# Agenda
## Cornwall City Council

**Meeting #:** 2019-31
**Date:** Monday, December 2, 2019, 5:00 PM
**Location:** City Hall, Council Chambers, 360 Pitt Street, Cornwall, Ontario, K6J 3P9

**Chair:** Bernadette Clement, Mayor
**Prepared By:** Manon L. Levesque, City Clerk

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Pages

### Roll Call

Appel nominal

### Adoption of Agenda

Ratification de l'Ordre du jour

The following Agenda is being presented for adoption as presented.

### Disclosure of Interest

Déclarations d'intérêts pécuniaires

### Presentation(s) and/or Report(s)

Présentation(s) et/ou rapports

**4.1 2020 Water & Wastewater Budget, 2019-211-Financial Services** 1

Action Recommended
That Council receive and approve the 2020 Water and Wastewater Budget.

### Adjournment

Ajournement

The next regular public meeting of Council will be held on Monday, December 9, 2019.

**The Corporation of the City of Cornwall**

**Regular Meeting of Council**

**Report**

| | |
|---|---|
| Department: | Financial Services |
| Division: | Finance |
| Report Number: | [Report Number] |
| Prepared By: | Tracey Bailey, General Manager |
| Meeting Date: | December 2, 2019 |
| Subject: | 2020 Water & Wastewater Budget |

## Purpose

To present the 2020 Water and Wastewater Budget for review.

## Recommendation

That Council receive and approve the 2020 Water and Wastewater Budget.

## Financial Implications

The 2020 Water and Wastewater budget for operating and capital is attached. A hard copy has been provided for Council's review.

The 2020 budget reflects a combined budget increase of 3.79% or $697,259 to the utility billing from the 2019 budget. The increase on the average annual residential water and wastewater bill will range from $24.52 to $34.94.

## Strategic Priority Implications

The Water and Wastewater budget aligns with the City's Strategic Plan in providing services that enable a financially and environmentally sustainable community which will care and provide for the needs and values of its residents.

It continues to invest in modern efficient water and wastewater infrastructure to ensure continuous safe drinking water and wastewater services.

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**Background / Discussion**

The City of Cornwall is responsible for water treatment and supply, wastewater collection and treatment, and stormwater management across the city. The Water and Wastewater budget supports these services.

At the meeting of December 2, 2019, the General Manager, Financial Services; the General Manager, Infrastructure and Municipal Works (Acting); Division Manager, Infrastructure Planning; Division Manager, Environmental will be providing Council with a Powerpoint presentation on the 2020 Water and Wastewater budget.

**Report Approval Details**

| | |
|---|---|
| Document Title: | 2020 Water and Wastewater Budget - 2019-211-Financial Services.docx |
| Attachments: | - 2020 Water and Wastewater Budget Submission.pdf |
| Final Approval Date: | Nov 27, 2019 |

This report and all of its attachments were approved and signed as outlined below:

**No Signature found**

**Bill de Wit - Nov 27, 2019 - 4:47 PM**

**Tracey Bailey - Nov 27, 2019 - 4:49 PM**

**Maureen Adams - Nov 27, 2019 - 5:06 PM**

# 2020 Water and Wastewater Budget Submission

Cornwall
ONTARIO CANADA

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# CITY OF CORNWALL – 2020 WATER AND WASTEWATER BUDGET

The City of Cornwall is responsible for water treatment and supply, wastewater collection and treatment, and stormwater management across the city. The Water and Wastewater Budget supports these services.

Each day, clean, safe water travels from the Water Purification Plant (WPP) through the City's watermains for use by residents and businesses. Similarly, wastewater flows through the City's sewer system to the Wastewater Treatment Plant (WWTP) for enhanced secondary treatment before it is released into the St. Lawrence River. Stormwater is conveyed, via storm sewers, directly or indirectly, to the St. Lawrence River.

Safe drinking water and effective wastewater collection and treatment are cornerstones of a sustainable, healthy community and environment. Because of their importance to the health of the public and the environment, these services operate with specific level of service and infrastructure standards, as well as financial frameworks, that are highly-regulated by the provincial and federal governments.

The 2020 Water and Wastewater Budget strives to provide funds to support the City's water and wastewater services by continuing to move towards financial sustainability (ie. full cost recovery) in accordance with the *Safe Drinking Water Act (SDWA),* Municipal Drinking-Water Licence*, Water and Wastewater Financial Plan Regulation,* and the *Sustainable Water and Sewage Systems Act*.

However, many challenges exist including: replacement of aging infrastructure, critical repairs, backlogs, climate change impacts, funding gaps, and public awareness.

## Mission Statement

Water and wastewater services are provided through the supply of quality drinking water and treatment of wastewater as a public service to protect public health, safety and property in an environmentally sustainable and a fiscally responsible manner.

## Alignment to Strategic Plan

The Water and Wastewater Budget aligns with the City's Strategic Plan in providing services that enable a financially and environmentally sustainable community which will care and provide for the needs and values of its residents. It continues to invest in modern efficient water and wastewater infrastructure to ensure continuous safe drinking water and wastewater services.

## Regulatory Requirements and Oversight

As outlined in a presentation to City Council on July 29, 2019 (by the Walkerton Clean Water Centre), through the *Standard of Care* provisions of Section 19 of the SDWA, Council has a statutory duty as the ultimate decision-making authority over municipal drinking water systems. This does not require technical oversight, but rather to be informed and vigilant. More generally, the Water and Wastewater industry continues to experience increased legislative and regulatory reform. Water and Wastewater are regulated services and must meet legislated requirements. The purpose of the Acts' and Licence are to protect human health through the control and regulation of drinking water systems (a risk-based framework as described in the Drinking Water Quality Management System (DWQMS)), ensuring operator training and certification, and drinking water monitoring. The Acts' and Licence also stipulate the financial viability to finance the full cost of providing these services.

## Cornwall's Water and Wastewater Services at a glance

- Serves more than 47,000 residents, as well as business' in Cornwall;
- Operates 24 hours a day, 365 days per year;
- Service is customer-funded – no property tax dollars are used to fund Water and Wastewater operating and capital budgets;
- Treatment, storage, and distribution of over 35,000,000 litres of potable water is delivered daily to industrial, commercial, institutional, and household water users in the City of Cornwall, from over 15,000 service connections;
- Over 45,000,000 litres of wastewater is collected and treated per day, from residential and non-residential properties in Cornwall;
- Over $679M in infrastructure assets (2016 replacement value).

**WATER - $183 million**

- Water Purification Plant
- 2 reservoirs and 1 elevated storage tank
- 272 km of distribution watermains
- 1,903 valves
- 1,322 hydrants
- more than 16,000 water laterals

**WASTEWATER - $496 million**

- Wastewater Treatment Plant
- 440 km of sewer mains (storm, sanitary and combined)
- 4,622 catch basins
- 1,780 sewer access points
- 5 lift stations
- approximately 15,000 sewer laterals

## Financial and Management Framework

The 2020 budget is based on a financial framework which provides a roadmap, endorsed by City Council, to proactively ensure the long-term integrity of these essential services. The elements of the framework include: Asset Management Plans (2014-Dillon and Watson; 2016-FCapX), the Water and Wastewater Financial Plan (Watson, 2015), and the Long Term Financial Plan (KPMG, 2016).

Currently, the City is developing the 10-year Asset Management Plans (AMP) for the process equipment at the WPP and the WWTP. These AMPs will provide greater detail to update the City's Long Term Financial Plan (LTFP) and the water and wastewater rate study. The AMPs will also help guide predictive and proactive maintenance planning as well as energy stewardship.

## Financially Sustainable Water and Wastewater Systems

Water and wastewater services continue to strive towards efficient and effective systems while achieving financial sustainability. Achieving financial sustainability requires long-term planning, securing sufficient revenue to recover system costs, safeguarding against unexpected circumstances, managing service debts, and saving for future capital needs. As experienced in other municipalities, this is challenged by a significant infrastructure backlog.

The 10-year LTFP and the Water and Wastewater Financial Plan established a comprehensive revenue framework which seeks to sustain continued operations and infrastructure investment while ensuring healthy Water and Wastewater Reserve balances. The LTFP is reviewed and updated annually to compare revised key assumptions and to reflect changes to the financial operating environment.

The *Municipal Act, 2001* requires that all municipal user fees be established in a way that there is a transparent and direct relationship between the fees being charged and the full cost accounting of the service being provided. Revenue collected must be utilized to meet the needs of these services - and not other services.

Water and wastewater services are funded through the water and wastewater billing revenue from approximately 19,380 flat rate customers and approximately 310 metered accounts.

The cost to operate the water and wastewater operations is fully funded through direct fees and service charges from water and wastewater billings. The water and wastewater billings fund both operating and capital expenditures. No amount of the water or wastewater costs is funded from tax levies.

