



Annual Report 2023

*Cleaning and restoring water
resources for our communities*

LOTT's Performance in 2023

Each year, LOTT compares our performance with 10 key performance objectives and 20 priority activities identified in the Strategic Plan. The plan spans the 2019-2024 planning period and can be found in full at www.lottcleanwater.org. For 2023, LOTT met all performance objectives and made progress on priorities in the six-year work plan.

Objective 1

Achieve permit compliance

LOTT met 99% of all the water quality permit requirements for wastewater treatment at the Budd Inlet Treatment Plant. These requirements include strict discharge limits April through October for nutrients (nitrogen) and biochemical oxygen demand. We are proud to report that there were no violations for these water quality permit requirements, which are measured two ways – average concentrations and total pounds discharged to Budd Inlet. We also met all water quality permit requirements related to Class A reclaimed water production at the Budd Inlet Reclaimed Water Plant, with the exception of three sampling errors. The Martin Way Reclaimed Water Plant met nearly all water quality permit requirements, noting one exceedance in total coliform and two in turbidity.

Most other treatment plants that discharge to Puget Sound do not have strict discharge limits for nutrients. The Puget Sound Nutrient General Permit issued by the Department of Ecology in 2022 adds a nutrient removal metric for 58 treatment plants. For LOTT, the permit specifies a loading limit of 243,000 pounds of total inorganic nitrogen annually. In 2023, we measured a total of 127,999 pounds – only 53% of the annual load limit. This is an exceptional level of performance, attributable in part to a major upgrade in our biological nutrient removal system, which began in 2020 and was completed in March 2023.

LOTT was recognized with Silver Peak Performance awards for the Budd Inlet Reclaimed Water Plant and Martin Way Reclaimed Water Plant and a Gold Peak Performance award for the Budd Inlet Treatment Plant from the National Association of Clean Water Agencies.

Permit Compliance

Budd Inlet Treatment Plant		
Type	Discharge Limits*	Performance
Biochemical Oxygen Demand (BOD)	7 mg/L 671 lbs/day	3.33 mg/L 236 lbs/day
Total Suspended Solids (TSS)	30 mg/L 5265 lbs/day	5.34 mg/L 375.50 lbs/day
Total Inorganic Nitrogen (TIN)	3 mg/L 288 lbs/day	1.99 mg/L 141 lbs/day
Fecal Coliform Bacteria	200/100 mL	5/100 mL

* Average monthly discharge limits for summer season June-September

Budd Inlet Reclaimed Water Plant		
Type	Discharge Limits	Performance
Total Nitrate	10 mg/L	3.50 mg/L
Turbidity	2-5 NTU	0.53-1.40 NTU
Total Coliform Bacteria	< 23 MPN/ 100 mL	0.95 MPN/ 100 mL

Martin Way Reclaimed Water Plant		
Type	Discharge Limits	Performance
Biochemical Oxygen Demand	20 mg/L	2 mg/L
Total Suspended Solids	30 mg/L	0.07 mg/L
Total Nitrogen	10 mg/L	2.51 mg/L
Turbidity	0.2-0.5 NTU	0.03-0.19 NTU
Total Coliform Bacteria	< 23 MPN/ 100 mL	< 0 MPN/ 100 mL

Abbreviation	Unit
mg/L	milligrams per liter
lbs/day	pounds per day
mL	milliliter
NTU	nephelometric turbidity unit
MPN	most probable number

Permit compliance
Zero instances where limits were exceeded for total amount of pollutant discharged to Budd Inlet

Objective
2

Avoid combined sewer overflows (CSOs) into Budd Inlet, with no more than one occurring annually

Combined sewer overflows
Zero
since 2009

This objective was successfully met. CSOs refer to discharge of wastewater from LOTT’s emergency Fiddlehead outfall due to overloading of the treatment system during major rain events. There were no CSOs in 2023, even during an extreme high flow event in early December that brought 4.06 inches of rain in 28 hours and a peak flow rate of 64 million gallons a day. Operations staff followed high flow protocols and successfully managed this event by filling equalization storage basins and carefully metering the water back into the treatment process as the rain subsided.

Maintenance, Control Systems, and Environmental Compliance staff supported their efforts by keeping our facilities, equipment, and processes running properly. Completion of a major update to the nutrient removal system allowed us to repurpose former treatment basins for equalization storage, which contributed to our ability to manage this and future peak flow events.

Sanitary sewer overflows (SSOs) differ from CSOs; they are spills that occur in city collection systems. Though these spills generally involve infrastructure that is not owned or managed by LOTT, reporting of SSOs is required under LOTT’s discharge permit.

Volume of Wastewater Treated*			
Budd Inlet Treatment Plant	2021	2022	2023
Daily Average Flow	12.38	12.30	11.77
Minimum Monthly Average	9.08	9.51	9.48
Maximum Monthly Average	18.53	18.64	15.18
Peak Flow	45.05	64.54	64.11

* Million gallons per day

Objective
3

Engage the community proactively through public education, outreach, and involvement efforts

Education program
12,805
participants
Tours
3,110
attendees

LOTT connected with the public in a variety of ways in 2023. WET Center visitor numbers ramped back up to pre-pandemic levels and drew in over 8,500 walk-in visitors. LOTT’s school program hosted 2,618 students as part of our formal partnerships with our three local school districts – North Thurston Public Schools, Olympia School District, and Tumwater School District.

