

NACWA 2014 Excellence in Management Recognition Program
LOTT Clean Water Alliance
Product Quality

The LOTT Clean Water Alliance submitted an application in March 2014 for NACWA's Peak Performance Gold Award for the Budd Inlet Treatment Plant performance in 2013. In 2013, there were no permit violations for that facility, and there were 1314 compliance points. The Budd Inlet Treatment Plant is the only LOTT facility permitted with an NPDES permit, and therefore, the only LOTT facility for which NACWA Peak Performance awards may apply.

LOTT also operates the Budd Inlet Reclaimed Water Plant and the Martin Way Reclaimed Water Plant. These facilities are not eligible for Peak Performance awards as they are regulated by a Washington State environmental permit rather than an NPDES permit since all of the water treated at these facilities is reused in some fashion and not discharged to a receiving water.

Product quality is of the utmost importance to LOTT as reflected by the following goals from LOTT's Performance Plan:

- Protect water resources through high quality wastewater treatment by achieving 100% compliance with regulatory requirements

In 2013, there were no permit violations for the Budd Inlet Treatment Plant or other LOTT facilities.

- Manage and utilize wastewater as a source of renewable resources by producing and reusing reclaimed water, Class B biosolids, and energy from methane

LOTT produced an average of over 500,000 gallons a day of Class A Reclaimed Water, used by LOTT and community partners for irrigation, toilet flushing, and as cleaning and process water. 100% of LOTT's biosolids were reused as soil amendment for crop and forest lands. LOTT generated at least 1.8 million kilowatt-hours of energy in 2013 through their cogen system, providing heat and power to LOTT and heating to the nearby Hands On Children's Museum.

- Operate facilities in a manner that balances environmental, social, and economic considerations by avoiding combined sewer overflows

There were no combined sewer overflows or releases of partially treated wastewater in 2013.

- Maximize utilization of existing treatment capacity by achieving actual discharges that are well below permit limits for TIN and BOD

LOTT is committed to not only meeting permit compliance but treating water to a higher level than that required by permit. LOTT's permit limit for total inorganic nitrogen is 288 pounds per day (ppd); LOTT achieved an average of 189 ppd. LOTT's permit limit for biochemical oxygen demand is 671 ppd; LOTT achieved an average of 304 ppd.

The Performance Plan includes many other goals and objectives that assist or support managing product quality. The performance measures are designed to provide information in a way that allows appropriate response time and resources to address needed changes. The goals and objectives are all linked to a management area and to an employee with primary responsibility, those employees with supporting responsibility, and to all supporting activities that assist in achieving success in the key management areas.

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Financial Viability

As part of long-term financial and capital improvements planning, LOTT utilizes a complex and comprehensive spreadsheet which assists in planning rates, debt, capital and operating expenditures, as well as determining when new increments of capacity need to be on line. This tool, affectionately dubbed “The Wizard,” allows various scenarios to be vetted and determine the effect on rates, cash flow, debt, and the system’s capacity. The Wizard covers the current fiscal period through LOTT’s theoretical buildout date, currently estimated to occur in 2053, and considers the time value of money for costing future projects. This tool is continuously updated and is used to prepare LOTT’s annual Budget and Capital Improvement Plan (CIP).

As part of LOTT’s 2013-2018 Performance Plan, LOTT’s Board of Directors approved several goals and objectives which serve as financial policies and include metrics for which the performance of the utility is measured. These include:

- Manage finances so that expenses do not exceed annual adopted budget;
 - Achieve a positive unreserved cash balance at the end of each annual budget cycle;
 - Maintain cash reserves of 6 months of average operating expenses and \$3 million for emergency capital expenditures;
 - Maintain a bond rating of A level or higher;
 - Operating and Debt Service expenditures are no more than 85% of total revenue;
- Each year, the budget and CIP are planned such that these policies are met. New capital projects are scheduled to ensure compliance with these policies and the Wizard helps determine if sufficient cash is available for construction. Future rate estimates, both monthly and those for new connections, can be adjusted as needed.

Performance Data

Metric	2013	2012	2011
Service Revenue: 100% or greater of projected Wastewater Service Charge revenue	100%*	101%	102%
Expenses do not exceed annual adopted budget	Budget: \$13,146,591 Actual: \$12,604,468	* Budget: \$12,634,062 Actual: \$11,568,818	* Budget: \$12,062,849 Actual: \$10,552,137
Cash Balance: Positive Annually (Not including reserves)	\$26,763,966	\$15,761,152	\$20,553,930
Cash Reserves	Achieved	Achieved*	Achieved*
Bond Rating of A or Higher	AA-	AA-*	AA-*
Operating and Debt Service less than 85% of total revenue	78%	64%	72%

* The current Performance Plan applies to years 2013-2018. A prior version of the plan, encompassing 2012 and 2011, had many of the same performance metrics, however, there were some differences. If a metric did not apply to a given year, it is denoted with an asterisk.