A detailed Water and Wastewater Financial Plan (as stipulated by the Province's Financial Plan Regulation) was presented to, and endorsed by, Council at the November 9, 2015 Council meeting. To support operating and capital expenditures

associated with managing, operating and maintaining the municipality's water and wastewater systems, the Financial Plan outlined a 5.27% annual increase for water billings and a 6.13% annual increase for wastewater billings (an annual combined rate increase of 5.73%). The proposed 2020 operating and capital budgets have been prepared using a combined rate increase of 3.79%. A financial summary can be found on page 18.

For a residential property, it is estimated that in 2020 this would reflect an annual average increase of about $30 (depending on number of water fixtures accounted in the billing).

The table below summarizes a homeowner's cost for the delivery of clean, safe water, as well as the collection and treatment of wastewater and stormwater management for a typical household:

| Residential Property | 2019 | 2020 |
|---|---|---|
| Average Cost per year | $792 | $822 |
| Average Cost per day | $2.17 | $2.25 |

## 2019 BMA Study

For the past eighteen years, BMA Management Consulting Inc. has annually completed a municipal comparative study on behalf of participating Ontario municipalities. This report brings together a group of indicators to give an overall snapshot for each municipality.

Each year, the City of Cornwall participates in this study. In 2019, 110 Ontario municipalities participated, representing in excess of 86% of the Province's population.

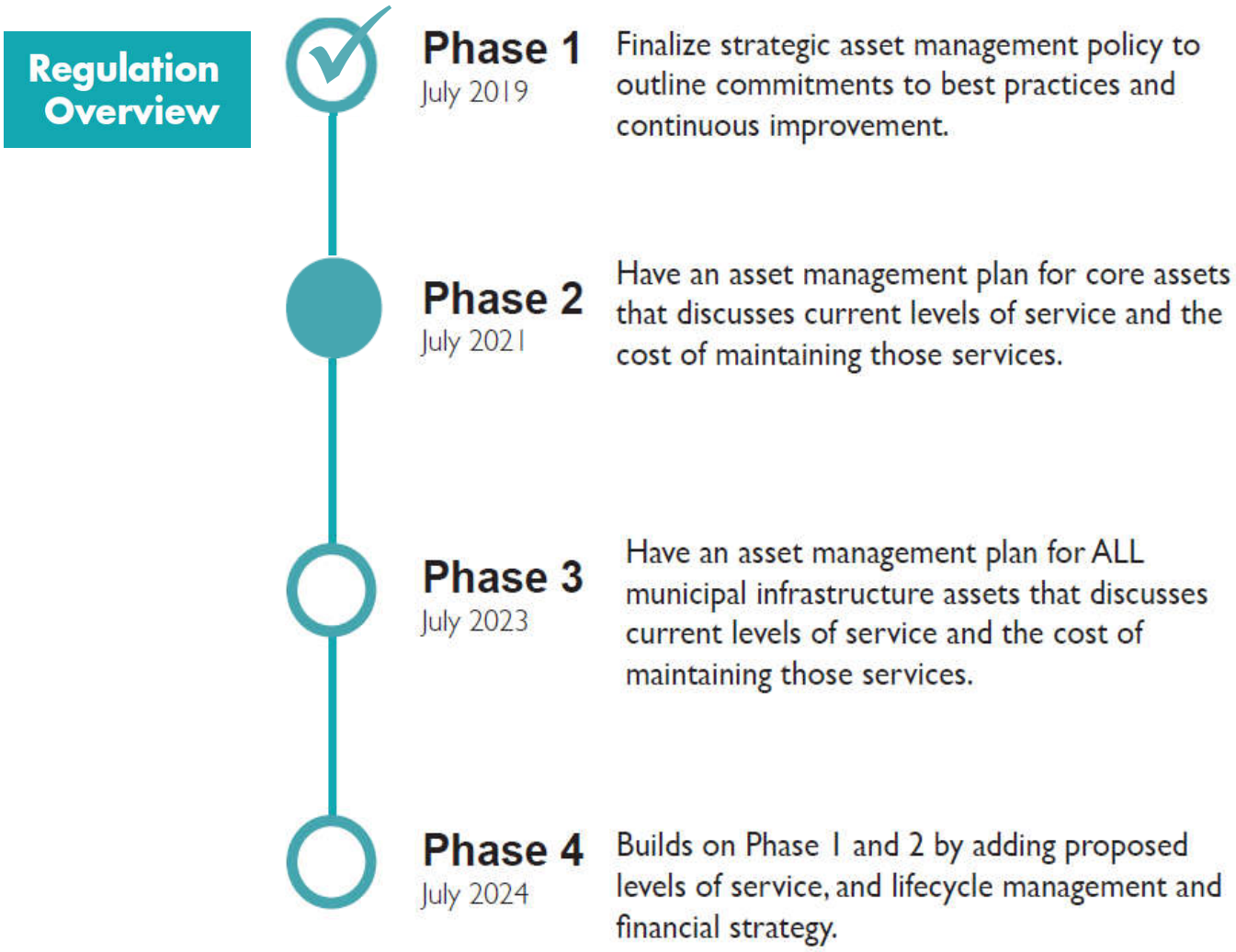
The 2019 BMA Municipal Study indicates that annual user fees for water and wastewater services in Cornwall are among the lowest when compared to the other participating municipalities:

- Residential - Cornwall: $783; BMA average $1,103
- Commercial - Cornwall: $11,260; BMA average $34,334
- Industrial - Cornwall: $33,780; BMA average $104,652

Further comparative information can be found in Appendix B.

## Asset Management Planning Regulation

In late 2017, the Province passed a new legislation through Ontario Regulation 588/17: *Asset Management Planning for Municipal Infrastructure*, which came into effect on January 1, 2018. The regulation sets out requirements for municipal asset management planning and reporting for the 444 municipalities in Ontario.




By July 1, 2019, every municipality was required to prepare and publish a strategic asset management policy. The policy complements and supports a municipality's strategic plan, affirms commitment to asset management principles and philosophies, aligns and integrates asset management into the municipalities key plans, guides the asset management process, and defines responsibilities and accountabilities for Council and Staff, forming a culture that values asset management and makes it a priority.

The City adopted its Asset Management Policy (FI-2019-06-24-1) on June 24, 2019 that meets the requirements of this section of the legislation. The City is required to review this policy at a minimum of every five (5) years from its effective date in order to continue to meet the legislation.

By July 1, 2021, all municipalities are required to develop enhanced AMPs covering core infrastructure assets. These core assets are defined as water, wastewater, stormwater, roads, bridges and culverts. The AMP is to include current service levels, asset performance, condition, age, replacement cost, 10-year lifecycle costs, and funding required to maintain those service levels.

The 2020 capital budget includes a project for an AMP related to core assets in order to meet the requirement to have an updated AMP by July 1, 2021.

The City has always practiced a form of asset management. For many years, staff and consultants have completed separate analysis to address future repair, rehabilitation and/or replacement requirements and the related estimated costs necessary to maintain the City's critical assets.

## Asset Management Planning

Asset management plans form the cornerstone of an effective asset management system. AMPs enable informed decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets. An AMP incorporates detailed asset inventories, operation and maintenance tasks, and long-term financial planning to ensure that annual revenue, reserves, and reinvestment are sufficient to facilitate the long-term viability of the system.

The five major, generally recognized components of an AMP include:

- Performing an inventory and condition assessment of the system's assets;
- Defining level of service goals;
- Identifying critical assets;
- Establishing life cycle costs; and
- Developing a long-term funding strategy.

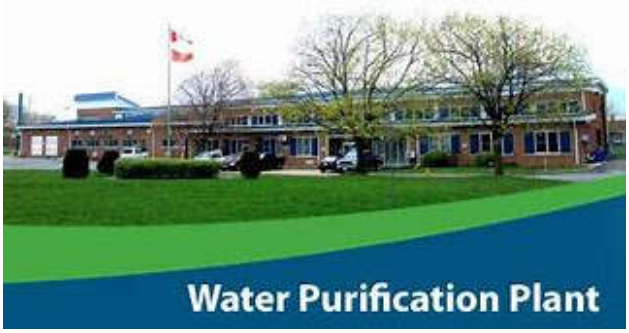
Included in future AMPs, for each year of the full 10-year period of the AMP, municipalities will explain why the proposed levels of service are appropriate, analyze lifecycle activities to consider the entire lifecycle and associated costs related to the assets, risks, and the financial viability; as well as, the funding available to support the plan.

## Environmental Services – Water

The primary objective in operating the water system is to provide a continuous supply of potable water to the residents and businesses of Cornwall. In doing so, all quality, quantity, and environmental standards put forth by City Council, and provincial and federal agencies must be adhered to.

