

SERVICE

Wastewater & Treatment

Who We Are

The City operates, sustains, expands and improves the wastewater and stormwater infrastructure to efficiently provide reliable and environmentally sound wastewater and drainage collection and conveyance services to customers for all residential, industrial, commercial and institutional needs, while also providing education and encouraging a shared watershed-based management approach. This service is responsible for the planning, engineering and design functions for all sanitary and stormwater infrastructure, the operation and maintenance of the City's stormwater and sanitary sewer collection networks and the operation and maintenance of the City's wastewater treatment plants and pumping stations.

What We Do

The concept of One Water involves the management of water from all sources supportively to meet economic, social and environmental needs. That means protect all water first, conserve it secondly and lastly treat it. Water is valued as a resource to be recovered.

Why We Do It

Mandatory – The provision of effective wastewater and stormwater management is critical to ensuring the public health and safety of residents and protection of the natural environment. All major urban Ontario municipalities have established stormwater and wastewater systems in accordance with the Province's Environmental Compliance Approval process. Municipalities are required to meet the requirements of their specific Environmental Compliance Approvals and meet all other requirements outlined in legislation including the Ontario Water Resources Act, the Municipal Drainage Act and Clean Water Act and their associated regulations.

\$1.78
per day

for the average residential ratepayer
(avg. 2020 to 2023) using 200 m³ of
water per year with 16 mm
connection.

The following table provides an overview of the budget for the service:

Budget Summary (\$000's)	2020	2021	2022	2023	2020-2023 TOTAL
Gross Operating Expenditures	\$106,500	\$109,938	\$113,668	\$117,545	\$447,651
Other Revenues	\$106,500	\$109,938	\$113,668	\$117,545	\$447,651
Net Tax Levy Supported Operating Budget	\$0	\$0	\$0	\$0	\$0
Total Capital Expenditures	\$86,961	\$86,821	\$100,179	\$93,300	\$367,261
Full-Time Equivalents (FTE's)	195.2	195.7	195.7	195.7	

Reflects 2020 – 2023 Housekeeping Budget Adjustments up to August 31, 2020.

The following section provides an overview of the key activities the service intends to undertake from 2020-2023 to implement the Corporation's 2019-2023 Strategic Plan, as well as an overview of the risks and challenges the service is anticipated to experience during this period:

Service Highlights 2020-2023
<ul style="list-style-type: none"> • <u>Canada-Ontario Lake Erie Action Plan</u> - The Great Lakes Water Quality Agreement requires the United States and Canada to reduce phosphorus levels that contribute to algal blooms in Lake Erie by 40% based on levels measured in 2008. The Thames River Watershed has been identified as a priority watershed. The final Canada-Ontario Lake Erie Action Plan was issued by the Federal government in February 2018. The plan includes a series of specific actions to be undertaken by the City of London that were endorsed by Council in Q4-2017. • <u>Pollution Prevention and Control Plan</u> - The Pollution Prevention and Control Plan is London's long-term strategy to identify, investigate and reduce sewer system overflows. This plan includes \$290M worth of projects to be implemented over a 20 year period. • <u>East London Sanitary Servicing</u> - The East London Sanitary Servicing Study had identified a plan to provide growth wastewater servicing to east London. The work includes completing the connection between the Pottersburg-Vauxhall Wastewater Treatment Plants and increasing the capacity at the Vauxhall Plant. • <u>Core Area Servicing Studies</u> - The Core Area Servicing Studies provide a plan to provide servicing for intensification related development within the built out City. The plan includes \$176M in stormwater and wastewater works with a City funded share of \$111M. • <u>Computerized Maintenance Management System</u> – The recently rolled out Computerized Maintenance Management System (Cityworks) work order software will be implemented and integrated into daily tasks, to optimize staff efficiencies while documenting operational and maintenance activities.

- Wastewater Treatment Environmental Assessment Master Plan Study - Several wastewater treatment facilities will be approaching the end of their service life over the next 20 to 40 years and will eventually be replaced with new more technologically modern and efficient technologies. This master plan will provide a high-level roadmap outlining how interim upgrades and expansions can be co-ordinated with the replacement of these end of life assets over time.
- Wastewater Treatment Plant Flood Protection - The Adelaide and Greenway Plants are vulnerable to flooding given their proximity to the river and the higher river levels associated with climate change. Berms and effluent pumping are planned to protect these plants and ensure they remain operational during high river events.
- Combined Sewer Separation – The Combined Sewer Separation Program will continue in the downtown core over the Multi-Year Budget period. This program not only replaces the oldest sewers in London but also supports intensification in the core and fulfills commitments made in the Canada-Ontario Lake Erie Action Plan and the Pollution and Prevention Control Plan. Phase 3 will be constructed in 2020 to replace an 1853 vintage combined sewer on Richmond Street between York and Dundas.
- Pottersburg Sanitary Trunk Sewer - The 1955 Pottersburg Sanitary Trunk Sewer runs from Clarke Road in the east to First Street in the west. This trunk sewer crosses Pottersburg Creek nine times over that distance and is in poor condition. During Multi-Year Budget period, Wastewater and Drainage Engineering will complete the necessary Municipal Class Environmental Assessment for the trunk sewer realignment.
- Rapid Transit Coordination – Over the Multi-Year Budget period, the infrastructure renewal program will be coordinated with the Rapid Transit program to support the renewal of infrastructure nearing or at the end of life along Rapid Transit corridor.
- Stormwater Pond Maintenance – The Sewer Operations team will continue to develop and implement more effective stormwater management facility maintenance and rehabilitation programs to improve the quality of water discharging into natural water courses including the Thames River.
- Dingman Creek Environmental Assessment – Over the Multi-Year Budget period, a comprehensive Stormwater Servicing Strategy within the Dingman Creek Subwatershed will be developed to support growth in South London within the Urban Growth Boundary, optimize flood control and create a “Complete Corridor” to support the movement of water, wildlife and people.
- GMIS Stormwater Servicing Construction – The Stormwater Engineering Division will continue to lead the design and construction of stormwater management facilities to support growth City-wide in accordance with the Growth Management Implementation Strategy (GMIS) and the Development Charges By-law.
- Low Impact Development (LID) – The implementation of Low Impact Development will increase over the Multi-Year Budget period. LID designs will be incorporated as part of Lifecycle, Growth, and Service Improvement projects City-wide in order to promote infiltration at the source and reduce run-off volumes where beneficial and practical.
- Waterway Restoration - The Waterways Restoration Annual Program will be rolled out as part of the Multi-Year Budget. The Program includes remediation work on open channels within the Built Area using natural channel techniques to improve the natural environment and protect properties from flooding.