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Customer Satisfaction

LOTT provides the wastewater management and treatment services for the urban areas in north Thurston County, but does not have routine or direct connection to customers. LOTT's partner cities – Lacey, Olympia, and Tumwater – maintain the sewer collection systems and deal directly with customers for billing and service issues. That being said, LOTT works closely with its partner cities to ensure that customers are satisfied and their concerns are addressed.

LOTT completes a comparison of wastewater service rates every two years, and routinely falls near the middle range of charges. In planning for capital investments, LOTT keeps the customer in mind and spreads rate increases incrementally over time, rather than making large adjustments. LOTT rates are currently collected as a flat, uniform rate for single-family customers. Based on interest from customers, LOTT is currently working with the partner cities to assess the viability of a volume-based rate structure.

Perhaps the best example of LOTT's commitment to meeting customers preferred levels of service is the Reclaimed Water Infiltration Study. This large-scale study was initiated by LOTT in response to community concerns about potential risks of infiltrating reclaimed water to groundwater because of residual chemicals that may remain in the water. The study will examine potential risks and alternative levels of treatment, and community conversations about these topics will determine future treatment levels.

Building public trust and being responsive to customer feedback is very important to LOTT, as reflected by these goals from LOTT's Performance Plan:

- Build public trust by providing open, transparent, and effective access to information
LOTT works hard to be the first source of information for customers, letting them know about projects and activities and responding in a timely manner to any inquiries. LOTT is always looking at ways to improve communications with the public and build on their comprehensive, user-friendly website.

- Develop public trust by proactively seeking and incorporating public feedback into LOTT plans and activities

LOTT strives to offer multiple ways for the public to provide feedback and input, including public opinion research, evaluation surveys, comment cards, questions posed on the website, public meetings and workshops, social media, QR codes, signage with contact information, an active speaking circuit, and much more.

- Develop educational programs that foster public awareness and support for LOTT's mission
LOTT's WET Science Center is a 2,400 square foot facility filled with interactive displays that teach visitors about the importance of clean water, the science of wastewater treatment, reclaimed water as a new resource, water conservation, and environmental stewardship. The science center is a popular destination that helps the public understand the complexities of wastewater management. Tours of the treatment plant are offered routinely. The center sees over 3,500 students and 8,500 walk-ins each year.

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Employee and Leadership Development

The workplace environment is one of the areas of emphasis of LOTT's Performance Plan. This Plan contains several goals relating to Employee and Leadership Development:

- Maintain status as a workplace-of-choice to recruit and retain a well-qualified, diverse, satisfied workforce

Specific measures related to this goal include: avoid having more than 5% of staff voluntarily leave for similar work opportunities annually; maintain a monthly average vacancy rate of 10% or less; and achieve journey-level status and fulfilled service commitments for at least 75% of apprentices. In 2014, the Senior Leadership Team initiated a contract to improve LOTT's recruitment, hiring and retention efforts, in particular for highly specialized technical positions.

- Provide employee development and support programs that result in an adaptive, efficient, satisfied, and skilled workforce

LOTT provides a variety of professional development opportunities, including an active Career Development Program. Staff members or their supervisors can create custom programs to improve their skills and prepare them to advance into a new position or backfill an existing position. Trainings, courses, conferences, certificates, and more are available and can be pursued by all employees. Semi-annual salary surveys are conducted to ensure that staff is compensated appropriately for their work. The Senior Leadership Team also mentors a rotating Management Advisory Group, who develop their leadership skills to prepare for management positions.

- Be an industry leader by cultivating excellence, innovation, mentoring, and knowledge sharing

Over the last year, LOTT has renewed its commitment to the values listed above. Development of the Performance Plan is one example; it was a concerted effort to involve every staff member in the process, include their input and perspectives, and have every employee invested in the result. The plan helps each employee understand their role in the bigger picture, feel valued for their role, and recognize interconnectedness across the organization. In the last year, senior leadership has reinforced their team-based management approach and developed numerous cross-division staff teams to take on activities and initiatives, such as planning related to capital projects and IT governance. Teams have also been formed to fill functions that were previously only one person deep, addressing the need to develop succession plans for 100% of critical functions and spreading institutional knowledge across a wider base.

- Promote health and wellness of employees as integral to worker safety and productivity
- LOTT supports an active Wellness Program, reflected by the fact that LOTT earned the WellCity award in 2012 and 2013. The award sets a high bar for promoting employee wellness, and was earned in part through campaigns to encourage healthy eating and regular exercise and related events that are filled with lots of team-building fun.

- Build and maintain a culture of safety and security

A new Safety Officer position was established in 2013 to reinforce LOTT's culture of safety. Improvements include regular safety inspections of all facilities and a comprehensive safety training schedule that is tailored to the needs of each work group.

NACWA 2014 Excellence in Management Recognition Program LOTT Clean Water Alliance Operational Optimization

Throughout 2013, LOTT staff participated in an organization-wide effort to develop a Performance Plan for the 2013-2018 period. The Plan sets a high bar for performance and serves as a tool to ensure continual performance improvements, including cost control, improved operational efficiency, and ongoing learning.