The WPP draws water from Lake St. Lawrence at the Robert Saunders Dam through a 3.7 km, 1,050 mm diameter reinforced concrete pipe running through the Riverdale area of Cornwall. The 2020 budget submission includes a capital project to complete an Intake Redundancy Environmental Assessment (EA). It has been identified that a single raw water intake poses a risk to the service. This project will study the options for a second raw water intake.

The WPP uses chemically assisted coagulation and flocculation to remove particles suspended in the raw water. These particles clump together and are allowed to settle in tanks that are automatically cleaned at regular intervals. The water is then filtered through anthracite media and treated with UV light and chlorine to trap and disinfect any of the remaining harmful pathogens.




The system is rigorously inspected annually and, in 2019, earned its eleventh consecutive 100% compliance rating from the Ministry of the Environment, Conservation and Parks (MECP).

The water distribution system is maintained by the Municipal Works department. The system is a complex network of pipes, storage facilities, valves, fire hydrants, reservoirs, and an elevated storage tank. In order to meet demands, sufficient pressure is maintained throughout the distribution system by pumps at the WPP and the Boundary Road Reservoir as well as static head pressure provided by the elevated water storage tank located on Tollgate Road, East.

The Municipal Works department has addressed an average of 56 watermain breaks per year over the past five years. When a watermain break occurs, a repair can be lengthy and disruptive for the affected water customers, local traffic, and pedestrians. Through proactive asset renewal programs, priority areas can be identified and steps taken to renew infrastructure to ensure a continued reliable service.

## Environmental Services - Wastewater

The main objective of the wastewater system is the treatment and disposal of effluents without danger to human health or unacceptable damage to the natural environment. The City strives to maintain high standards in wastewater treatment to ensure there is minimum effect on the environment of the St. Lawrence River.

At the WWTP, primary treatment consists of temporarily holding the sewage in a quiescent basin where heavy solids can settle to the bottom while oil, grease and lighter solids float to the surface. With the assistance of chemicals, solids are separated from water in four settling tanks (clarifiers). The settled and floating materials are removed and the remaining liquid is discharged to secondary treatment. The water leaving the clarifiers is directed to Biological Aerated Filters (BAF) where secondary treatment occurs. The water leaving these filters is disinfected with UV radiation prior to discharge to the St. Lawrence River. The solids portion is sent to a thickening facility prior to digestion, dewatering, and disposal at the City's landfill.

The Municipal Works department is responsible for the operation and maintenance of the sewer mains (storm, sanitary and combined) including associated appurtenances, such as: catch basins, manholes and sewer laterals. This department is also responsible for 5 lift stations, urban drainage maintenance and flood control.

Municipal Works has addressed an average of 100 sewer lateral repairs per year over the past five years.

The stormwater management system functions to control flooding and help filter out sediments collected by stormwater flow before it reaches waterways.

Combined sewer systems are sewer pipe systems which accept both stormwater and sanitary sewage. Combined sewers are part of the original municipal sewage collection system and are typically found in the oldest sections of the City. When the opportunity arises through street reconstruction, combined sewers are separated by installing a second pipe in order to allow a dedicated pipe for stormwater collection and dedicated pipe for domestic sewage collection.

When combined sewer systems experience higher than normal flows, relief systems cause discharges containing human and industrial waste to flow untreated into the St. Lawrence River. These events are known as Combined

Sewer Overflows (CSOs). The City has experienced 25 CSO events to date in 2019 which has resulted in 257,000 m3 of wastewater discharged directly to the St. Lawrence River. Such events can cause both negative environmental and lifestyle consequences. Combined sewers can cause serious water pollution problems during CSO events when combined sewage and surface runoff flows exceed the treatment capacity of the WWTP.

## Reserves

The Water Works Reserve and the Wastewater Works Reserve were established to provide funding to mitigate the impact of significant increases or unforeseen issues in the rates charged to users and to fund any annual deficits. The LTFP included a lifecycle costing model for the reserves in order to fund projects that are not typically funded by long-term financing. The reserves would be managed in such a way in order to ensure positive reserve balances during major capital spending years.

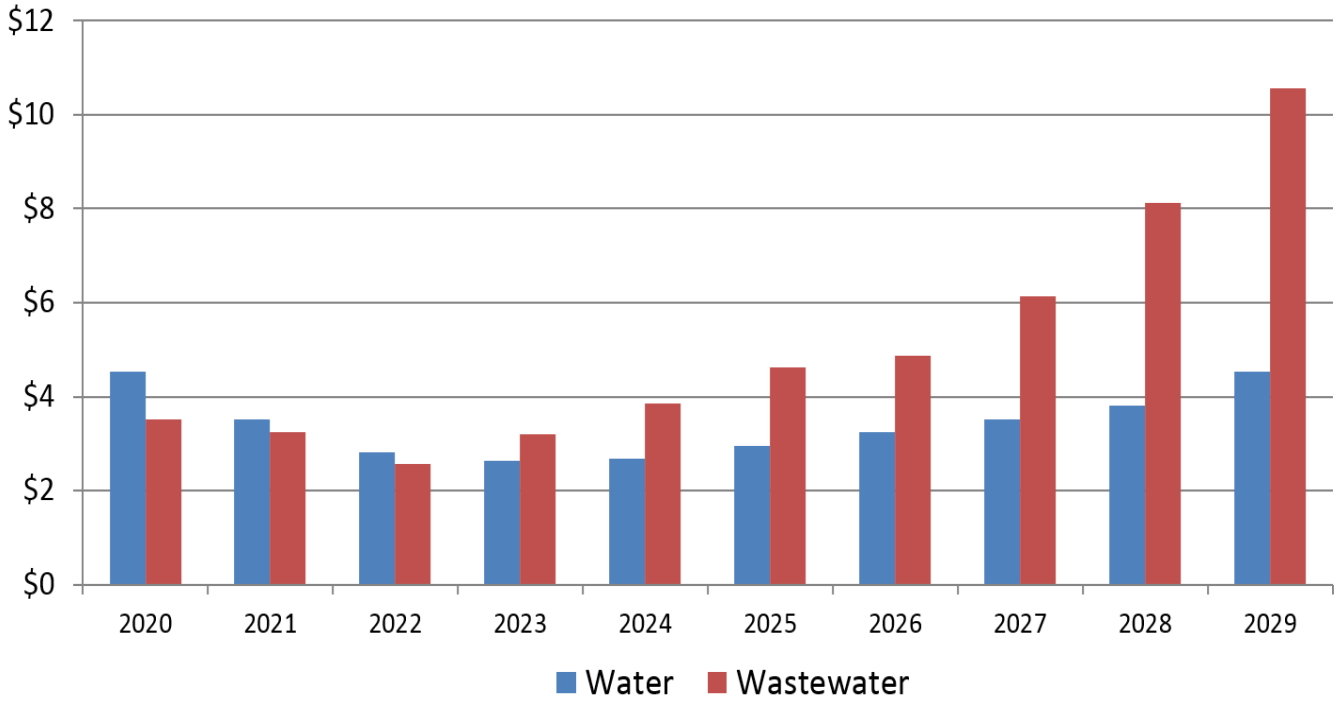
The City's LTFP had target reserve balances for Water and Wastewater being met by 2027. Based on updated requirements of the 10-year capital plan, these target balances are now projected to be met by 2029.

The following schedule shows the contributions to and from the Water Works and the Wastewater Works Reserves. Currently, the Water Works Reserve is trending over the target balance. This funding will support capital works over the next couple of years.

**2020 Detail Of Reserves**
**Estimated December 31, 2020**

| | Opening Balance | Withdrawals | Additions | Balance | LTFP Balance at Dec 31/20 |
|---|---|---|---|---|---|
| **Water Works Reserve** | $4,247,892 | | | | |
| Budgeted Contribution | | | $250,000 | | |
| Estimated Interest | | | $93,610 | | |
| Asset Management Plan | | ($50,000) | | $4,541,502 | $3,471,636 |
| **Wastewater Works Reserve** | $3,490,928 | | | | |
| Estimated Interest | | | $75,820 | | |
| Asset Management Plan | | ($50,000) | | $3,516,748 | $3,236,826 |

The following chart shows the ten–year (2020-2029) forecasted balance (shown in the millions) for the Water Works and the Wastewater Works Reserves based on the City's LTFP and 10-year capital plan. Based on the 10-year capital plan, it is expected that both the Water Works and the Wastewater Works Reserves will fall below targeted balances over the next few years.



