



NPDES Waste Discharge and Reclaimed Water Permit No. WA0037061 Combined Sewer Overflow Report

2017

This submittal of the LOTT Clean Water Alliance Combined Sewer Overflow Report demonstrates the implementation by the LOTT Clean Water Alliance (LOTT) and the City of Olympia of the controls listed in S11.B.1–9 of NPDES Permit No. WA0037061, issued to LOTT on February 16, 2018. As of the end of 2017, LOTT had experienced only two (2) combined sewer overflow (CSO) events since April 1991 (see attached table). These events occurred on December 3, 2007, and January 7-8, 2009, and were the result of severe storm events in which over five (5) inches of rainfall fell in a 24-hour period. No combined sewer overflow events occurred in 2016. The following responses reflect this performance and are numbered to correspond with S11.B.1 – 9:

1. The combined sewer systems discharging to the Budd Inlet Treatment Plant are located within the City of Olympia in the older downtown areas south to the Capitol neighborhoods and in select areas of East Olympia. The following are CSO-related projects completed by the City of Olympia within the last fourteen (14) years:
 - July 2002 – At 7th Avenue & Columbia Street, a stormwater overflow to the sanitary sewer was found and removed. It is unknown how long this overflow existed or how often it was active.
 - December 2003 – At Capitol Way & Olympia Avenue, a stormwater pipe running north through a sanitary sewer manhole was found leaking into the sanitary sewer and was repaired. In addition to stormwater flows, this pipe conveys an estimated thirty (30) gallons per minute of artesian spring water year-round. These flows were removed from the sanitary sewer system with this repair.
 - July 2004 – At Union Avenue & Cherry Street, a combined sewer overflow pipe was found and removed.
 - December 2004 – At 16th Avenue & Jefferson Street, a combined sewer overflow pipe was found and removed.
 - Summer 2004 – Near 25th Avenue & Washington Street, stormwater pipes and catch basins were installed, removing approximately 4.5 acres from the combined sewer system.
 - June 2005 – At Vista Street & Maringo Road, stormwater pipes, catch basins, and drywells were installed, removing approximately 0.5 acres from the combined sewer system.
 - December 2006 – Began investigating sources of stormwater inflow in the West Bay area of Olympia. As a result, projects were scheduled for 2008 to remove these sources, and to install control mechanisms and pump station improvements to improve the hydraulic capacity in the area.
 - October 2007 – Repaired and increased the capacity of the Lilly Road sewer interceptor.
 - December 2007 – Replaced failing and outdated control equipment with new variable frequency drive to operate one of the 13,000 gallon per minute combined sewage pumps at the Water Street Pump Station.

- October 2008 — 60% design for rerouting the West side sewer interceptor to provide additional conveyance capacity was achieved. This existing interceptor overflows to the West Bay pump station, and has been identified as needing additional capacity.
- November 2008 — Failing control equipment at the Water Street pump station was replaced with a new variable frequency drive (VFD), and the drive motor operating the second of the 13,000 GPM combined sewage pumps was rebuilt.
- December 2008 – East Bay pump station was completely rebuilt, with the exception of the wet well, which was relined.
- December 2008 – The Division and Jackson Street pump station was replaced completely.
- December 2008 – A consultant was hired to prepare a preliminary design for rebuilding the West Bay pump station.
- Throughout 2009 – Televised and condition-rated more than 90% of all critical sewer mains in CSO drainage basins, identifying structural defects and maintenance problems.
- Throughout 2009 – Completed eight (8) spot repairs for structural defects of sanitary sewer mains in CSO drainage basins.
- Throughout 2009 – Replaced sixteen (16) manhole castings in CSO drainage basins.
- April 2009 – Disconnected a stormwater catch basin on Orchard Drive from the sanitary sewer.
- September-November 2009 – Completed construction of the West Side Interceptor (2,000 feet of 18” and 21” sewer interceptor), providing additional capacity to convey flow from the west side and reduce the potential of flow diversion to the West Bay pump station where overflows have been observed in the past.
- October-November 2009 – Completed rehabilitation of 2,500 linear feet of sewer main and grouting of nineteen (19) sewer taps along Crestline Drive in the West Bay basin where inflow and infiltration has been observed in the past.
- November 2009 – Installed a bypass pump to provide additional flow capacity for the West Bay pump station during wet weather.
- 2010 – the City of Olympia focused on the West Bay and downtown Olympia CSO drainage basins:
 - ❖ Televised and condition rated more than 120,000 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 198,000 linear feet of sanitary sewer mains, and sixty-eight (68) lift stations.
 - ❖ Completed twenty-one (21) trenchless repairs and eighty-three (83) spot repairs on gravity sanitary sewer mains, addressing structural defects and infiltration issues.
 - ❖ Performed repairs or rehabilitations to eleven (11) sanitary sewer manholes.
- 2011 – the City of Olympia completed the following maintenance activities involving their sanitary sewer collection system, much of which was performed in their combined sewer drainage basins:
 - ❖ Televised and condition rated more than 161,000 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 199,000 linear feet of sanitary sewer mains, and thirty-four (34) lift stations.