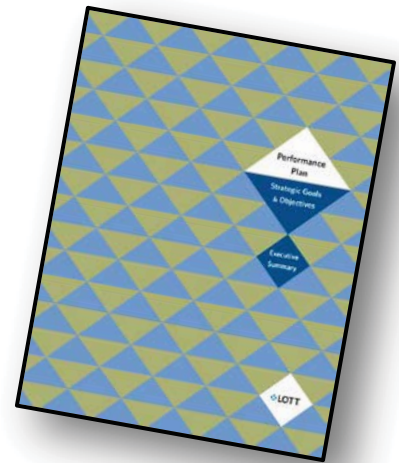
The Performance Plan is designed to address all facets of operations, resource recovery, and industry leadership. The Key Management Areas outlined in the Performance Plan are Utility Management, Treatment and Capacity, Community Engagement, and Workplace Environment. Each of these areas contains numerous goals and objectives that contribute to operational optimization, including:

- Evaluating 100% of projects/programs for cost effectiveness
- Embracing asset management and use of the triple bottom line standard for all system investment (economic, environmental, and social considerations)
- Ensuring representation from all work groups on capital projects
- Performing business case evaluations on all capital projects over \$500,000 in value
- Managing and utilizing wastewater as a source of renewable resources by producing and reusing reclaimed water, Class B biosolids, and energy from methane
- Achieving a net reduction in power used of 5% by 2018
- Improve cross-division collaboration to support innovation and effective problem-solving

LOTT recognizes the need to stay current in changing technologies and science applications to treatment, and accomplishes this through ongoing professional development and training opportunities for all staff. LOTT's Reclaimed Water Infiltration Study is a major undertaking designed specifically to advance the understanding of LOTT's reclaimed water recharge practices through review of national and international research and application of current science to local conditions.

From 2011 - 2013, LOTT has taken on significant staff optimization initiatives, including:

- Reduced shift coverage to eliminate the graveyard Operations shift; this allows LOTT to better utilize two highly trained operators and more fully staff dayshift operations
- Created a team-based system for evaluation and vetting of proposed capital projects, with representation across all divisions of the organization
- Completed a complex transition for a retiring Process Control Supervisor, who held an enormous collection of vital institutional knowledge in his head, to a new Process Control Team, made up of six Operations and Environmental Compliance staff members



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Infrastructure Stability

The LOTT Wastewater Resource Management Plan, A.K.A. the “Highly Managed Plan”, identifies a program of continuous planning for infrastructure and capacity needs, adding small increments of capacity in the form of satellite reclaimed water treatment facilities, “just in time”. The Plan was developed with tremendous public involvement and values which include a desire to protect the environment, control costs, maximize the use of existing facilities before investing in new ones, use treated water as a resource, achieve a fair and balanced costs between growth and current residents, and plan with a long-range perspective. Annually LOTT prepares three [planning reports](#) (Flows & Loadings, Inflow & Infiltration, and Capacity Assessment) used to estimate anticipated capacity demands and evaluate the impact on each unit treatment process. This evaluation, in conjunction with the asset management program, guides the development and prioritization of the annual [capital improvements plan](#). LOTT’s Performance Plan includes numerous goals and objectives related to ensuring Infrastructure Stability, including:

- Successfully deliver projects by achieving project objectives with input and support from key work groups across the organization

To represent “boots on the ground” in the review and prioritization of capital projects, the Capital Projects Planning Process (CP3) Team was established. The team consists of representatives from the Maintenance, Operations, Control Systems, Finance, and Engineering departments. This multidisciplinary approach has vastly improved the project scoping and coordination process, minimizing scope creep and reducing costly changes during the design and construction phases. It has also improved the development of an executable schedule, balancing staff resource availability, seasonal constructability constraints, and project priorities. As projects are initiated, a point person from each work group is assigned to the project to provide review from their work group’s perspective. A documented project validation process is required for 90% of all projects and a formal business case evaluation is required for all projects over \$500,000, considering the total cost of ownership (capital/operating, social, and environmental).

- Embrace asset management and use of the triple bottom line (economic, environmental, and social considerations) as the operational standard for all system investment

LOTT’s Asset Management Program (AMP) guides the acquisition, use, repair, and replacement of assets to optimize their use and function, and minimize costs over the asset’s life. Program goals include providing for long-term sustainable wastewater treatment infrastructure for the service area, maximizing the investment and reinvestment of ratepayer dollars, achieving the lowest overall life cycle costs of LOTT physical assets, and enabling LOTT to maintain its existing rate structure. In 2009, LOTT completed the [AMP Executive Summary Plan](#), which provides an overview of LOTT’s program. In 2013, LOTT hired a full-time Asset Management Coordinator, reporting to the Capital Planning Manager, to allow for full implementation of the AMP and ensure direct connectivity to capital improvements planning process. Asset data is stored in the computerized maintenance management system (CMMS) and includes condition and criticality scoring (risk), installation date, expected useful life, and replacement cost enabling forecasting of future investment requirements. Asset management and CMMS training are required for all staff.