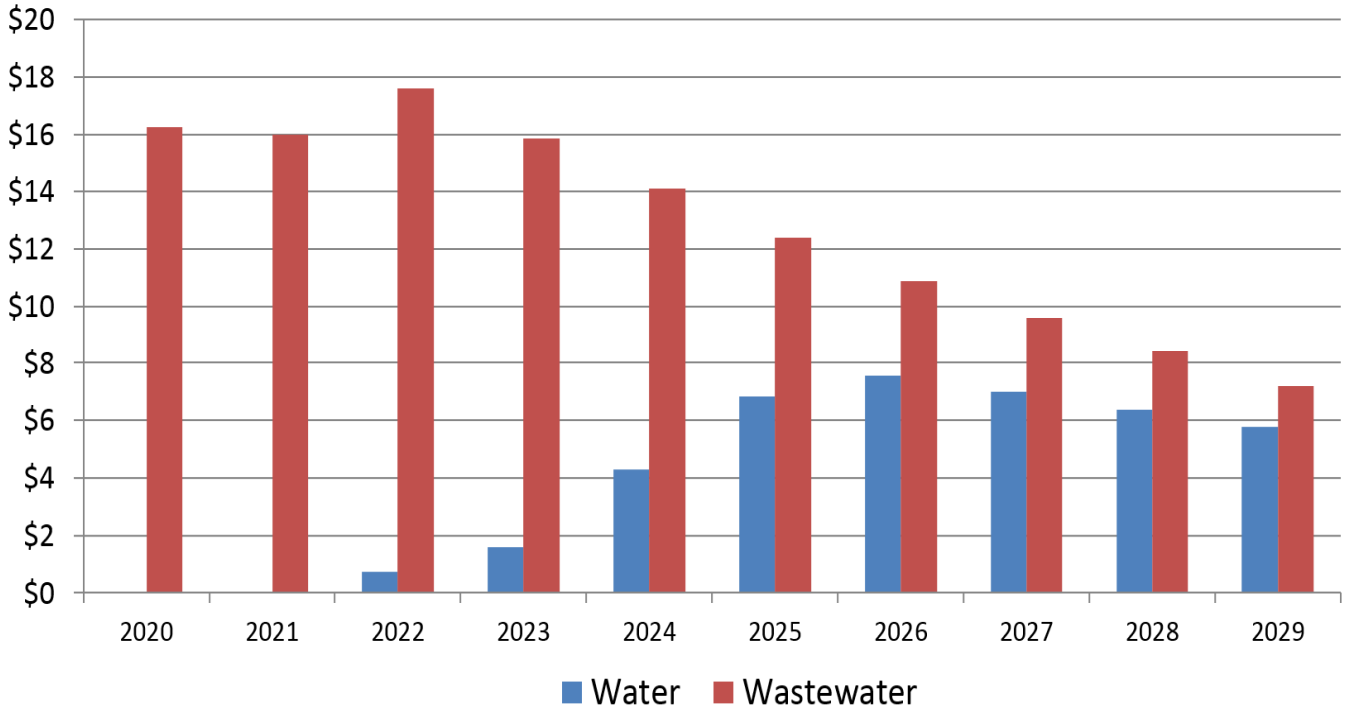

As the City moves forward, financial sustainability must continue as one of the City's key priorities. Reserves are a critical component of the City's LTFP. Continued infrastructure renewal investment will ensure that water and wastewater services are sustainable in the future and meet the citizen's level of service expectations. Adequate reserves will position the City to be able to meet these future infrastructure requirements.

## Long Term Debt

The City has borrowed for the Flood Reduction Initiative, including the Brookdale North Channel Bridge project, and for the Secondary WWTP. The outstanding debt at the beginning of the 2020 fiscal year is estimated at $15.1 million, with an additional $2.5 million of approved borrowing for Wastewater infrastructure.

In the 2020 Water and Wastewater budget, it is proposed that the remaining capital works for York St. be financed at $1.6 million.

The following chart shows the ten–year (2020-2029) forecasted balance (shown in the millions) of long-term debt.




The City has not incurred any debt related to its Water service, though the 10-year financial plan includes borrowing for the 2020 York St. project and for the municipal share of the Pitt Street and the Vincent Massey Drive watermain rehabilitation capital projects. These projects, planned for 2021-2023, are detailed further in the 2020 Capital Budget and Plan section of this report.

## 2020 Operating Budget

The total expenditures for the 2020 operating budget increased by $231,083 or 2.42%. Most of this increase is from salaries and benefits which includes a full year for the Asset Management Coordinator position added in 2019 for the WPP and WWTP. There is an increase in Purchase of Goods in the amount of $64,998 or 2.43% related to increases in chemicals and utilities (electricity, water). Services and Rents, Financial, and Contribution to Reserves remains flat to 2019. Debt charges related to financing capital projects increased by $63,000 or 3.62%. This change is the net of taking on more debt and of debt maturing. Insurance costs across the City will rise by approximately 15%. This is a correction in the insurance industry. The increase for insurance for Water and Wastewater is $23,765 or 14.52%.

Total revenue from user fees increased by $15,100 or 5.96% for the sale of water at the WPP.

Overall, the net operating budget increased by $331,259 or 2.72%.

## 2020 Capital Budget and Plan

The 2020-2029 10-year capital plan, updated annually, outlines the future capital requirements of the City based on existing infrastructure maintenance requirements, the condition of the asset, and the service levels expected of them.

The City's water and wastewater services has a stewardship of an inventory of capital assets valued at $679 million (based on the City's 2016 AMP – replacement value).

Capital works projects at the WPP and the WWTP are managed by the Environmental Services department and are determined by:

- A preventative maintenance program;
- Regulatory requirements for the Drinking Water Works Permit for the Treatment Section of the Cornwall Drinking Water System;
- Regulatory requirements for the Environmental Certificate of Approval at the WWTP;
- Maintaining effluent quality below Provincial effluent limits;
- Maintaining drinking water quality requirements of the Safe Drinking Water Act;
- Combined Sewer Overflow volume and time;
- Risk management through the DWQMS;
- Project management for capital improvement projects.

Linear capital works projects are managed by the Infrastructure Planning department and are determined by:

- Detailed designs for municipal infrastructure projects including road, streetscaping, watermain, sanitary and storm sewers, culverts, and bridges;
- Pre-engineering surveying services for detailed design projects;
- Project management and inspection services for the construction of approved capital projects;
- Cost estimates;
- Liaison with regulatory agencies and utilities to obtain permits and approvals and to coordinate design and construction activities;
- Review services for Ministry of the Environment approvals relating to the design and construction of watermains, sanitary sewers, and storm sewers.

The City's long-term infrastructure requirements have been planned through a fully funded 10-year capital plan. The proposed funding is a combination of contributions through water and wastewater billings, financing, development charges, grants and reserve contributions.

Costs are based on estimated costs for 2020. Inflation is not factored into future year's expenditures. Construction cost inflation is normally more than double the consumer price inflation (CPI). Over the last year, the City has seen increases that far exceed this. Architectural and engineering services, material, labour, transportation and other factors affecting the construction industry has had and continues to have an impact on tender pricing.

As in prior years, the 2020 capital budget is focused on the maintenance and replacement of current infrastructure and addressing the backlog. Major capital projects in 2020 include regular on-going watermain rehabilitation improvements, WPP upgrades, sewer network improvements, combined sewer separation, and WWTP system upgrades.

The 2020 capital budget includes the continuation of two joint infrastructure projects: York St., from Seventh to Ninth (2019, Fifth to Seventh) and Sydney St., from Fourth to Fifth (2019, Second to Fourth). Joint infrastructure projects are typically the complete reconstruction of sewer, water and roadway infrastructure.

Also funded as a joint infrastructure project is the AMP for core assets. As noted, O.Reg 588/17 requires municipalities to have an AMP for core assets by July 1, 2021.

In 2020, a new watermain is planned for Power Dam Dr., from Riverdale to Tollgate. The watermain will be funded by Development Charges as this project is related to growth.

