



Annual Report 2019

*Cleaning and restoring water
resources for our communities*

LOTT's Performance in 2019

LOTT's new Strategic Plan covers the 2019-2024 planning period. This is the first Annual Report under the new plan. The report summarizes how the utility performed over the last year with regard to the 10 key performance objectives and 20 priority activities identified in the Strategic Plan. The full Strategic Plan can be found at www.lottcleanwater.org.

Objective 1

Achieve permit compliance

LOTT met nearly all permit requirements for the Budd Inlet Treatment Plant, Budd Inlet Reclaimed Water Plant, and Martin Way Reclaimed Water Plant. The Budd Inlet Treatment Plant is required to meet stringent nutrient discharge limits June through September. Most other treatment plants that discharge to Puget Sound do not have any limits for nutrients. LOTT is proud of the high level of treatment we provide, and our near-perfect record of permit compliance. However, minor permit violations occurred in 2019. Permit limits are set for the concentration and total amount (pounds) of pollutants discharged from treatment facilities. In 2019, eight water quality samples out of 5,369 had concentrations slightly higher than the permit limits. In all cases, LOTT was well below the limits for the total pounds of pollutant discharged.

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

- Biochemical oxygen demand (BOD) concentrations were elevated in two samples and total coliform was elevated in three samples due to the temporary use of peracetic acid as a disinfectant while upgrades to the ultraviolet light disinfection system were underway at the main plant.
- Nitrogen concentrations were elevated in two samples – one due to an illicit discharge that caused unusually acidic flows to enter the plant and disrupt the microorganisms that do the work of removing nitrogen from the water, and the other from a sample taken when nutrient removal processes were not on-line.
- Total trihalomethanes were elevated in one sample from a back-up monitoring well at Lacey and Olympia's groundwater recharge facility.
- There were also several minor violations related to reporting errors and omissions.

Permit Compliance

Budd Inlet Treatment Plant		
Type	Discharge Limits*	Performance
Biochemical Oxygen Demand (BOD)	7 mg/L 671 lbs/day	6.52 mg/L 468 lbs/day
Total Suspended Solids (TSS)	30 mg/L 5265 lbs/day	6.07 mg/L 431 lbs/day
Total Inorganic Nitrogen (TIN)	3 mg/L 288 lbs/day	2.46 mg/L 178 lbs/day
Fecal Coliform Bacteria	200/100 mL	14.50/100 mL

* Average monthly discharge limits for summer season June-September

Budd Inlet Reclaimed Water Plant		
Type	Discharge Limits	Performance
Total Nitrate	10 mg/L	5.13 mg/L
Turbidity	2-5 NTU	0.59 NTU
Total Coliform Bacteria	< 23 MPN/ 100 mL	2.43 MPN/ 100 mL

Martin Way Reclaimed Water Plant		
Type	Discharge Limits	Performance
Biochemical Oxygen Demand	20 mg/L	2.07 mg/L
Total Suspended Solids	30 mg/L	0.11 mg/L
Total Nitrogen	10 mg/L	2.38 mg/L
Turbidity	0.2-0.5 NTU	0.08 NTU
Total Coliform Bacteria	< 23 MPN/ 100 mL	0.02 MPN/ 100 mL

Objective
2

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

LOTT successfully met this objective, even though an exceptionally large snowstorm in February put staff to the test managing high flows during repeated power interruptions. During the three day event staff successfully managed average peak flows of 20.6 million gallons per day. It is possible that during one of the power blips, up to 8,100 gallons of effluent was not fully disinfected prior to discharge.

Sewer overflows
Zero
since 2009

Volume of Wastewater Treated*			
Budd Inlet Treatment Plant	2017	2018	2019
Daily Average Flow	13.73	11.62	11.03
Minimum Monthly Average	9.58	8.89	9.28
Maximum Monthly Average	21.15	17.11	13.60
Peak Flow	34.27	27.94	40.59
Reclaimed Water Daily Average	0.56	0.57	0.56
Martin Way Reclaimed Water Plant			
Daily Average Flow	0.89	1.49	1.26
Reclaimed Water Daily Average	0.72	1.22	0.96

* Million gallons per day

Objective
3

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

WET Science Center

17,104
total visitors

School Program

2,588
attendees

Tours

744
attendees

LOTT connected with community members in a variety of ways in 2019. The WET Science Center serves as the heart of our education program, and Saturday programs offered during the year drew in 6,524 visitors. LOTT's school program includes formal partnerships with our three local school districts – North Thurston Public Schools, Olympia School District, and Tumwater School District. Field trips to the WET Science Center teach students about wastewater treatment, energy and water conservation, and clean water careers. Public engagement in our Reclaimed Water Infiltration Study included two meetings of the study's Community Advisory Group and attendance by interested community members at a joint meeting of the study's Science Task Force and Peer Review Panel.

Objective
4

Manage and utilize wastewater as a source of renewable resources

Wastewater treatment plants are increasingly considered resource recovery facilities. In 2019, LOTT produced an average of 1.52 million gallons of Class A Reclaimed Water each day. Reclaimed water is used for water features, irrigating parks, streetscapes, and the Tumwater Valley Golf Course, and replenishing groundwater. Class B Biosolids produced at the Budd Inlet Treatment 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, saving close to \$126,000 in energy costs last year. LOTT also helped ratepayers conserve nearly 20,000 gallons of water a day through water conservation rebates.