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Operational Resiliency

LOTT Senior Leadership has developed a renewed emphasis on team-based leadership over the last year, as a direct result of the Performance Plan process. The new approach involves a proactive effort to ensure that the Senior Leaders are all in-the-know about upcoming projects and issues and that input from staff across the organization can be applied to prevent, respond to, and resolve problems. Goals from LOTT's Performance Plan that address resiliency include:

- Plan and manage the utility within financial benchmarks
- Embrace asset management and use of the triple bottom line (economic, environmental, and social considerations) as the operational standard for all system investment
- Complete capital projects in a responsible, efficient, effective, and responsive manner
- Successfully deliver projects by achieving project objectives with input and support from key work groups across the organization
- Protect water resources through high quality wastewater treatment
- Operate facilities in a manner that balances environmental, social, and economic considerations and Operate as a good neighbor to minimize impacts
- Build capital facilities "just in time"
- Collaborate at the leadership level to advance responsible utility management and environmental stewardship
- Build and maintain a culture of safety and security and Develop a comprehensive emergency preparedness program to protect people, the environment, and infrastructure

Actions specifically intended to improve operational resiliency and reduce risk include:

- Established a new IT Governance Committee in 2013 to develop an IT Strategic Plan and improve consistency and compatibility in software and hardware
- Conducted a network security and control assessment to identify areas of physical and cyber security vulnerabilities; implemented actions to mitigate vulnerabilities
- A proactive approach to safety with a new Safety Officer position in 2013, regular safety inspections of all facilities, and improved safety trainings tailored to each work groups' needs
- Emergency preparedness measures such as interlocal cooperation agreements with partner jurisdictions to allow for shared emergency support; housing key records in an alternate facility; ensuring critical functions during emergencies; regularly testing operational systems and emergency generators; conducting preparedness training and drills for staff; and membership in Washington WARN, a network for shared emergency assistance
- A renewed effort to engage legal staff on the ground floor of all LOTT projects and activities to reduce the likelihood of potential legal issues; as a result, there have been no successful legal challenges to LOTT and each claim LOTT brought has been successful
- Safeguards against Public Records Act violations by providing staff training on properly handling requests, a dedicated Public Records Officer, and a plan to establish a new Electronic Records Management System; no violations have occurred
- A Property Acquisition Program to acquire property for the long term; this ensures LOTT has sufficient property for growth to support the long-term capital improvements plan

NACWA 2014 Excellence in Management Recognition Program
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Community Sustainability

LOTT is committed to managing the utility based on the triple bottom line, making every effort to balance environmental, social, and economic considerations over both the short- and long-term. Many of the goals in LOTT's Performance Plan reflect this commitment, including:

- Complete capital projects in a responsible, efficient, effective, and responsive manner

LOTT strives to provide multiple community benefits and complete capital projects in ways that recognize stakeholder concerns and interests. One example of this is East Bay Public Plaza, opened in 2012, adjacent to LOTT's main treatment plant. It was developed by LOTT with input from community partners as a vibrant public space that will spur economic development and educate the public about the value of clean water. The plaza features an interactive stream fed by Class A Reclaimed Water.



- Protect water resources through high quality wastewater treatment and Maximize utilization of existing treatment capacity

LOTT is committed to not only meeting permit compliance but treating water to a higher level than that required by permit. LOTT's permit limit for total inorganic nitrogen is 288 pounds per day (ppd); in 2013, LOTT achieved an average of 189 ppd. LOTT's permit limit for biochemical oxygen demand is 671 ppd; LOTT achieved an average of 304 ppd.

- Manage and utilize wastewater as a source of renewable resources

LOTT produces Class A Reclaimed Water which is used by community partners for irrigation, toilet flushing, groundwater recharge, and water rights mitigation. Methane at LOTT's Budd Inlet Treatment Plant is used to generate heat and electrical energy for LOTT and neighboring facilities. Class B biosolids are used as soil amendment on agricultural fields and forest lands.

- Operate facilities in a manner that balances environmental, social, and economic considerations and Operate as a good neighbor to minimize impacts

LOTT's primary treatment plant is surrounded by residential and commercial development in downtown Olympia. A major upgrade project in 2013 included state-of-the-art odor control and an attractive façade to ensure that LOTT is a good neighbor and that the project contributes to revitalization of the area.



- Optimize flow reduction to minimize need for additional capacity

LOTT has implemented a regional water conservation/flow reduction program since 1997, and in 2012, reached its goal of reducing flows by over 1,000,000 gallons per day. The program continues through 2018, offering rebates and incentives to residential and commercial customers.

- Collaborate at the leadership level to advance environmental stewardship

The LOTT Board of Directors currently has staff working on several initiatives to protect groundwater resources: facilitating a Regional Septic Work Group to explore strategies for converting urban-density septic systems to the sewer system; and conducting a multi-year study on the risks associated with infiltrating reclaimed water to groundwater because of pharmaceuticals and personal care products that may remain in the water after treatment.