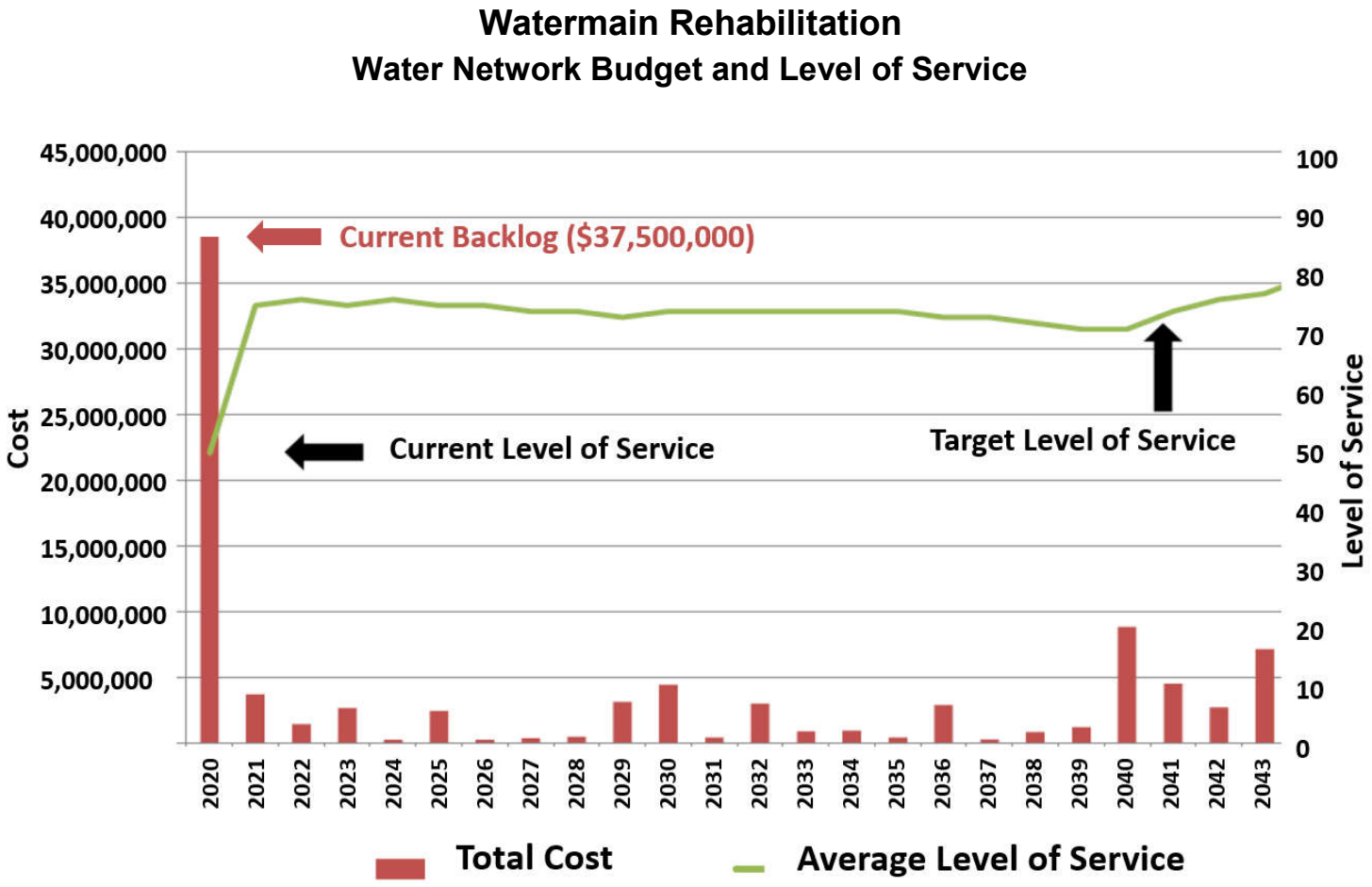
The gross capital requirement for Water and Wastewater is $8,825,000, net $6,575,000. The gross capital approved in 2019 was $8,547,000, net $6,209,000. The net capital increase year over year to water and wastewater billings is $366,000 or 5.89%.

Included in the 10-year capital plan are watermain rehabilitation projects for Pitt Street (2021 and 2022, $3M and $5M respectively) and Vincent Massey Drive (2023, $5M). Both watermain projects are for the rehabilitation of large diameter trunk watermains which have been failing prematurely. Due to the size of the watermain, pipe material, etc., the cost to repair each break is very high.

Although we would like to complete both projects in the years listed in the 10-year capital plan, both projects will require senior levels of government funding to proceed. Included in the 10-year capital plan is 66% funding from the Provincial and Federal governments with the Municipal share financed. If we are not

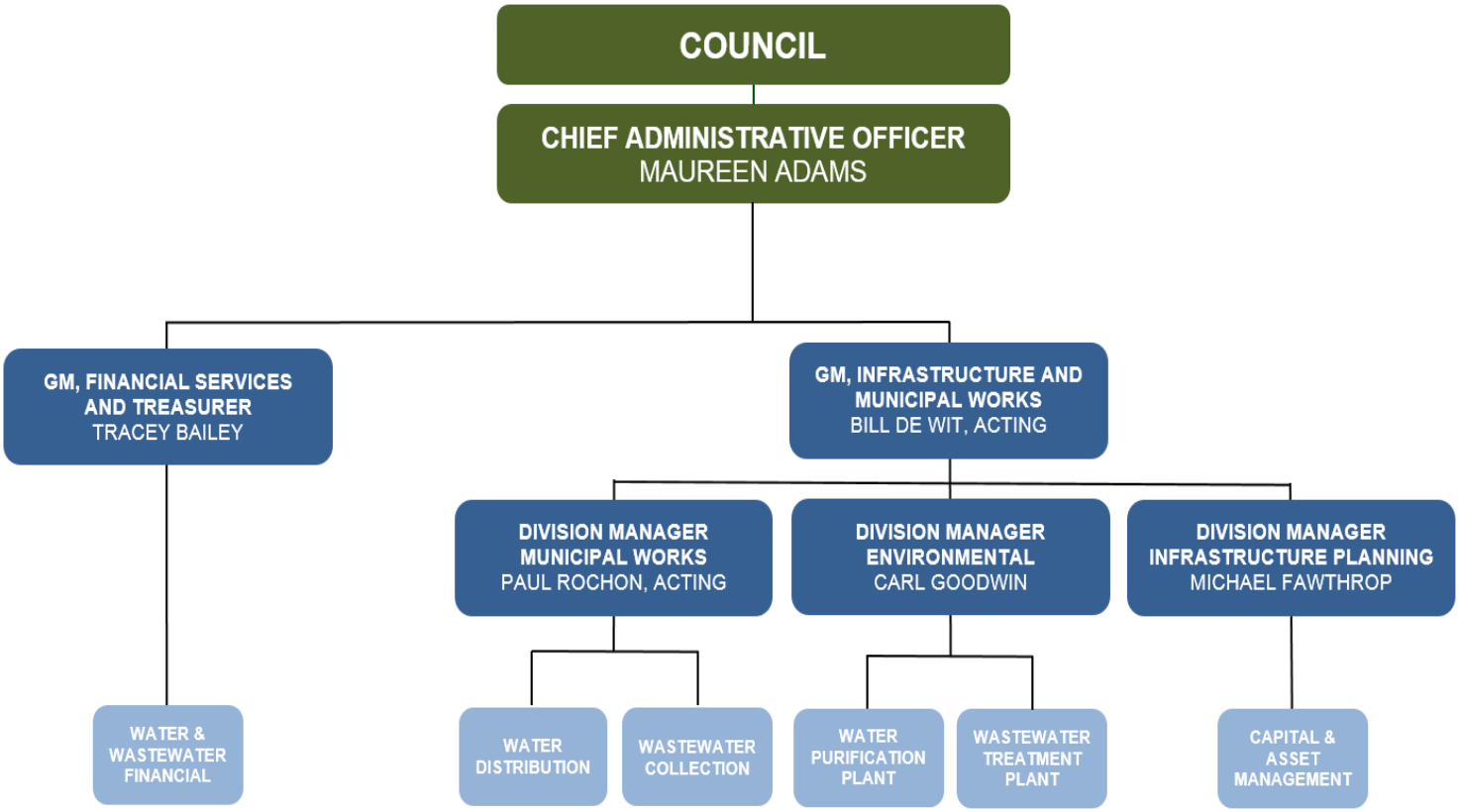
successful in receiving funding, the projects would be deferred to the following year.

Following the development of City's 2016 AMP, given the considerable renewal backlog that exists for watermains ($41.2M at that time), the City determined that its level of service for the watermain network was to address its current backlog over the next 20 years. As such, the 10-year plan would address 50% of the current backlog.




The 10-year capital plan supports the City's Water and Wastewater objectives by balancing infrastructure renewal needs with new service improvement projects, while providing capacity for the community, and ensuring the delivery of water supply and wastewater treatment within an increasingly stringent regulatory framework.

