can produce up to 1.5 million gallons a day of Class A Reclaimed Water using membrane bioreactor technology. The plant is designed for incremental expansion as the community grows and additional wastewater is produced in the Lacey area. This plant could produce as much as 8 million gallons of reclaimed water per day in the future. Most of the reclaimed water produced at the Martin Way Reclaimed Water Plant is used to replenish groundwater at two locations.

Woodland Creek Groundwater Recharge Facility

The Woodland Creek Groundwater Recharge Facility is jointly owned by Lacey and Olympia and is operated by Lacey. The two cities replenish groundwater at this site as part of their state-approved water rights mitigation plans. By augmenting groundwater in this location, the cities are granted rights to withdraw groundwater in other locations to serve their drinking water systems.

Hawks Prairie Ponds and Recharge Basins

At LOTT's Hawks Prairie Ponds and Recharge Basins site, reclaimed water circulates through a series of five constructed wetland ponds and into groundwater recharge basins. The water flows through gravel in these shallow basins and into the soil below, eventually mixing with groundwater.

Public Walking Trails

The Hawks Prairie site is a park-like setting located at 3001 Hogum Bay Road NE in Lacey. It is open to the public dawn to dusk. The 40-acre site features walking trails, viewing benches, native plantings, and kiosks with information about reclaimed water. The site supports a variety of wildlife and is a popular spot for birdwatching.



What is the future of reclaimed water?

LOTT's long-range Wastewater Resource Management Plan includes expansion of reclaimed water production. This expansion will likely occur at LOTT's two existing reclaimed water plants. The timing for expansion may be driven by the need for more wastewater treatment capacity, changes to LOTT's discharge permit requirements, or demand for reclaimed water as a beneficial resource. Reclaimed water can play a role in management of our local water resources. Additional reclaimed water supplies could be used for water rights mitigation, stream flow or wetland enhancement, groundwater replenishment, irrigation, and more.

LOTT produces Class A Reclaimed Water, which for many years was the highest quality of reclaimed water designated by the Washington State Departments of Health and Ecology. Regulatory changes now allow for reclaimed water to be treated to drinking water quality level, classified as Class A+. New science and technology may eventually lead to changes in how LOTT treats and uses reclaimed water. As technology changes, LOTT will work with our local communities to explore how best to manage this important water resource.

Want to learn more?

For more information about reclaimed water, go to www.lottcleanwater.org. You can also visit LOTT's WET Science Center, featuring free interactive exhibits all about water. The WET Center is located at 500 Adams Street NE in downtown Olympia. Find out more at www.wetsciencecenter.org.

