

3 – WASTEWATER MANAGEMENT IN NORTH THURSTON COUNTY

This chapter summarizes how responsibility for regional wastewater management is shared among local jurisdictions. It gives an overview of Olympia’s collection and transmission system; the role of the City, County and private sector; and interconnections with neighboring cities. It also describes the LOTT Alliance current and planned regional facilities for transmission, treatment and reclamation. Challenges and issues arising from this regional management system are identified.

RESPONSIBILITY FOR WASTEWATER MANAGEMENT

In the urban growth area of north Thurston County, wastewater management responsibility is shared among Thurston County, the cities of Olympia, Lacey and Tumwater, and the LOTT Alliance, which represents all four major jurisdictions. The cities are responsible for providing the infrastructure that collects wastewater from homes and businesses and conveys it to LOTT facilities for treatment and disposal or reclamation. Sewers are extended into unincorporated parts of the urban growth area by interlocal agreement with Thurston County. These extensions are primarily funded by private development projects. When complete, these privately constructed systems of gravity pipes, pumps, force mains and STEPs are transferred to City ownership and operated and maintained by Wastewater Utility staff.

Outside the urban growth area several smaller jurisdictions and neighborhoods, including the City of Yelm, manage their own wastewater collection and treatment.

Privately owned individual and community onsite sewage systems collect and treat wastewater for about one-quarter of the Urban Growth Area, where public sewer service has not been required or provided. These systems are regulated by the Thurston County Board of Health. The County Environmental Health Division is responsible for reviewing permit applications for new onsite sewage systems and repair or expansion of existing systems. The County also inspects onsite systems prior to property transfer, on a voluntary basis. The County assesses applications based on site-specific treatment standards and system design to meet the standards. The County also maintains onsite system records. See also Chapter 4, section on Thurston County.

The City has no responsibility for owning, maintaining, or managing private individual onsite systems. However, the City reviews onsite sewage system applications and may determine requirements for connection to public sewers. The City is responsible for owning and maintaining community onsite systems within the City and its Urban Growth Area, and is increasingly reluctant to take on this responsibility. Olympia maintains the three community systems approved after 1990, and is reviewing several other proposed community systems.

Property owners are responsible for owning and maintaining individual onsite systems. The County Health Code requires owners of larger or more complex systems to have them certified and inspected every 1-3 years. Owners of individual conventional gravity systems are required to maintain them and submit inspection reports every three years, but this is not actively enforced.

COLLECTION AND TRANSMISSION SYSTEM

Within its Urban Growth Area, the City of Olympia is responsible for collecting wastewater from residences and businesses and piping it to the LOTT transmission mains. Wastewater flows through these mains to LOTT's facility near the Port of Olympia for treatment and discharge to Budd Inlet, or is reclaimed for beneficial uses. The City owns and operates public facilities and regulates the construction of new facilities by private developers.

Olympia's wastewater management system has five components, illustrated in Figure 3.1.

- ***Gravity sewers.*** The City owns and operates about 166 miles of gravity sanitary sewer pipes, linked by over 4,700 manholes. See Chapter 5 for details.
- ***Pump stations and force mains.*** The City owns 27 pump stations and operates three other privately owned pump stations; two additional pump stations in Olympia are operated by LOTT to serve interceptor mains. Pump stations pump wastewater under pressure from a lower elevation to a higher elevation through force mains and discharge it to a gravity pipe for further conveyance downstream. See Chapter 5 for details.
- ***Septic Tank Effluent Pump (STEP) systems.*** Over 1,500 residential and commercial STEP systems are currently in use, mostly located in northeast and southeast Olympia. STEP systems retain effluent solids in an onsite tank and pump the liquid to a neighborhood collector pipe prior to discharge to a gravity system. These alternative systems are financed and constructed by developers and owned and operated by the City. See Chapter 6 for details.