- ❖ Completed thirteen (13) trenchless repairs and thirty-three (33) spot repairs on gravity sanitary sewer mains, addressing structural defects and infiltration issues.
- ❖ Completed 1,791 linear feet of cured-in-place-pipe rehabilitations on gravity sewer mains from 6 to 15 inches in diameter, addressing structural defects and infiltration issues.
- ❖ Inspected eighty-nine (89) sanitary sewer manholes, replacing, or performing repairs/rehabilitations to nine (9) of them.
- 2012 – the City of Olympia completed the following maintenance activities involving their sanitary sewer collection system, much of which was performed in their combined sewer drainage basins:
 - ❖ Televised and condition rated more than 140,000 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 163,533 linear feet of sanitary sewer mains, and seventy-five (75) lift station wet wells.
 - ❖ Completed ten (10) trenchless repairs and thirty-six (36) sewer spot repairs on gravity sanitary sewer mains, addressing structural defects and infiltration issues.
 - ❖ Installed approximately 3,000 linear feet of 12-inch sewer force main by City contract, replacing the existing 8-inch AC force main for the West Bay Lift Station.
 - ❖ Inspected ninety-five (95) sanitary sewer manholes, performing repairs/rehabilitations to ten (10), and replacing nine (9).
 - ❖ Installed an onsite emergency power generator at the Roosevelt and Yew Lift Station.
 - ❖ Upgraded the capacity of the Goldcrest Lift Station by adding a second wet well.
- 2013 – the City of Olympia completed the following maintenance activities involving their sanitary sewer collection system, much of which was performed in their combined sewer drainage basins:
 - ❖ Televised and condition rated more than 115,000 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 182,642 linear feet of sanitary sewer mains
 - ❖ Cleaned twenty-three (23) lift station wet wells three (3) times.
 - ❖ Completed thirty-eight (38) sewer spot repairs, including eighteen (18) trenchless repairs, on gravity sanitary sewer mains, addressing structural defects and infiltration issues.
 - ❖ Inspected two hundred and twenty-five (225) sanitary sewer manholes, performing repairs/rehabilitations to thirty-two (32), and replacing thirteen (13).
 - ❖ Replaced three hundred and seventeen (317) feet of sanitary sewer piping.
 - ❖ Installed an onsite emergency power generator at the Roosevelt and Yew Lift Station.
 - ❖ Increased the capacity and improved the reliability of the West Bay Lift Station by replacing the pumps, controls and emergency generator.
 - ❖ Upgraded the capacity of the Holiday Hills Lift Station by adding a second wet well.
 - ❖ Improved the reliability of the Woodcrest Lift Station by replacing the pumps and upgrading the telemetry.
 - ❖ Conducted a study, in January 2013, to identify potential connections between the storm sewer and sanitary sewer systems. Each of the identified possible cross connections was investigated and eliminated as necessary.

- 2014 – the City of Olympia completed the following maintenance activities involving their sanitary sewer collection system, some of which was performed in their combined sewer drainage basins:
 - ❖ Televised and condition rated more than 93,000 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 240,000 linear feet of sanitary sewer mains
 - ❖ Cleaned 23 lift station wet wells three times.
 - ❖ Completed 14 sewer spot repairs, including 7 trenchless repairs, on gravity sanitary sewer mains, addressing structural defects and infiltration issues.
 - ❖ Inspected 185 sanitary sewer manholes, performing repairs/rehabilitations to 45 and replacing 4.
 - ❖ Replaced 175 feet of sanitary sewer piping.
 - ❖ Increased the capacity and improved the reliability of the Black Lake Lift Station by replacing the lift station.
- 2015 – the City of Olympia completed the following maintenance activities involving their wastewater collection system, some of which was performed in their combined sewer drainage basins:
 - ❖ Televised and condition rated more than 136,000 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 206,000 linear feet of sanitary sewer mains
 - ❖ Cleaned 32 lift station wet wells two to four times each.
 - ❖ Completed 29 sewer spot repairs, including 13 trenchless repairs, on gravity sanitary sewer mains, addressing structural defects and infiltration issues.
 - ❖ Inspected 566 sanitary sewer manholes, performing repairs/rehabilitations to 54 and replacing 3.
 - ❖ Completed 6,080 linear feet of cured-in-place-pipe rehabilitations on gravity sewer mains from 6 to 10 inches in diameter, addressing structural defects and infiltration issues.
- 2016 – the City of Olympia completed the following maintenance activities involving their wastewater collection system, some of which was performed in their combined sewer drainage basins:
 - ❖ Televised and condition rated more than 154,770 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 232,350 linear feet of sanitary sewer mains
 - ❖ Cleaned 31 lift station wet wells two or four times each.
 - ❖ Completed 27 sewer spot repairs, including 16 trenchless repairs, on gravity sanitary sewer mains, addressing structural defects and infiltration issues.
 - ❖ Inspected 930 sanitary sewer manholes, performing repairs/rehabilitations to 43 and replacing 1.
- 2017 – the City of Olympia completed the following maintenance activities involving their wastewater collection system, some of which was performed in their combined sewer drainage basins:
 - ❖ Televised and condition rated 158,940 linear feet of sanitary sewer main, identifying structural defects and maintenance problems.
 - ❖ Cleaned approximately 245,540 linear feet of sanitary sewer mains
 - ❖ Cleaned and inspected 31 lift stations

- ❖ Completed 77 sewer repairs including 23 trenchless repairs
- ❖ Inspected 817 sanitary sewer manholes, performing repairs/rehabilitations to 33 and replacing one.
- ❖ Eliminated one illicit connection – 1011 10th Ave.