## Organizational Chart - Leadership




## Staffing Complement

| | Water Financial | Municipal Works | | | Environmental Services | | |
|---|---|---|---|---|---|---|---|
| | Full Time | Full Time | Part Time | Student | Full Time | Part Time | Student |
| 2019 | 3 | 25 | 6,463 | 1 | 20 | 728 | 3 |
| 2020 | 3 | 25 | 6,463 | 1 | 20 | 728 | 3 |
| Change | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# Operating and Capital Financial Summary

| | 2019 Budget | 2020 Submission | $ Variance | % Variance | Plan 2021 | Plan 2022 | Plan 2023 |
|---|---|---|---|---|---|---|---|
| **EXPENDITURES** | | | | | | | |
| Salaries and Benefits | $4,325,757 | $4,502,376 | $176,619 | 4.08% | $4,614,935 | $4,730,309 | $4,848,567 |
| Purchase of Goods | $2,676,974 | $2,741,972 | $64,998 | 2.43% | $2,769,392 | $2,797,086 | $2,825,056 |
| Services & Rent | $2,049,631 | $2,039,922 | ($9,709) | (0.47%) | $2,101,120 | $2,164,153 | $2,229,078 |
| Financial | $231,635 | $230,810 | ($825) | (0.36%) | $236,349 | $242,022 | $247,830 |
| Contribution to Reserves | $250,000 | $250,000 | $0 | 0.00% | $250,000 | $250,000 | $850,000 |
| **Total Expenditures** | **$9,533,997** | **$9,765,080** | **$231,083** | **2.42%** | **$9,971,796** | **$10,183,569** | **$11,000,531** |
| **REVENUE** | | | | | | | |
| User Fees & Misc Revenue | $253,200 | $268,300 | $15,100 | 5.96% | $273,666 | $279,139 | $284,722 |
| **Net Operating Expenditures** | **$9,280,797** | **$9,496,780** | **$215,983** | **2.33%** | **$9,698,130** | **$9,904,430** | **$10,715,809** |
| Financing LTD Principal & Interest | 1,742,138 | 1,805,138 | $63,000 | 3.62% | 2,218,066 | 2,594,534 | 2,505,935 |
| Corporate Costs | $982,278 | $1,010,789 | $28,511 | 2.90% | $1,031,005 | $1,051,625 | $1,072,657 |
| Insurance Premiums | $163,637 | $187,402 | $23,765 | 14.52% | $191,150 | $194,973 | $198,873 |
| **Operating Water & Wastewater Billings** | **$12,168,850** | **$12,500,109** | **$331,259** | **2.72%** | **$13,138,351** | **$13,745,562** | **$14,493,274** |
| Gross Capital | $8,547,000 | $8,825,000 | $278,000 | 3.25% | $11,300,000 | $13,615,000 | $13,845,000 |
| Capital Funding | | | | | | | |
| Government Grants | $0 | $0 | $0 | 0.00% | $1,980,000 | $3,300,000 | $3,300,000 |
| Financing | $1,384,000 | $1,600,000 | $216,000 | 15.61% | $1,020,000 | $1,700,000 | $3,000,000 |
| Development Charges | $250,000 | $550,000 | $300,000 | 120.00% | $0 | $0 | $0 |
| Water Works Reserve | $454,000 | $50,000 | ($404,000) | (88.99%) | $1,300,000 | $1,000,000 | $450,000 |
| Wastewater Works Reserve | $250,000 | $50,000 | ($200,000) | (80.00%) | $300,000 | $700,000 | $0 |
| **Capital Water & Wastewater Billings** | **$6,209,000** | **$6,575,000** | **$366,000** | **5.89%** | **$6,700,000** | **$6,915,000** | **$7,095,000** |
| **WATER AND WASTEWATER BILLINGS** | **$18,377,850** | **$19,075,109** | **$697,259** | **3.79%** | **$19,838,351** | **$20,660,562** | **$21,588,274** |

## Estimated Billing Increase Based on Sample Residential Properties

| Residential Billing | | 2019 Billing | 2020 Billing | 2020 $ inc | 2020 % inc | 2021 % inc | 2022 % inc | 2023 % inc |
|---|---|---|---|---|---|---|---|---|
| Sample 1 | 1 Bath<br>Outside Tap<br>No Pool | $646.30 | $670.82 | $24.52 | 3.79% | 4.00% | 4.14% | 4.49% |
| Sample 2 | 1-1/2 Bath<br>Outside Tap<br>No Pool | $808.66 | $839.34 | $30.68 | 3.79% | 4.00% | 4.14% | 4.49% |
| Sample 3 | 2 Full Bath<br>Outside Tap<br>Pool | $921.04 | $955.98 | $34.94 | 3.79% | 4.00% | 4.14% | 4.49% |
| **Average Water And Wastewater Bill** | | **$792.00** | **$822.05** | **$30.05** | **3.79%** | **4.00%** | **4.14%** | **4.49%** |

* The City currently budgets on an annual basis. However, over the past several years, the City has adopted several long-term strategic plans. The annual budgeting process may no longer be sufficient for the City to achieve its long-term strategic priorities. Thus, a fully integrated multi-year budget may be an optimal way to better link longer-term plans and resources. Appendix A provides keys assumptions for years 2021 – 2023.

**CAPITAL BY BUSINESS UNIT**
**FOR THE YEAR 2020**

***Please note all figures are in 000s of dollars**

| DESCRIPTION | 2019 GROSS BUDGET | 2020 GROSS BUDGET | EXTERNAL FUNDING | | RESERVES | | BILLINGS | |
|---|---|---|---|---|---|---|---|---|
| | | | GRANTS | FINANCING | DEV. CHARGES | SPECIFIC RESERVE | WASTE WATER | WATER |
| **WATER CAPITAL** | | | | | | | | |
| **Water Distribution** | | | | | | | | |
| Watermain Rehabilitation | 1,780 | 2,000 | | | | | | 2,000 |
| System Growth - New Watermain | 350 | 550 | | | 550 | | | |
| **Water Purification Plant** | | | | | | | | |
| Water Purification Plant Building Addition and Renovations | | 225 | | | | | | 225 |
| Supervisory Control and Data Acquisition (SCADA) Upgrades | | 400 | | | | | | 400 |
| Raw Water Intake Redundancy Environmental Assessment | | 125 | | | | | | 125 |
| Water Purification Plant Upgrades/Process Improvements | 904 | | | | | | | |
| **WASTEWATER CAPITAL** | | | | | | | | |
| **Sewer Collection Program** | | | | | | | | |
| Sewer Network Improvements | 1,005 | 1,050 | | | | | 1,050 | |
| **Combined Sewer Separation** | 470 | 700 | | | | | 700 | |
| ***2020 Projects*** | | | | | | | | |
| Water St. from Adolphus St. to Marlborough St ($500K) | | | | | | | | |
| Alice St. from Montreal Rd to First St. ($200K) | | | | | | | | |
| ***2019 Projects:*** | | | | | | | | |
| Amelia St. from Third St. to Fourth St. ($140K) | | | | | | | | |
| Water St. from Amelia St. to Adolphus St. ($330K) | | | | | | | | |
| **Wastewater Treatment Plant** | | | | | | | | |
| Replacement of Sludge Collection Clarifiers 3&4 | | 500 | | | | | 500 | |
| Pumphouse Wall Brick Replacement | | 80 | | | | | 80 | |
| HVAC Upgrade | | 170 | | | | | 170 | |
| Insulation in Digester Area | | 65 | | | | | 65 | |
| Piping and Control for Using Excess Blower Capacity | | 100 | | | | | 100 | |
| Energy Generation | | 60 | | | | | 60 | |
| Treatment System Upgrades | 820 | | | | | | | |
| **JOINT INFRASTRUCTURE CAPITAL** | | | | | | | | |
| Asset Management Plan Update | | 100 | | | | 100 | | |
| ***2020 Projects*** | | | | | | | | |
| York St. Reconstruction - Seventh St. to Ninth St. | | 1,600 | | 1,600 | | | | |
| Sydney St. Reconstruction - Fourth St. to Fifth St. | | 1,100 | | | | | 550 | 550 |
| Arc Flash Risk Analysis - Water & Sewer Buildings | 34 | | | | | | | |
| ***2019 Projects*** | | | | | | | | |
| York St. Reconstruction - Fifth St. to Seventh St. | 1,384 | | | | | | | |
| Sydney St. Reconstruction - Second St. to Fourth St. | 1,800 | | | | | | | |
| **Water, Wasterwater, and Joint Infrastructure Capital** | 8,547 | 8,825 | 0 | 1,600 | 550 | 100 | 3,275 | 3,300 |

## COUNCIL APPROVED CAPITAL BUDGETS FROM PRIOR YEARS

| DESCRIPTION | | GROSS BUDGET | EXTERNAL FUNDING | | RESERVES | | BILLINGS | |
|---|---|---|---|---|---|---|---|---|
| | | | GRANTS | FINANCING | DEV. CHARGES | SPECIFIC RESERVE | WASTE WATER | WATER |
| **2019 Council Approved Capital** | | 8,547 | | 1,384 | 250 | 704 | 2,964 | 3,245 |
| **2018 Council Approved Capital** | | 6,511 | 40 | | | 1,010 | 2,355 | 3,106 |
| **2017 Council Approved Capital** | | 6,745 | | 1,350 | | 500 | 2,185 | 2,710 |