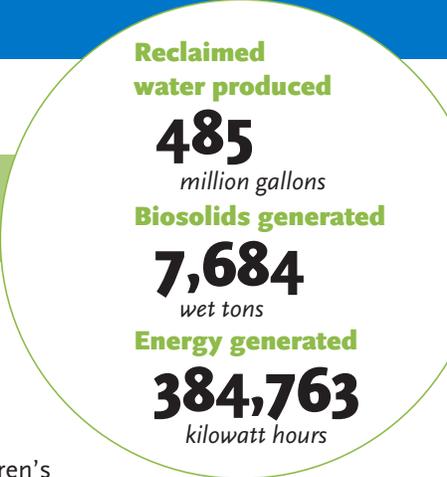


In 2023, we also improved access to information with a user-friendly redesign of the LOTT website. Browse through the new website at lottcleanwater.org. Public engagement for our master planning effort included the involvement of jurisdictional partners, the Squaxin Island Tribe, and community members, with presentations at numerous public meetings early in the year.

Objective
4

Manage and utilize wastewater as a source of renewable resources

While the primary function of the Budd Inlet Treatment Plant is to treat and clean wastewater, LOTT also recovers resources, including reclaimed water, biosolids and methane gas. Class B Biosolids produced at the plant are trucked to eastern Washington to be used as a soil amendment on fallow dryland wheat fields. The cogeneration system produces both heat energy and electricity from methane helping to reduce energy costs at the treatment plant and support the neighboring Hands on Children’s Museum. In 2023, we produced an average of 1.68 million gallons of Class A reclaimed water each day. This reclaimed water was used for water features, irrigating parks, streetscapes, and the Tumwater Valley Golf Course, and replenishing groundwater at LOTT’s Hawks Prairie Recharge Basins and at the cities of Lacey and Olympia’s Woodland Creek Groundwater Recharge Facility.



Objective
5

Utilize a formal process to evaluate, optimize, prioritize, and fund infrastructure needs

Formal process utilized **Yes**

LOTT completed a multi-year master planning effort that included a comprehensive assessment of processes and infrastructure at the Budd Inlet Treatment Plant and an evaluation of options to manage overall wastewater system capacity as our community grows. These assessments identified future capital projects that have been incorporated into our long-range capital improvements plan. The work also included a financial assessment, which validated the capacity development charge. The final 2050 Master Plan was adopted by the Board in April.



Objective
6

Complete capital projects necessary to effectively and reliably sustain existing infrastructure, build new capacity, and meet LOTT’s mission

The award-winning Biological Process Improvements project was completed in 2023. The project upgraded LOTT’s nutrient removal process with state-of-the-art technologies. The resulting treatment performance is now one of the best in the country and a model for other utilities. The high level of performance not only significantly improves capacity, but also protects water quality in Budd Inlet, and positions LOTT to meet further reductions in discharge permit limits anticipated in the future. The project also resulted in energy savings of approximately 2.5 million

kilowatt-hours per year, reducing annual utility costs by about 15%. The energy savings offsets 1,143 tons of carbon dioxide annually, equivalent to 2.9 million gasoline-powered car miles driven.

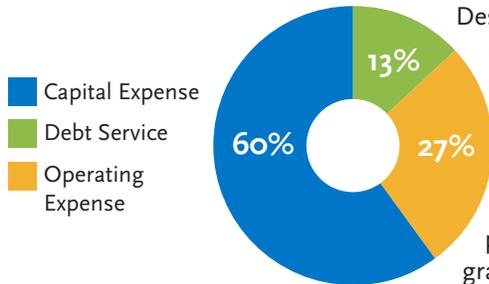
Major Capital Projects	
Project	Status
Digester System Improvements: Phase 1	100% Constructed
Budd Inlet Treatment Plant Mechanical Improvements	100% Constructed
Collection System Piping Rehabilitation: Phase 2	100% Constructed
Sludge Thickening System Improvements	50% Constructed
Substation and Switchgear A/B Replacement	100% Designed
Centrate Building Rehabilitation	100% Designed
Digester System Improvements: Phase 2	90% Designed

LOTT also completed inspection of all LOTT-owned sewer lines and a second phase of sewer system rehabilitation. We are well underway on the phased design and construction of improvements to the digester system, as well as additional projects such as improvements to the centrate building and switchgear replacement.

Objective
7

Manage utility finances in an economical, responsible, efficient, and sustainable manner

LOTT
monthly
rates
Below
regional
average



Despite a period of higher inflation, LOTT was able to implement planned capital projects within budget. We also stayed within the operating budget. All this was made possible by the six-year financial plan set by the Board. Two major achievements – securing a competitive \$10 million low interest loan from the State Department of Commerce Public Works Fund for the upcoming Centrate Building Rehabilitation project and receiving a \$1.1 million Puget Sound Energy conservation grant for the Biological Process Improvements project – helped to offset impacts of higher inflation.