NACWA 2014 Excellence in Management Recognition Program
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Water Resource Adequacy

LOTT is charged with wastewater management for the urban areas of north Thurston County, and does not play a direct role in analyzing and securing water supplies within the service area. That is the role of LOTT's partner cities through their water utilities. That being said, LOTT produces Class A Reclaimed Water which contributes to the overall water supply picture. Goals of LOTT's Performance Plan that reflect its commitment to supporting water resource adequacy include:

- Manage and utilize wastewater as a source of renewable resources
LOTT strives to treat at least 10% of its wastewater flows to Class A Reclaimed Water standards. This water is then used by customers within the service area for irrigation, toilet flushing, and other non-drinking purposes, helping to reserve drinking water for those uses that require the highest quality water. This helps the city water utilities to stretch their drinking water resources. Reclaimed water is also being used by two of the city partners as mitigation for obtaining additional water rights, which helps them meet the water supply needs of their growing communities. Finally, LOTT depends on infiltration of reclaimed water as the key to meeting future wastewater management needs. Rather than discharge more treated wastewater to marine waters, recharge facilities are planned where reclaimed water will be infiltrated to replenish groundwater. This strategy helps meet both wastewater management and water supply needs. One infiltration facility is currently in use, the Hawks Prairie Recharge Basins, and LOTT is continually evaluating potential properties for future recharge facilities.
- Optimize flow reduction to minimize need for additional capacity
LOTT has implemented a regional water conservation/flow reduction program since 1997, and in 2012, reached its goal of reducing flows by over 1,000,000 gallons per day. The program continues through 2018, offering rebates and incentives to residential and commercial customers. This program benefits LOTT by reducing the flows in need of wastewater treatment and LOTT's partner cities, by easing demands on the water supply.
- Develop innovative and engaging educational programs that foster public awareness and support for LOTT's mission

LOTT has an active education program that reaches out to people of all ages to foster an appreciation for clean water and encourage water conservation and source control. The WET Science Center serves as the heart of the education program, offering interactive exhibits free to the public, six days a week. A formal partnership with the three area school districts ensures that an entire grade level will visit the WET Science Center each year and carry home messages about conservation and resource stewardship. Special programs on Saturdays and enticing displays ensure that all visitors get something valuable from their visit. In 2013, over 17,000 visitors came through the science center.



NACWA 2014 Excellence in Management Recognition Program
LOTT Clean Water Alliance
Stakeholder Understanding and Support

One of the four management areas of LOTT's Performance Plan is "Community Engagement," defined as "a two-way flow of information and ideas, involving LOTT, ratepayers, members of the public, community groups, partner organizations, staff members, and industry peers." The goals in that area focus on developing stakeholder understanding and support:

- Develop innovative and engaging educational programs that foster public awareness and support for LOTT's mission

Support for LOTT's reclaimed water program is especially critical for ensuring that planned future facilities can be built in the service area and that the water can be used. LOTT's new East Bay Public Plaza, a public open space featuring an interactive stream-like water feature fed by reclaimed water, is a highly effective means of engendering acceptance and enthusiasm for reclaimed water! LOTT's WET Science Center also fosters awareness and understanding of wastewater management, reclaimed water, and water conservation. Under a Facilities Use Policy developed in 2012-2013, LOTT invites local agencies and nonprofit groups to hold meetings in LOTT's Board Room, which offers exposure of attendees to the WET Science Center. In 2013, there were a total of over 17,222 total visitors, representing 16% of LOTT's ratepayer base (exceeding the goal of 10%). In addition, treatment plant tours were given to over 3,000 students and 952 people, helping attendees appreciate the complexity and cost of wastewater treatment.

- Operate as a good neighbor to minimize impacts

Involving stakeholders in decisions that will affect them usually involves capital projects. LOTT has just begun construction of a reclaimed water storage tank in Tumwater. The collaborative project includes a city neighborhood park to be built over the top of the storage tank. A series of three public meetings were held for neighbors to identify issues and concerns which were addressed during design of the project and plans for construction.

- Develop public trust by proactively seeking and incorporating public feedback into LOTT plans and activities

Actively involving stakeholders in decisions that affect them may be best illustrated in LOTT's Reclaimed Water Infiltration Study. In late 2012, LOTT formed a Community Advisory Group representing diverse perspectives to inform study efforts. Three citizen focus groups and two public meetings were also held in 2013. LOTT invited both of our primary state regulatory bodies, the Departments of Ecology and Health, and the Squaxin Island Tribe to serve on the study's Science Task Force with staff from our three cities and the county. Results of that study will be shared with the public and community conversations about acceptable levels of risk will guide future levels of service regarding reclaimed water treatment and uses.

- Build public trust by providing open, transparent, and effective access to information

Overview presentations about LOTT's programs, rates, and operations are routinely provided to community groups and also given in the form of State of the Utility Presentations to the three City Councils and the Board of County Commissioners. The annual Budget and Capital Improvements Plan includes a public hearing and opportunity for input. Information about LOTT operations will be expanded further in 2014 as LOTT initiates live streaming of Board meetings.