# Environmental Services - Water

**Project Name:** **Watermain Rehabilitation**

**Funding:** $2,000,000 Water Billings

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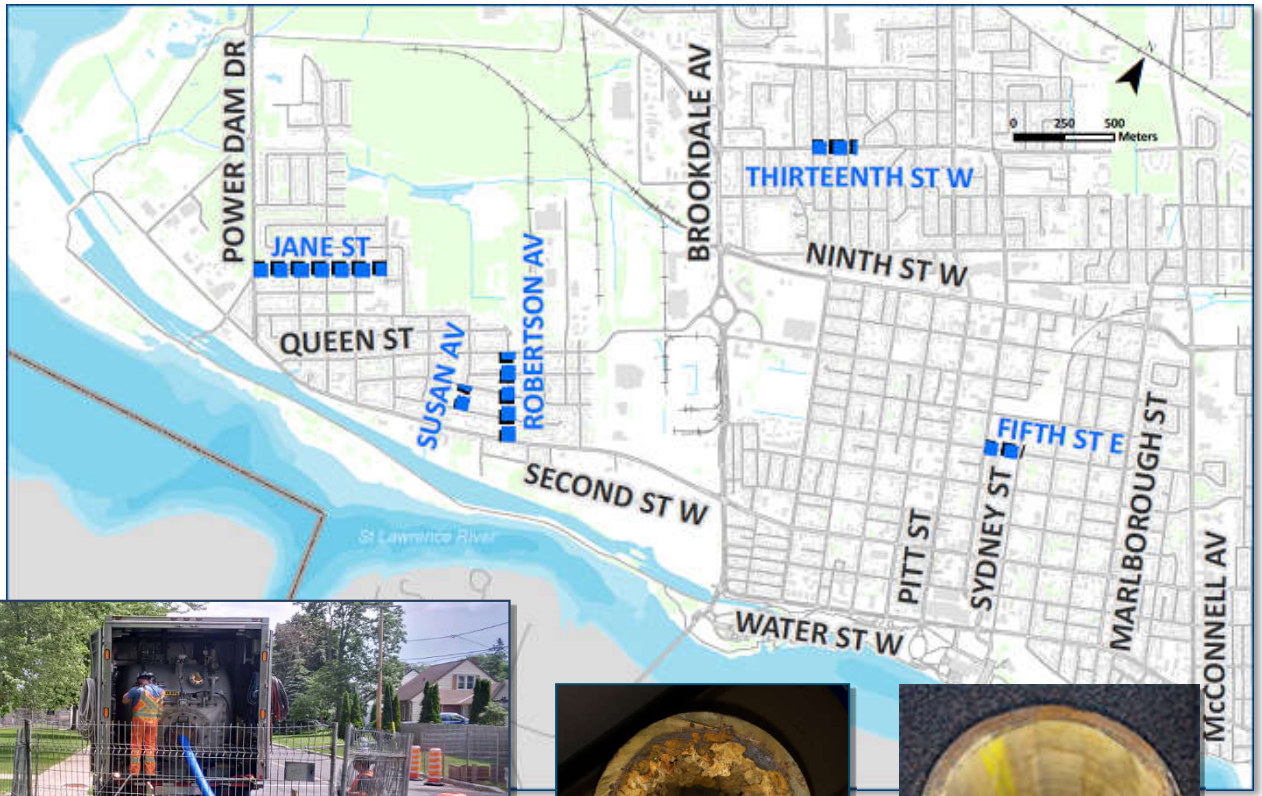
The objectives of the watermain rehabilitation program are to improve water quality and system reliability. Numerous cast iron unlined watermains throughout the City require improvements in order to maximize water quality in the distribution system. Tuberculation build-up on the inside of these pipes creates problems in maintaining minimum chlorine residual levels. It also reduces available fire flow because the inside diameter is reduced and has a rough texture which increases energy loss. In addition, some portions of the system are prone to leakage and breaks which, if reduced, will decrease operational costs.

The annual watermain rehabilitation program is aligned with the City's ongoing Infrastructure Strategy and linear Asset Management Plan.

Watermain rehabilitation is an ongoing annual capital program. The 2020 watermain rehabilitation candidates are as follows:

- Thirteenth St. West from Notre Dame St. to Churchill St. – Relining ($350K)
- Fifth St. East from Amelia St. to Sydney St. – Replacement ($300K)
- Robertson Ave. from Second St. to Queen St. – Relining ($450K)
- Jane St. from Power Dam Dr. to Surgenor St. – Relining ($700K)
- Susan Ave. from Osborne Ave. to Leonard Ave. – Relining ($200K)




Watermain Relining - Riverdale

Cast Iron Watermain - Before Relining

Cast Iron Watermain - After Relining

# Environmental Services - Water

**Project Name:** **System Growth – New Watermain**

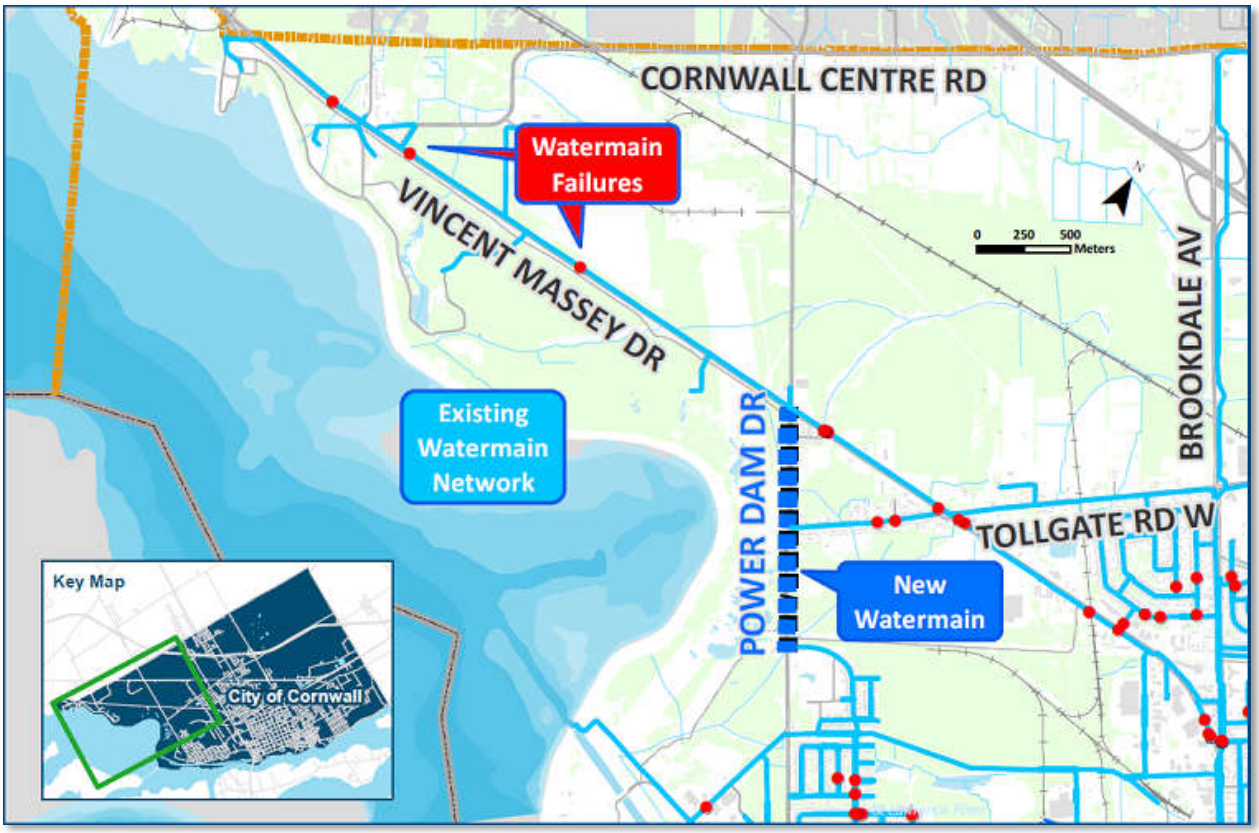
**Funding:** $550,000 Development Charges (2020)
Total Project Estimated Cost is $1.2M
$650,000 has been set aside in previous budget years to begin the work in 2020.

---

In order to provide the necessary system reliability and redundancy, all major watermains are required to be looped such that water can be supplied from two separate directions. In addition to increasing the flow rate, water network looping also ensures a reliable system by providing redundancy in the event of a watermain break or another problem. In the event of a break, a section of the watermain can be isolated for repair without interrupting water supply and service for the majority of the service area. Additionally, water network looping is beneficial for fire protection as it provides greater water supply and pressure as well as ensures an adequate water supply can be provided in the event of a break.