Reclaimed water produced

556
million gallons

Biosolids generated

8,022
wet tons

Energy generated

1.7
million kilowatts

Objective
5

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

Formal process utilized **Yes**

The Capital Improvements Plan (CIP) is under continual review and adjustment. LOTT has been planning major upgrades to the Martin Way Reclaimed Water Plant over the last three years. In 2019, staff completed a comprehensive project review to prioritize project elements not yet completed. As a result, two near-term projects are being developed. This inclusive, adaptive process allows for completion of key project elements within the constraints of competing demands on staff time, resources, and operational needs. Also in 2019, LOTT began the first phase of a master planning effort to update the approach to developing new system capacity. This work involves shifting from the original vision of multiple satellite treatment facilities to optimizing treatment at existing facilities, including how to make the best use of limited space within the Budd Inlet Treatment Plant footprint. The second phase will begin in 2020 to refine plans for expanding reclaimed water production and use.

Objective
6

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

Multiple capital projects were underway in 2019, including upgrades to the ultraviolet disinfection system. This large-scale project required complete demolition and rebuild of concrete disinfection channels and installation of new ultraviolet lamps, ballasts, control modules, and power supplies. During construction a temporary disinfection system was in place, which used peracetic acid, a chemical similar to hydrogen peroxide.

Upgrade of this critical system is a significant milestone. Progress on capital projects is summarized in the table above.

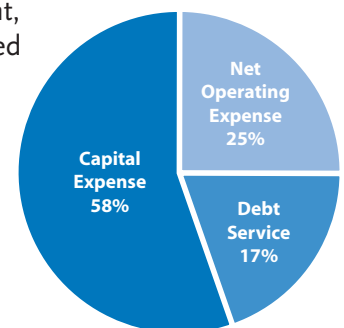
Major Capital Projects	
Project	Status
Ultraviolet Disinfection Upgrades	95% Constructed
Biological Process Improvements	90% Designed
Digester 4 Repair	100% Constructed
Influent Pump Station Improvements	100% Constructed
Capitol Lake Pump Station Improvements	100% Constructed

Objective
7

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

Effective cost control is achieved in a variety of ways, including asset management, value engineering, favorable financing, energy reduction efforts, and optimized staffing resources. The Washington State Public Works Board provided LOTT with the maximum award possible – a \$10 million low interest loan – for the upcoming Biological Process Improvements project. This forward-thinking project was ranked highly – 8th out of 35 applications – for improving key treatment processes, achieving significant energy savings, and freeing up valuable space for future facility needs. This favorable financing will save the utility millions of dollars in interest payments over the 20-year loan.

LOTT monthly rates **Below** regional average



Objective
8

Achieve an annual state audit that is free of findings

LOTT's annual state audit was free of findings, and has been since the utility became an independent entity in 2001. LOTT was awarded the Government Finance Officers Association Certificate of Achievement for Excellence in Financial Reporting for the 12th consecutive year for its 2018 annual financial report.

Annual state audit

Zero
findings

Objective
9

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

LOTT's focus on innovation, professional development, and employee wellness helps the organization remain a workplace of choice. A new Pilot Projects Team was created to identify and test new technologies and equipment. This is just one of many initiatives that encourage staff to share ideas that can benefit treatment processes, contribute to capital project design, address safety issues, and improve energy efficiency.

Employee retention

2%

voluntary exits

LOTT was one of only 43 utilities to be recognized as a Utility of the Future. This award recognizes forward-thinking, innovative, resilient utilities that provide value-added services to their communities. The recognition program is a joint effort of the Water Education Foundation, Water Environment Research Foundation, National Association of Clean Water Agencies, and WaterReuse, with support from the U.S. Environmental Protection Agency.



Objective
10

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

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. The excellent rating indicates our proactive safety program is working. LOTT recently undertook a major effort to improve electrical safety by adopting the National Fire Protection Association 70E program that establishes clear requirements for working on electrical systems and use of appropriate personal protective equipment.





Workplace safety

0.6

experience rating

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	Started
Develop response plans for a variety of emergency scenarios	Yet to Do
 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	Nearly Done
 Human Resources	
Complete a staffing and organizational assessment for the Operations work group	Nearly Done
Further develop LOTT's formal Human Resources program	Started
Continue to evaluate and optimize staffing resources	Ongoing
 Information Technology	
Conduct a network assessment and a system security assessment.	Yet to Do
Complete an IT disaster recovery plan for LOTT's business network.	Yet to Do
Complete an assessment of LOTT's current MAX control system	Yet to Do
Address priority needs identified in the system assessments.	Yet to Do

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 **Phase 1 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 **Started**
- Establish LOTT's baseline energy usage and greenhouse gas emissions for use in tracking future reductions **Started**
- 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. **Yet to Do**
- 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 **Started**



LOTT's Board of Directors during 2019 included Olympia City Council Member Lisa Parshley, Lacey Deputy Mayor Cynthia Pratt, Tumwater Mayor Pete Kmet, and Thurston County Commissioner Tye Menser.

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 2019, LOTT received a Wastewater Treatment Plant Outstanding Performance award from the Department of Ecology for achieving 100% permit compliance in 2018 at the Budd Inlet Treatment Plant, and three gold-level Peak Performance awards from the National Association for Clean Water Agencies for each of our treatment facilities.

86 staff members

3 treatment plants

1,800 laboratory tests monthly

8 major construction projects

115 current contracts

125,000 people served

523 work orders monthly

12 million gallons of wastewater treated per day

1,425 WET Center visitors monthly

LOTT's Mission

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