- **Individual onsite sewage systems.** There are approximately 4,000 onsite sewage systems in Olympia and its UGA. Property owners are responsible for maintaining these systems. See Chapter 7 for details.
- **Community onsite sewage systems.** Three community onsite sewage systems, installed since 1990, are owned and operated by the City. See Chapter 7 for details.

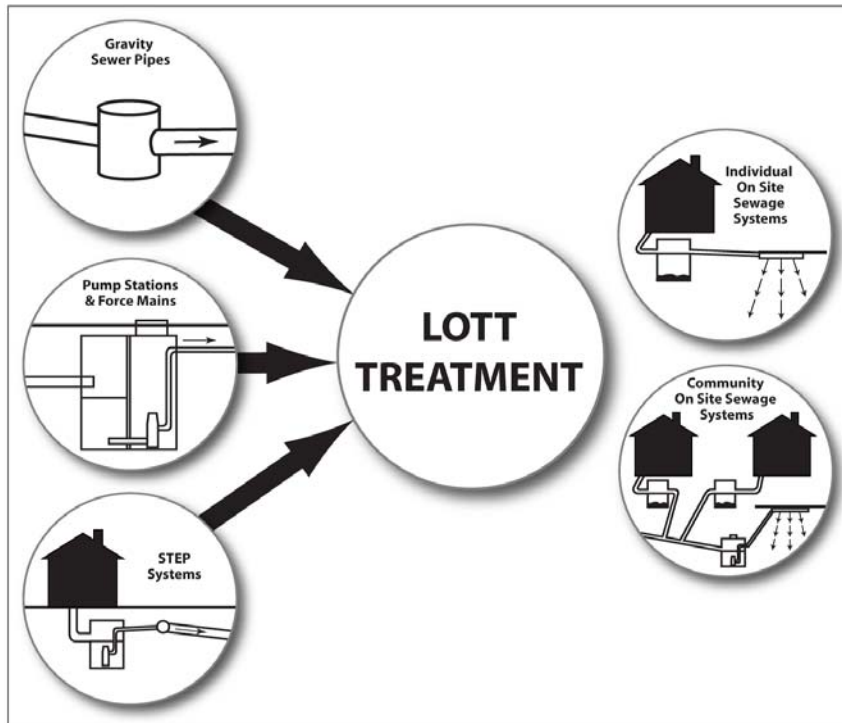


Figure 3.1. Components of Olympia's Wastewater Management System

Neighboring Jurisdictions

The City coordinates regional wastewater issues with neighboring jurisdictions through the LOTT Alliance staff and board of elected officials. Specific development proposals located within the UGA are coordinated by planners and engineers at the staff level with oversight by the hearing examiner. Common operational and maintenance issues are routinely handled with field staff coordination as needed.

There are a few instances of crossover between Olympia's sewer system and the Lacey and Tumwater systems, particularly in areas where city boundaries are complex. Two examples are the region surrounding South Puget Sound Community College, where some Tumwater pipes serve Olympia customers, and the region north of North Street and East of Capitol Boulevard, where the Olympia and Tumwater border is highly complicated. Another is the Motel 8

pump station, which is owned and operated by Olympia, located in Lacey, receives flow from Lacey customers and discharges to Olympia's gravity system.

Coordination with the neighboring jurisdictions will grow increasingly important as the LOTT Alliance decentralizes wastewater treatment into satellite reclamation facilities. These facilities will require flow diversion schemes that may, for example, direct flow generated in the City of Olympia into City of Lacey sewers to reach a satellite plant located in Lacey. The timing and phasing of LOTT satellite plant construction will depend upon flow availability and diversion of flow from each of the LOTT partners.

Private Sector

For new development, private developers design and construct sewer system extensions to City standards, and City staff supervises construction. Private funds are used to construct these improvements with the potential for cost recovery from future upstream users of the system. The City may choose to contribute funding to construct oversized pipes in anticipation of future development.

Depending on site-specific considerations, a developer may be required to install gravity systems with regional pump stations as needed or may be allowed in some cases to install individual or community onsite sewage systems. Since July 2005, STEP systems and grinder pumps have not been permitted in Olympia and its UGA.