Objective
8

Achieve an annual state audit that is free of findings

At the State’s request, LOTT did not have an annual audit in 2023, but has remained free of findings since becoming an independent entity in 2001. We earned a Certificate of Achievement for Excellence in Financial Reporting for the 15th straight year and changed to cash-basis accounting for improved efficiency and transparency.

Objective
9

Maintain an environment in which no more than 4% of staff voluntarily leave for similar work opportunities annually

Employee
retention
2%
voluntary
exits

LOTT’s focus on innovation, professional development, and employee wellness helps the organization remain a workplace of choice. Even with current post-pandemic workforce challenges, we have maintained a very low employee turnover rate. This is in part due to our long-standing, unspoken culture of excellence. To maintain that culture and support new employee onboarding, we identified and articulated our key cultural elements this year with input from staff across the organization. The “LOTT Way” is one of innovation, collaboration, high standards, responsibility, belonging, and problem-solving.

Objective
10

Maintain a safe work environment, achieving a safety experience rating at or below the industry standard of 1.0

Workplace safety
0.99
experience
rating

The Washington State Department of Labor & Industries experience rating defines the industry standard for safety. A utility’s rating is calculated by comparing Workers’ Compensation claims to the levels typical of our industry. LOTT’s safety rating is 0.99. This excellent rating indicates our proactive safety program is working.

LOTT implemented many enhancements to the Safety Program in 2023, including completion of a revised Emergency Response Plan, extensive safety trainings, on-site emergency kits, security improvements, additional fall protections, and a new confined space rescue team made up entirely of staff volunteers. We also continued to focus on employee health and was recognized with the WellCity award.

Work Plan Priorities 2019-2024

The 2019-2024 Strategic Plan includes an Internal Work Plan to guide organizational development, improve the way the utility does business, and keep LOTT agile and prepared for the future. The work plan identifies a list of actions related to six focus areas. The highest priority activities to be completed within the six-year planning period are included in the following table, along with a summary of their status. Additional information can be found in the 2019-2024 Strategic Plan at www.lottcleanwater.org.

	Priority Activities	Status
	Emergency Preparedness	
	Establish a specific emergency response structure	Done
	Assign staff to primary and back-up roles within the response structure	Done
	Develop response plans for a variety of emergency scenarios	Done
	Knowledge Management	
	Complete succession planning for critical positions	Ongoing
	Establish a strategic training program for apprenticeships and Operator advancement	Done
	Complete organizational development work for the Control Systems work group	Done
	Human Resources	
	Complete a staffing and organizational assessment for the Operations work group	Done
	Further develop LOTT's formal Human Resources program	Done
	Continue to evaluate and optimize staffing resources	Ongoing
	Information Technology	
	Conduct a network assessment	Done
	Conduct a system security assessment	In Process
	Complete an IT disaster recovery plan	Nearly Done
	Complete an assessment of LOTT's current MAX control system	Done
	Address priority needs identified in the system assessments.	Ongoing

Priority Activities	Status
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Capital Planning

- Refine and update the new staffing model as a tool for projecting CIP related staffing requirements. **Ongoing**
- Harness MainSaver data to prioritize asset management CIP projects. **Ongoing**



Planning for Emerging Issues

- Complete a master planning effort in two phases: the first to establish a long-range plan for the Budd Inlet Treatment Plant and the second to update LOTT's plan for overall system capacity **Done**
- Develop step-by-step procedures in coordination with the City of Olympia for responding to surface flooding that could convey floodwaters into the combined storm/sewer system **Done**
- Establish LOTT's baseline energy usage and greenhouse gas emissions for use in tracking future reductions **Done**
- Encourage community conversations on results of the Reclaimed Water Infiltration Study, future levels of treatment and uses of reclaimed water, and broader water management issues **Done**
- Reassess and adjust monthly service fees and connection fees for both residential and commercial customers as a result of the cost of service study findings, and propose associated updates to LOTT's Intergovernmental Agreement **Nearly Done**

LOTT Board of Directors 2023



*Carolyn Cox
City of Lacey*



*Lisa Parshley
City of Olympia*



*Leatta Dahlhoff
City of Tumwater*



*Tye Menser
Thurston County*

Your Wastewater Utility

The LOTT Clean Water Alliance is a non-profit corporation responsible for wastewater treatment in the urban areas of north Thurston County, Washington. L-O-T-T stands for the four government partners – the cities of Lacey, Olympia, and Tumwater, and Thurston County – that formed and govern the regional utility.

In 2023, LOTT met all our performance objectives for the year and completed a major construction project to upgrade our critical nutrient removal system at the Budd Inlet Treatment Plant. Our dedicated staff worked hard to treat and clean the water you use every day and to plan for the future, ensuring we continue to protect water quality and public health for years to come.

123,500 people served

4 billion gallons of wastewater treated

485 million gallons of reclaimed water produced

87 staff members

3 treatment plants

26,327 laboratory tests

102 active contracts

6,513 work orders

577 IT requests

12,805 education program participants

LOTT's Mission

To preserve and protect public health and the environment by cleaning and restoring water resources for our communities.