The State & Chestnut Streets CSO outfall (Outfall 003) is located along a LOTT-owned interceptor, and is maintained by LOTT. The Water Street CSO outfall (Outfall 004) is located at the City of Olympia's Water Street Pump Station, and is maintained by the City. The State & Chestnut Street outfall has been sealed, and the Water Street outfall is inoperative, eliminating the possibility of CSOs occurring at these locations. The Fiddlehead Outfall (002) is utilized by the City of Olympia as a year-round stormwater outfall. LOTT maintains the pumps, hydraulic slide gate, and all associated control mechanisms within the Budd Inlet Treatment Plant required to divert effluent to this outfall. This equipment is exercised annually, and performed flawlessly during the December 3, 2007, and January 7-8, 2009, CSO events.

LOTT initiated a Memorandum of Understanding with the partner cities in 2005 to optimize responses to sanitary sewer overflows (SSO) in the LOTT service area, including CSOs. In a related effort, LOTT entered into a reciprocal agreement with the State of Washington Department of Transportation in order to increase the availability of equipment, personnel, and other resources for SSO responses.

2. LOTT's Budd Inlet Treatment Plant's flow equalization basins have a maximum capacity of 2.25 million gallons. Up to 2.16 million gallons of storage can also be available in the first anoxic basins after October if they have been taken off-line. In addition, two first aeration basins, with a combined capacity of 4.32 million gallons, are normally available for storage during wet weather months unless a power outage prevents pumping. Procedures have been developed to maximize the effectiveness of these flow equalization and storage options. All of this capacity was utilized during the December 3, 2007, and January 7-8, 2009, CSO events.
3. All of the significant industrial users permitted by the LOTT Pretreatment Program have the ability to temporarily store their process wastewater discharge if there is a risk of overwhelming wet weather flows being received at the Budd Inlet Treatment Plant.
4. The flow equalization and storage options at the Budd Inlet Treatment Plant described above have been utilized successfully, resulting in only two CSO events occurring since April 1991.
5. No dry weather overflows have ever occurred at LOTT's permitted CSO outfalls.
6. LOTT has operated the Budd Inlet Treatment Plant successfully to assure that all wet weather flows received the maximum treatment possible, with only two CSO events occurring in the last twenty-five (25) years. Influent pump hydraulic improvements, the enlarging and installation of additional influent gates to each primary basin, and the removal of restrictions to the primary effluent launders were completed in 1994, substantially improving LOTT's capability to convey and treat high wet weather flows. Also, LOTT

increased its emergency power generating capacity in 2005 to include powering all the influent screens and influent pumps. The five-millimeter screens are extremely efficient at removing visible floating material and debris. The 2005 upgrade allowed LOTT to operate all four of its influent pumps in the event of a power outage, compared to only one pump previously. In the event of a CSO, LOTT uses every treatment and flow conveyance option available to minimize the discharge of solid and floatable materials.

7. The LOTT Pretreatment Program has been successful in significantly reducing the loadings of metals and other pollutants discharged to the sanitary sewer, reducing the impacts of potential CSOs on Budd Inlet.
8. LOTT staff responsible for public outreach are experienced in notifying the public, both directly and in conjunction with partner jurisdictions, of significant environmental issues. In addition, LOTT laboratory staff has extensive receiving water monitoring experience that can be utilized to track the effects of a CSO on Budd Inlet water quality, should one occur.
9. LOTT has developed CSO response procedures and maintains response kits in the event a CSO occurs. These procedures include: sampling instructions, required equipment, record keeping instructions (location, number, frequency, duration), and notification instructions, which include contact information for the Washington State Department of Ecology, Washington State Department of Health (Food Safety and Shellfish Division), and Thurston County Environmental Health. These procedures were implemented successfully during the December 3, 2007, and January 7-8, 2009, CSO events.

LOTT is aware of the following designated uses of Budd Inlet south of Priest Point Park, assigned by the State of Washington and listed in Chapter 173-201A-612 WAC:

- A. Aquatic life uses – Good: Good quality salmonid migration and rearing; other fish migration, rearing, and spawning; clam, oyster, and mussel rearing and spawning; crustaceans and other shellfish (crabs, shrimp, crayfish, scallops, etc.) rearing and spawning.
- B. Recreational uses – Secondary contact recreation.
- C. Miscellaneous uses:
 - Wildlife habitat
 - Harvesting – Salmonid and other fish harvesting, and crustacean and other shellfish (crabs, shrimp, crayfish, scallops, etc.) harvesting
 - Commerce & navigation
 - Boating
 - Aesthetic values