WASTEWATER TREATMENT

The LOTT Alliance provides wastewater treatment and reclaimed water production services for the urbanized area of north Thurston County. Its four government partners (Lacey, Olympia, Tumwater and Thurston County) formed the LOTT partnership in 1975 to jointly construct and operate wastewater treatment facilities. In 2001 the partnership was reorganized as the LOTT Alliance, an independent agency, with a governing board representing the four jurisdictions. A City Council member represents Olympia on the LOTT Alliance governing board. The four local Public Works Department directors serve on a technical advisory committee. Individual project issues are resolved at a staff level.

LOTT Facilities

The LOTT Alliance currently serves an area of 82 square miles, of which approximately 36 square miles are sewerred. LOTT's member jurisdictions provide sewer service to a total of over 94,000 people. In addition, the LOTT Alliance serves over 13,000 commercial and industrial customers.

LOTT's facilities currently include the central Budd Inlet Treatment Plant, the new Hawk's Prairie satellite water reclamation facility in Lacey, major interceptor sewer lines, and three pump stations. A second satellite facility is planned for the Chambers Prairie area of Lacey.

The treatment of wastewater has progressed from primary treatment for solids to tertiary treatment that meets and exceeds contemporary industry standards. Starting in 2006, portions of the final plant effluent has been treated and recycled for irrigation and industrial uses.

About 15 miles of LOTT's interceptor mains and three pump stations are located in Olympia. Interceptors are located on Martin Way and Capitol Way, along Indian and Percival creeks, along Black Lake and Cooper Point roads, and around Capitol Lake. In many cases, the City of Olympia's sewer system connects directly into the LOTT interceptors, meaning that any potential problems or capacity-related issues affecting the LOTT system may directly impact City residents.

Regional Wastewater Resource Management Plan

LOTT's long-range Wastewater Resource Management Plan (1998) sets the stage for a decentralized approach to wastewater management in the Lacey-Olympia-Tumwater urban growth area. As population grows and demand for wastewater treatment increases, LOTT will be recycling the additional wastewater instead of discharging it into Budd Inlet. Wastewater will be treated to Class A Reclaimed Water standards and re-used for non-potable purposes and groundwater recharge. As development occurs, small units of treatment capacity will be added to be ready "just in time." During the time needed to plan, design and build new recycling facilities, additional wastewater will be handled through reserve capacity in the Budd Inlet Treatment Plant for discharge to Budd Inlet, and ongoing flow reduction projects.

LOTT's first production of Class A Reclaimed Water began in 2005 with completion of the Reclaimed Water Facility at the Budd Inlet Treatment Plant. Distribution of reclaimed water to customers began in 2005. Construction of the first satellite facility, the Hawks Prairie Reclaimed Water Satellite in Lacey, began in 2004 and will be completed in 2006. It will divert wastewater flows from Lacey that would otherwise have been conveyed to the Budd Inlet Treatment Plant. Initially, the satellite will add two million gallons per day (mgd) of treatment capacity, expandable to five mgd. Groundwater recharge basins in northeast Lacey will provide at least five mgd of recharge capacity. A second satellite facility is planned for the Chambers Prairie area of Lacey.

LOTT's Wastewater Resource Management Plan is considered a "highly managed plan" because it requires continual monitoring and planning. To identify changes or additions to planned capital projects or programs, LOTT annually analyzes flow and capacity – including treatment capacity, capacity to use or discharge treated water, and conveyance pipeline capacity.

To meet its facility plan requirements for wastewater treatment, the City of Olympia incorporates the LOTT Wastewater Resource Management Plan by reference into this Wastewater Management Plan. This was authorized April 10, 2001 by Olympia City Council adoption of Ordinance 6097, which states:

"The Olympia City Council hereby approves the LOTT Wastewater Resource Management Plan's Highly Managed Alternative, of November 1998, and directs that said Plan be incorporated into the City's Comprehensive Plan and General Sewer Plan at the time of the next update."