NACWA 2014 Excellence in Management Recognition Program
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Energy Management/Efficiency

LOTT's Performance Plan includes numerous measures related to improving energy efficiency:

- Reduce net overall electrical usage by at least 5% over the 6-year planning period

In 2013, LOTT conducted a third party energy efficiency audit through Oregon State University to evaluate operational practices and identify opportunities for energy savings. The LOTT Board of Directors dedicated funding for annual energy efficiency improvements. The results of the audit are being evaluated for potential projects over the next few years. The first projects are:

- Lighting upgrades to LED technology for the exhibit gallery of the WET Science Center
This project replaced 50 watt halogen bulbs with 10 watt LED bulbs which provide brighter light, less heat, and an energy savings of nearly \$1,500 per year.
- Lighting upgrades to LED technology for the Budd Inlet Treatment Plant
This project will replace all the outdoor lights with LED units, reducing the necessary lighting energy from about 160,000 kilowatt hours to 60,000 kilowatt hours per year.

- Capture and use an average of at least 65% of the available methane and biogas
- Produce an average of 150,000 kilowatt hours of energy per month

LOTT installed a cogeneration system in 2009 to utilize as much methane as possible and generate power to offset a portion of commercial energy usage. In 2013, the system generated over 2 million kilowatt hours of electricity, for a savings of \$150,412. Heat energy from the system supplied a low heat loop that provides heating and cooling for LOTT's LEED Certified (platinum) Regional Services Center, some processes in the Budd Inlet Treatment Plant, and the neighboring Hands On Children's Museum.

Cogeneration Energy Savings

Year	Methane Reused in Cogen System	Methane Reused in Boilers	Methane Flared to Atmosphere	Kilowatts Generated	Electrical Savings
2011	68.2%	9.2 %	22.6%	2,380,863	\$171,422
2012	72.1%	16.0%	11.9%	2,507,608	\$180,548
2013*	58.2%	14.6%	27.2%	2,134,354	\$153,673

**savings was down in 2013 due to routine maintenance that took the system out of service for several months*

NACWA 2014 Excellence in Management Recognition Program
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Water Resources Recycling & Stormwater Management

Serving the cities of Lacey, Olympia, and Tumwater, the LOTT Clean Water Alliance operates two reclaimed water facilities – a sand filter system at its central wastewater treatment plant, and a membrane bioreactor satellite plant. Both treat to the state of Washington’s Class A Reclaimed Water standards. Water from the central Budd Inlet Reclaimed Water Plant is used in the downtown Olympia area for irrigation at state, city, and port parks; a fountain, pond, demonstration wetland, and interactive wading stream adjacent to LOTT’s Regional Services Center; and toilet flushing in the LOTT building, education center, and neighboring Hands On Children’s Museum. Reclaimed water from the satellite plant in Lacey is piped three miles north to a 40-acre site with a series of constructed wetland ponds and groundwater infiltration basins. A portion of the water is also diverted to the south where the cities of Lacey and Olympia have built a sub-surface infiltration facility, using LOTT’s reclaimed water for water rights mitigation. Production, distribution, and use of reclaimed water are the core of LOTT’s long-range Wastewater Resource Management Plan.

Showcasing the product has been a key strategy for gaining public awareness, understanding, and support for the program. When LOTT’s new Regional Services Center and WET Science Center building was built in downtown Olympia in 2010, it deliberately featured a vessel-shaped fountain symbolically pouring the water back out into the community. A pond fed by the



fountain extends across the entire front of the building, supported by interpretive signage about the reclaimed water. In 2012, the water features were extended to include a wetland, demonstrating an environmental use of the water. Across the street, LOTT built the East Bay Public Plaza. To demonstrate that Class A Reclaimed Water is safe for public contact, LOTT applied for and received the first recreational water permit in the state for a water feature using reclaimed water. The interactive wading stream attracts hundreds of people on warm sunny days.

While regional stormwater management is not within LOTT’s authority, LOTT takes responsibility for effective management of runoff generated at its facilities. LOTT’s Regional Services Center and the public restrooms at the East Bay Plaza both feature green roofs; park kiosks at the Hawks Prairie Recharge Basins feature rain gardens; and parking areas at a pump station and treatment plant feature pervious paving.

NACWA 2014 Excellence in Management Recognition Program
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Pretreatment

The LOTT Clean Water Alliance is responsible for centrally administering its multi-jurisdictional Industrial Pretreatment Program, in conjunction with the LOTT partner jurisdictions. Currently, there are nine (9) Significant Industrial Users and two (2) Minor Industrial Users permitted by the Program. Implementation procedures and pretreatment regulations are uniform throughout the LOTT service area. LOTT conducts the majority of pretreatment program activity. These activities are coordinated with the appropriate LOTT partner through a Pretreatment Coordinator, designated by the partner's Director of Public Works. Pretreatment coordinators provide a central contact point with the LOTT Industrial Pretreatment Program to arrange local participation in record review, collection system information, site inspection, sampling, and other areas.