- Flood Control Solutions – The Multi-Year Budget provides further funding to support UTRCA-led initiatives including improvements to dykes and dams, Regulatory Floodplain mapping and construction of ongoing construction phases of the West London Dyke.

Risks and Challenges Anticipated in 2020-2023

- The first phase of several major water and wastewater projects were completed with funding from Federal/Provincial programs. There is a risk that the subsequent phases of this previously announced funding will not materialize. This would leave the future phases of several major infrastructure projects unfunded and incomplete.
- As many key wastewater operator staff are nearing retirement, the training of junior staff will need to be accelerated. Through training and mentoring, junior staff will be provided the opportunities to gain the knowledge, skills, and abilities to fill senior operator roles.
- The increasing frequency of significant weather events associated with climate change places strain on existing City resources and have the potential for significant economic and social impacts.
- The City plays a major role in responding to environmental spills in the community. Sewer Operations staff respond to these spills to meet Ministry of Environment, Conservation and Parks (MECP) expectations. The number and severity of spills are unpredictable and the cost to mitigating these spills poses a financial risk.
- Updates to the Regulatory Floodplain are underway with the Upper Thames River Conservation Authority within Dingman Creek, Mud Creek and the Thames River. The updated 250-year elevations may increase the floodplain in several areas throughout the City, resulting in significant impacts on public and private property.
- There is a risk that the MECP will mandate the implementation of Low Impact Development stormwater practices across the Province for new growth and retrofit projects, including municipal reconstruction projects. This could increase the requirements and costs of storm sewer renewal projects.
- The Mud Creek Stormwater Servicing project is a major project to relieve flooding and provide opportunities for growth. This project includes two tunnels to be constructed through a CN rail embankment. An experienced consultant team has been awarded this project and contractors will be pre-selected to bid on this complex project. There are inherent risks in tunnel construction projects with a corresponding financial risk to the City if the project is not successful.
- Unforeseen changes in legislation or regulations can have a significant financial impact on the capital and operational work of the Wastewater Service Area.
- The quality of asset management data has greatly improved for linear (sewer) assets over the last ten years. In advance of the next Corporate Asset Management plan update, more detailed asset management inventory work will be performed on the City wastewater facilities including pumping stations and treatment plants. As these studies will provide better quality data and a more accurate assessment of the City's wastewater facilities, there is a risk that the wastewater infrastructure gap could

substantially increase following this study work if the existing inventory data understates the actual value of the City's wastewater treatment assets.

- The Multi-Year Budget provides funding to support UTRCA-led initiatives including improvements to dykes and dams. There is an inherent short-term flooding and environmental risk during construction while undertaking projects adjacent to a flood prone river.

The service directly supports the following components of the Corporation's 2019-2023 Strategic Plan:

BUILDING A SUSTAINABLE CITY							
London has a strong and healthy environment.							
Expected Result	Strategy	Metric	Target				
			2019	2020	2021	2022	2023
Protect and enhance waterways, wetlands and natural areas.	Improve water quality in the Thames River. (BSC-19)	25,000 Thames River water quality samples taken.	5,000	5,000	5,000	5,000	5,000
		250 homeowner grants provided to reduce basement flooding and treatment plant bypasses.	50	50	50	50	50
		4.2 kilometers of combined sewer replaced.	0.5	0.3	1.6	0.9	0.9
		800 million litres reduction in raw sewage bypasses to the Thames River during large rain storms.	100	100	150	200	250
		100 million litres per day increase in ability to treat sewage during large rain storms.	0	0	17	29	54

For more information:

Other Reference Information

- [Civic Works Committee, September 24, 2019, Wastewater Treatment Operations Environmental Assessment Master Plan Study Initiation](#)
- [Civic Works Committee, October 22, 2019, East London Sanitary Servicing Study Municipal Class Environmental Assessment: Issuance of Addendum](#)
- [Dingman Creek Subwatershed Stormwater Servicing Strategy Municipal Class Environmental Assessment.](#)
- [UTRCA Flood and Erosion Hazard Mapping with FAQs](#)
- [City of London Website: Low Impact Development](#)
- [2021 Development Charges Background Study Update](#)

Contact

- Scott Mathers, Director, Water and Wastewater
- 519-661-CITY (2489) Extension 4430
- smathers@london.ca