LOTT Capital Improvement Projects in Olympia

LOTT's current Capital Facilities/Improvement Plan (2005–2025) includes several new LOTT projects in Olympia in addition to ongoing upgrades to the Budd Inlet Treatment Facilities. These projects will include improvements to interceptor mains and pumps for the Westside/Kaiser Road/Grass Lake, Percival Creek, and Henderson Boulevard/Indian Creek systems. LOTT will evaluate the need for additional projects annually. These projects will continue to support existing sewer conveyance programs in Olympia.

LOTT Programs and Services

In addition to wastewater treatment, LOTT Alliance services include flow management, reclaimed water production, long-range planning, financing, and design and construction of capital facilities. Other programs are described below.

Water Conservation

To encourage water conservation, the LOTT Alliance offers financial rebates and free devices to help reduce the amount of water going "down the drain" to the treatment plant. Programs are offered in coordination with the Lacey, Olympia, and Tumwater water conservation programs.

Industrial Pretreatment

LOTT's Industrial Pretreatment Program is designed to prevent pollutants from entering public treatment facilities that could interfere with operations, impact receiving water or biosolids quality, or threaten workers' safety.

Through regulations appended to the LOTT Interlocal Agreement (2000), the four LOTT partner jurisdictions have adopted identical pretreatment ordinances which are enforced by the LOTT Alliance (see Olympia Municipal Code Title 13 Chapter 20).

LOTT requires that discharges from permitted facilities meet industrial user permit requirements based upon federal categorical pretreatment standards and local limits. The pretreatment program includes provisions for monitoring, reporting and enforcement to ensure that potentially harmful substances are not introduced into the wastewater system. The program is updated as new users seek connections to the system, or as existing users change the pattern, quantity, quality or composition of discharge.

Of the 12 industries permitted for discharge to the Budd Inlet Treatment Plant, five are located within the City of Olympia. These industries have exhibited a high level of compliance in 2004 and 2005 (LOTT State of the Utility Report 2006). Table 3.1 lists the Olympia industries currently subject to industrial user wastewater discharge permits under the LOTT pretreatment program.

Table 3.1. LOTT Alliance Industrial Pretreatment Permittees in Olympia

Industry	Product	Average Discharge (gpd)
Crown Cork & Seal, Inc.	Aluminum Cans	20,000
Georgia-Pacific Corp.	Cardboard	2,500
J.R. Setina Manufacturing. Co., Inc.	Vehicle Accessories	0 ¹
Roy's Designs, Inc.	Metal Coatings	0 ¹
Fish Brewing Co.	Beer (high BOD)	1,500

¹ Zero discharge facilities with the potential for hazardous or non-permitted discharges are required to have an industrial user permit.

Emergency Response

In 2006, Olympia and the other LOTT partners signed identical Memoranda of Understanding with the LOTT Alliance committing themselves to provide mutual assistance in the event of a sewer overflow involving assets owned by either LOTT or member jurisdictions. At the same time, LOTT adopted the Sanitary Sewer Overflow Emergency Response Plan documenting procedures LOTT and member jurisdictions will follow to protect public and environmental health and safety. To document specific procedures for Olympia, the City is developing its own Emergency Response Plan (see Appendix C-4).

OTHER PUBLIC AND PRIVATE TREATMENT FACILITIES

In addition to the existing and planned LOTT facilities, about 13 domestic or industrial sewage treatment plants (STPs) are located within 20 miles of the LOTT service area (see Figure 3.2). Of these, only the Tamoshan/Beverly Beach and Boston Harbor Treatment Plants, serving small beach communities, fall within the Deschutes River Watershed.