Each LOTT partner provides the legal authority for enforcement of the *LOTT Discharge and Industrial Pretreatment Regulations* (LOTT Regulations) that are adopted into the partner's respective municipal codes, verbatim, as identical sewer use ordinances. Article VII of the *Interlocal Agreement* requires that modifications or amendments to the LOTT Regulations must be approved unanimously by LOTT Board of Directors. The approval of the LOTT Board commits the partners to adopt any ordinance modifications within ninety (90) days of approval. This procedure insures uniformity of regulatory authority. In any case where any Director disagrees with an administrative action developed by the Executive Director as administrator of the Pretreatment Program, the LOTT Board shall make a determination concerning the dispute. The *Interlocal Agreement* provides that the partners will accept and follow the decision of a majority of the LOTT Board members in any such case.

The Director of Public Works for each partner jurisdiction is the local representative in applying the adopted regulations. All wastewater discharge permits, compliance schedules, enforcement orders and other documents directing dischargers to take action are signed by the Director of Public Works of the LOTT partner with jurisdiction over the discharger. The LOTT Executive Director also signs certain documents, such as permits and enforcement actions. The two signatures indicate that the document meets the requirements of the LOTT Industrial Pretreatment Program, and that the Partner will enforce the requirements.

The LOTT Pretreatment Program's historic focus on Significant Industrial Users and high-strength dischargers has been successful in meeting the requirements of 40 CFR Part 403 by preventing the introduction of pollutants into its wastewater treatment plant that could interfere with plant processes, impact receiving water, reclaimed water, or biosolids quality, and/or threaten workers' safety. In the last three years, there have only been four (4) permit violations involving Significant Industrial Users, and two (2) Minor Industrial User violations. No fines or penalties were assessed or deemed necessary during this time. Final effluent metals monitoring results compared favorably with state water quality standards for our receiving water, Budd Inlet. In addition, LOTT's biosolids metals monitoring results continue to be an order of magnitude below the Table 1 ceiling and Table 3 pollutant concentrations. Trends show domestic-contributed metals in the influent staying relatively constant, while industrial-contributed metals declining, some significantly. Most final effluent metals loading trends have stabilized at a low level, or show a steady decline.

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LOTT Clean Water Alliance
Biosolids/Septage/Residuals Management

Primary and waste activated sludge is thickened in a dissolved air flotation process and pumped into two 900,000 gallon anaerobic digesters. The digester contents are continuously re-circulated through heat exchangers and mixed every eight hours using coarse bubble gas diffusion. Digester temperature is monitored continuously and checked with daily grab samples. Volatile solids reduction is determined on a daily samples. This process meets the pathogen reduction – Class B requirements of Alternative 2 of WAC 173-308-170(3) (b) (iii), maintaining a temperature of 35°C (95°F) or greater with a residence time of 15 days or longer (LOTT’s biosolids residence time ranged from 26 to 107 days from 2011 through 2013). The process also meets the vector attraction reduction – land application requirements of WAC 173-308-180(2), achieving a reduction of volatile solids of no less than 38% (LOTT reduced volatile solids from 45% to 87% from 2011 through 2013). LOTT’s biosolids metals monitoring results are consistently all under the State’s Table 1 ceiling concentrations and Table 3 pollutant concentrations limits.

Class B Biosolids Production

YEAR	WET TONS	DRY TONS
2011	8,116.92	1,910.69
2012	7,716.13	1,780.10
2013	7,762.87	1,703.54

100% of Class B biosolids produced at LOTT’s Budd Inlet Treatment Plant during this time were sent to beneficial use facilities for direct land application to agricultural and forest lands in southwestern and eastern Washington. Risk management is incorporated into the biosolids program by ensuring that LOTT always has redundant options for biosolids reuse outlets. LOTT closely follows research, media, and policy related to biosolids to anticipate regulatory changes. In 2012-2013, LOTT explored the option of producing Class A biosolids product, but determined that the current Class B product is more cost-effective for the utility at this time.

The LOTT Clean Water Alliance is permitted through the *General Permit for Biosolids Management*, issued by the Department of Ecology. The permit governs to quality of the biosolids applied to the land or transferred to other facilities. Approximately 350 facilities in Washington are covered by the permit, including LOTT and the beneficial use facilities contracted to land-apply LOTT’s biosolids. The permit requirements include, but are not limited to addressing pollutant concentrations, pathogen reduction, vector attraction reduction, agronomic rates of application, methods and timing of application, buffers to wells and other sensitive areas, crop harvest restrictions, and site management and access.

LOTT’s Annual Biosolids reports are made available on its website at <http://www.lottcleanwater.org/pdf/biosolids.pdf> .

NACWA 2014 Excellence in Management Recognition Program
LOTT Clean Water Alliance
Climate Change Adaptation or Mitigation

The Budd Inlet Treatment Plant (BITP) is located downtown Olympia at the southernmost tip of Puget Sound and is vulnerable to sea level rise (SLR). Most of downtown Olympia is combined storm/sewer system and flooding results from high precipitation runoff when combined with a high tide that inundates major gravity storm drain systems.