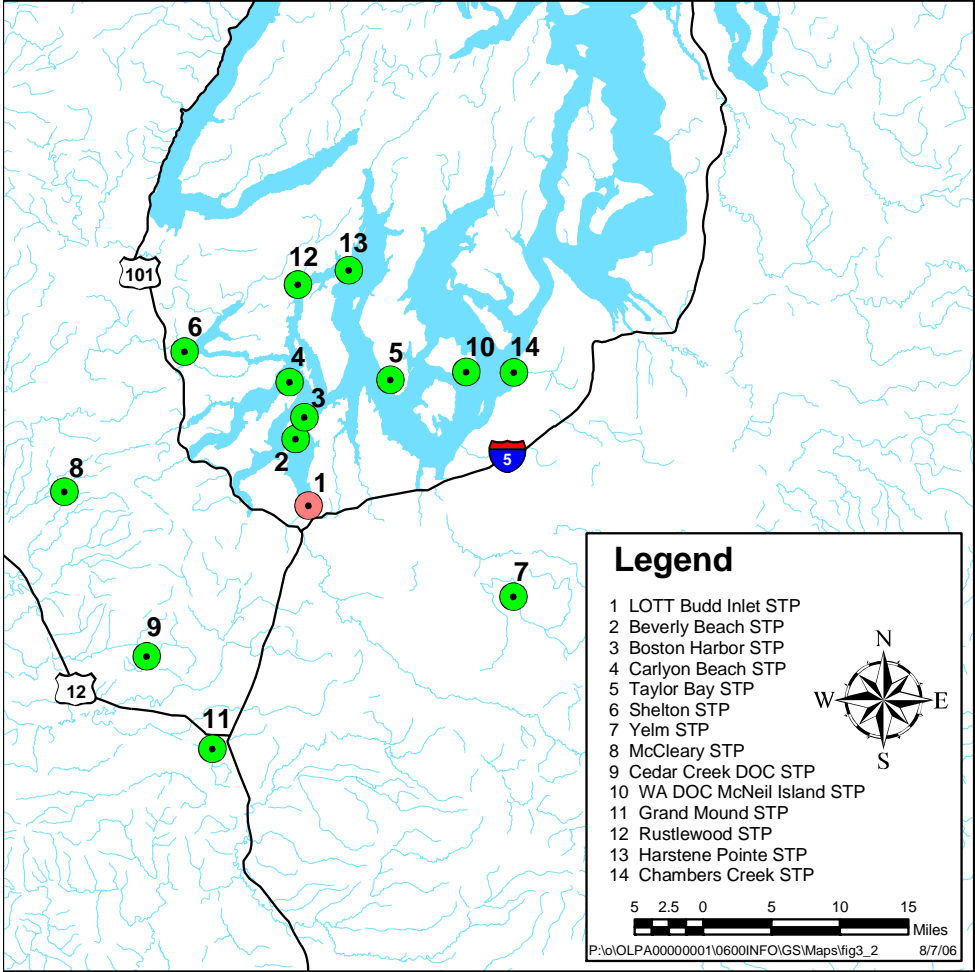


Figure 3.2. Wastewater Treatment Plants within 20 Miles of the LOTT Service Area

CHALLENGES AND ISSUES

Because responsibility for managing wastewater services and infrastructure in the South Sound is shared among the local jurisdictions and the LOTT Alliance, Olympia’s Wastewater Utility is a partner in helping resolve regional issues. Several of these issues are discussed below.

Technical Coordination within the LOTT Alliance

While the LOTT Alliance coordinates regional facility planning and issues at a policy level, there is a need for better planning and technical level coordination among Wastewater Utility managers in the local jurisdictions. Similarly, Olympia's wastewater planning, construction and maintenance activities are to some extent tied to LOTT's wastewater conveyance and treatment operations; Olympia's technical staff needs to be more involved in long-term issues with LOTT Alliance staff.

Sewer Service Areas

The sewer service areas of the three local municipalities meet and in some places overlap because of topography. In some cases, the efficiency of both systems may be improved by reconsidering which jurisdiction provides the connections.

Onsite Sewage System Management

The Thurston County Environmental Health Division implements onsite septic system regulations for the local municipalities. Coordination with County staff is increasingly important as Olympia seeks to further limit the use of onsite systems within the City and its UGA. Also, current State and local policies and regulations are complex and could be improved for greater clarity.