The City of Olympia, a LOTT partner, is a national leader in the evaluation of sea level rise (SLR) with their first evaluation in 1993 - the [Preliminary Assessment of Sea Level Rise in Olympia Washington: Technical and Policy Implications](#). Based on the infrastructure investment in the downtown area, the community recognizes that the downtown must be defended from flooding. Mitigation strategies are proposed in the [City of Olympia's Engineered Response to Sea Level Rise Technical Report](#), completed in 2011. LOTT has deferred to the City as the lead agency for monitoring changes in the science and developing strategies to protect downtown. The City also conducts ongoing public outreach to raise awareness of SLR issues and gather public feedback regarding mitigation options. The City has sponsored several public seminars over the last three years on the topic to share their research and spur discussion.

LOTT continues to coordinate closely with the City in developing and evaluating mitigation strategies. LOTT is currently conducting a vulnerability assessment to evaluate specific issues at the Budd Inlet Treatment Plant facility that will be incorporated into the City-wide mitigation plan that is being developed. All LOTT capital projects consider the impact of climate change. The LOTT Regional Services Center, constructed in 2009, was elevated and additional one foot from the original ground surface to account for potential SLR.

Climate change will also result in an increase in the frequency and severity of storm events, which in turn impacts operations at the BITP. With the combined storm/sewer system, flows at the BITP normally averaging from 12-14 million gallons a day (MGD), have reached upwards of 70 MGD during severe storm events. Removing flow from the system before it gets to the treatment plant has been a focus of LOTT as it could help reduced costly capacity investments to manage these peak flows. LOTT has several programs and initiatives intended to reduce flows:

- LOTT has developed an [Inflow and Infiltration Funding program](#) to help enable I&I removal projects in the collection system. LOTT provides cost-share assistance to partner cities to complete I&I removal projects
- LOTT has implemented a regional water conservation/flow reduction program since 1997, and in 2012, reached its goal of reducing flows by over 1,000,000 gallons per day. The program continues through 2018, offering rebates and incentives to residential and commercial customers to complete water-saving retrofits of appliances and equipment
- In 2015, LOTT is initiating an assessment of alternatives for better managing influent flows to delay the need for additional treatment capacity and mitigate for peaks associated with combined sewers, SLR, and climate change.

NACWA 2014 Excellence in Management Recognition Program
LOTT Clean Water Alliance
Water Quality Protection on a Watershed Basis

LOTT is an active participant in watershed-based planning efforts. As the largest permitted wastewater discharge into Budd Inlet, LOTT works to minimize pollutant loading to the inlet and contributes to regional water quality and environmental enhancements. Examples of LOTT's efforts include:

- LOTT is one of the only treatment plants on Puget Sound that provides advanced secondary treatment of effluent to remove nitrogen, a key limiting factor in water quality, especially in Budd Inlet, at the southernmost tip of Puget Sound
- LOTT's long-range management plan includes expanded production of reclaimed water and infiltration of the water to replenish groundwater aquifers; LOTT's Reclaimed Water Infiltration Study is being conducted to ensure this approach is protective of public and environmental health; LOTT's recharge program helps to integrate water supply, wastewater management, and overall watershed planning
- LOTT is funding and facilitating a Regional Septic Work Group to explore strategies for converting urban-density septic systems to sewer to protect groundwater resources and better integrate water supply and wastewater management issues
- LOTT is continually acquiring land critical to future treatment and recharge capacity needs and strives to do so in ways that provide multiple community benefits
- LOTT is developing a Master Plan for over 40 acres of LOTT-owned property in the Deschutes River Valley; the plan will assess opportunities to improve habitat and public access along the river and mitigate flooding issues
- LOTT contributes to the purchase of lands and conservation easements through the local Capital Land Trust (CLT) to protect and improve habitats along Budd Inlet and surrounding watersheds; between 2006-2011, LOTT provided funding of \$454,000 to CLT for two major conservation acquisitions and provided CLT with a conservation easement a LOTT property
- LOTT approved \$40,000 of funding in 2013 to assist with the Squaxin Island Tribe's in-stream flow study on the Deschutes River to protect and enhance salmon habitat
- LOTT is continually assessing and implementing improvements to better handle peak flows during storm events; completion of new Primary Sedimentation Basins in 2013 created additional equalization storage in the old basins; LOTT purchased property adjacent to the main plant in 2012 for future additional equalization storage; staff are working to establish standard procedures to prevent CSOs; an influent flow management project will be initiated in 2015 to identify other opportunities to manage peak flows and avoid CSOs.
- LOTT assigns staff to serve as active members of interagency advisory and coordinating bodies including:
 - Deschutes River/ Capitol Lake/ Budd Inlet Total Maximum Daily Load Advisory Committee for the state-led TMDL effort
 - Alliance for a Healthy South Sound Council, the local implementing organization for the state's Puget Sound Partnership, addressing Puget Sound water quality issues
 - Environmental Education Technical Advisory Committee, with local government and nonprofit organization representatives coordinating environmental education programs
 - Sustainable Thurston and Thurston Thrives, two county-wide efforts to establish and implement a sustainability plan that addresses social, environmental, and economic issues