Watermain network extensions for water system growth and security is an ongoing capital program. The 2020 watermain extension candidate is as follows:

- Power Dam Dr. from Riverdale Ave. to Tollgate Road ($550,000)



# Environmental Services - Water

**Project Name:** **Water Purification Plant Building Addition and Renovations**

**Funding:** $225,000 Water Billings
Total Project Estimated Cost is $996,000
$771,000 has been set aside in previous budget years to begin the work in 2020

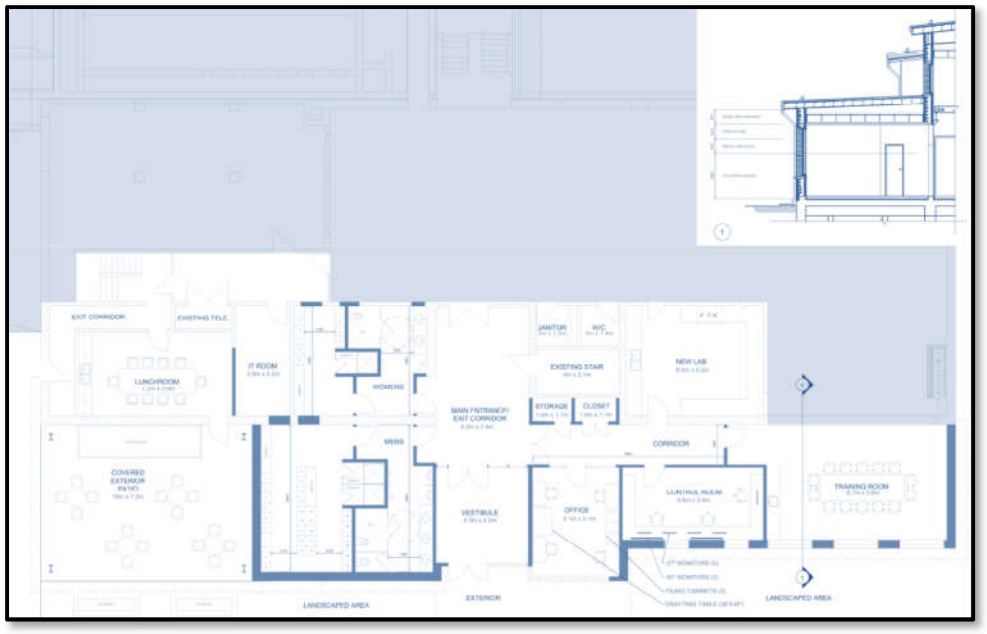
---

A review of the Water Purification Plant (WPP) facilities has identified a number of functional deficiencies. These deficiencies are as follows:

- A health and safety assessment has determined that an employee change room facility (to accommodate both males and females) is required at the plant to prevent chemical contamination;
- The Ontario Building Code stipulates changes are to be incorporated to allow for accessibility on the ground floor of the plant;
- Washrooms which would meet modern standards to accommodate male and female employees and visitors are required;
- The need for an appropriate room for employee training;
- The need for additional office space to accommodate the increase in WPP and Waste Management staff.

In early 2019, Council commissioned the engineering consulting firm JL Richards to prepare design specifications and tender documents for the proposed construction and renovation work necessary to address the above mentioned concerns. The design work includes innovative low energy elements.

The conceptual design has been completed and development of detailed tender documents is nearing completion. The total construction budget is estimated at $996,000. The estimated construction project budget previously established in WPP capital accounts requires some additional capital funds. The additional requested funds will allow this project to proceed to construction in 2020.



# Environmental Services - Water

**Project Name:** **Supervisory Control and Data Acquisition (SCADA) Upgrades**

**Funding:** $400,000 Water Billings

---

The Water Purification Plant (WPP) has a preventative maintenance program and a quality management system used to ensure integrity of the drinking water system. The Drinking Water Quality Management System (DWQMS), which is mandated by the Ministry of Environment, Conservation & Parks (MECP), uses a continual improvement model and an auditing process to ensure the standards set by the operating authority are met.

The WPP's SCADA system is a critical component of the drinking water system. The SCADA system allows the plant operators to monitor and adjust the treatment process while also collecting the necessary data required by the MECP. The DWQMS infrastructure review (preventative maintenance and asset management condition assessment) has identified that the electronic hardware of the SCADA system requires replacement. Instrumentation has an estimated life of 5 years and the hardware was last replaced in 2013.

This project will be comprised of contracting a qualified engineering firm to implement the hardware upgrades and associated programming required for integration within the plant's existing SCADA system. The upgrade will allow for greater data speeds, as well as the addition of energy data and control to assist with energy conservation reductions and monitoring.

# Environmental Services - Water

**Project Name:** **Raw Water Intake Redundancy Environmental Assessment**

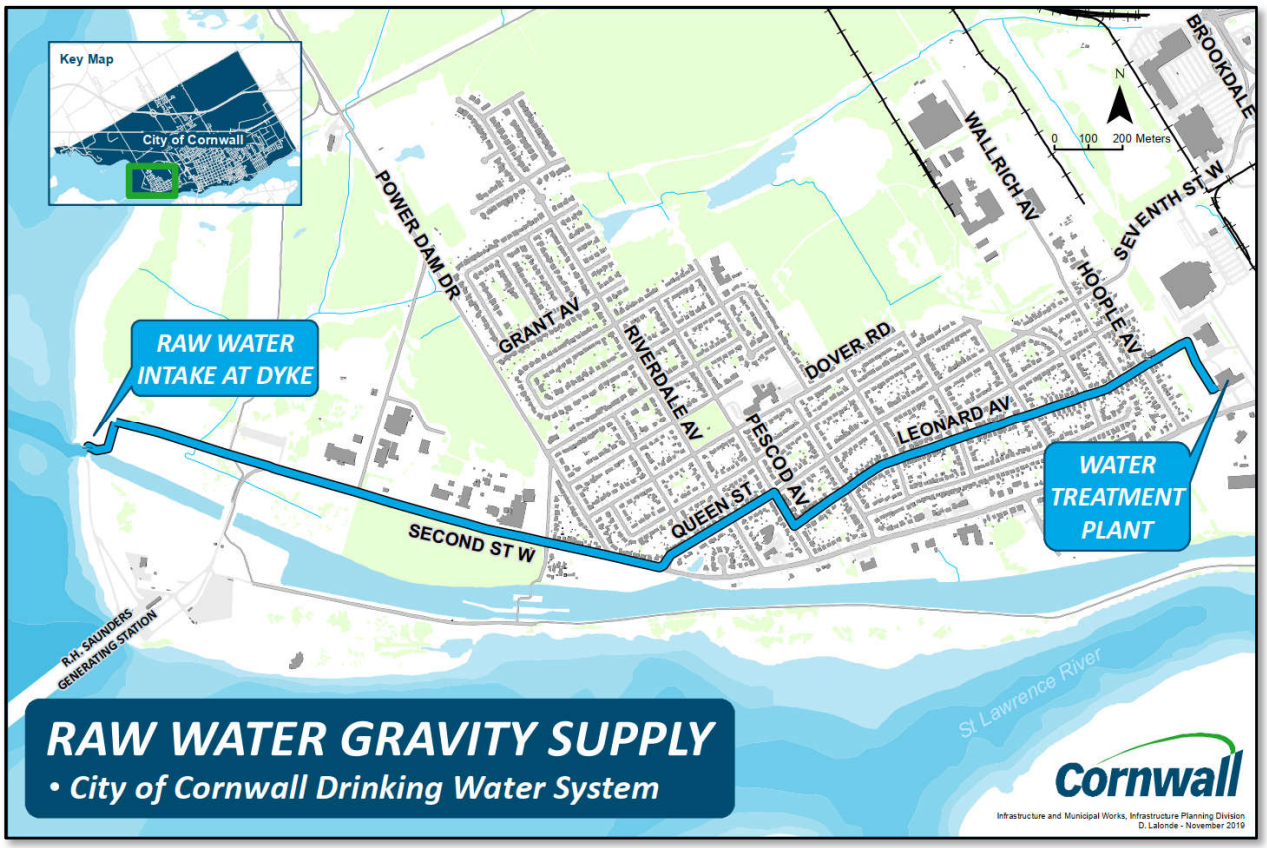
**Funding:** $125,000 Water Billings

---

The Water Purification Plant (WPP) has a preventative maintenance program and a quality management system used to ensure integrity of the drinking water system. The Drinking Water Quality Management System (DWQMS) uses a continual improvement model and an auditing process to ensure the standards set by the operating authority are met.

As part of the DWQMS, an annual review is conducted which includes a detailed risk assessment of the City's water system. The MECP's newly released DWQMS 2.0 added the requirement to include climate change adaption and climate change weather events impacts. The City's 2019 Risk Assessment identified that the associated risk level of a failure to the WPP's single raw water intake is increasing due to severe weather events which are occurring at a much more frequent rate. Additionally, a failure or breach of the raw water intake pipe could also occur. Failure of the single raw water intake could result in a City-wide water service interruption for a prolonged period of time.

As part of this project, a qualified consulting engineering firm will be retained to conduct an environmental assessment which will provide and evaluate various potential options to establish a second raw water intake to the WPP. The establishment of a second raw water intake will provide the necessary water system redundancy which will protect the City's water supply should a failure of the existing single raw water intake occur.



# Environmental Services - Wastewater

**Project Name:** **Sewer Network Improvements – Various Locations**

**Funding:** $1,050,000 Wastewater Billings

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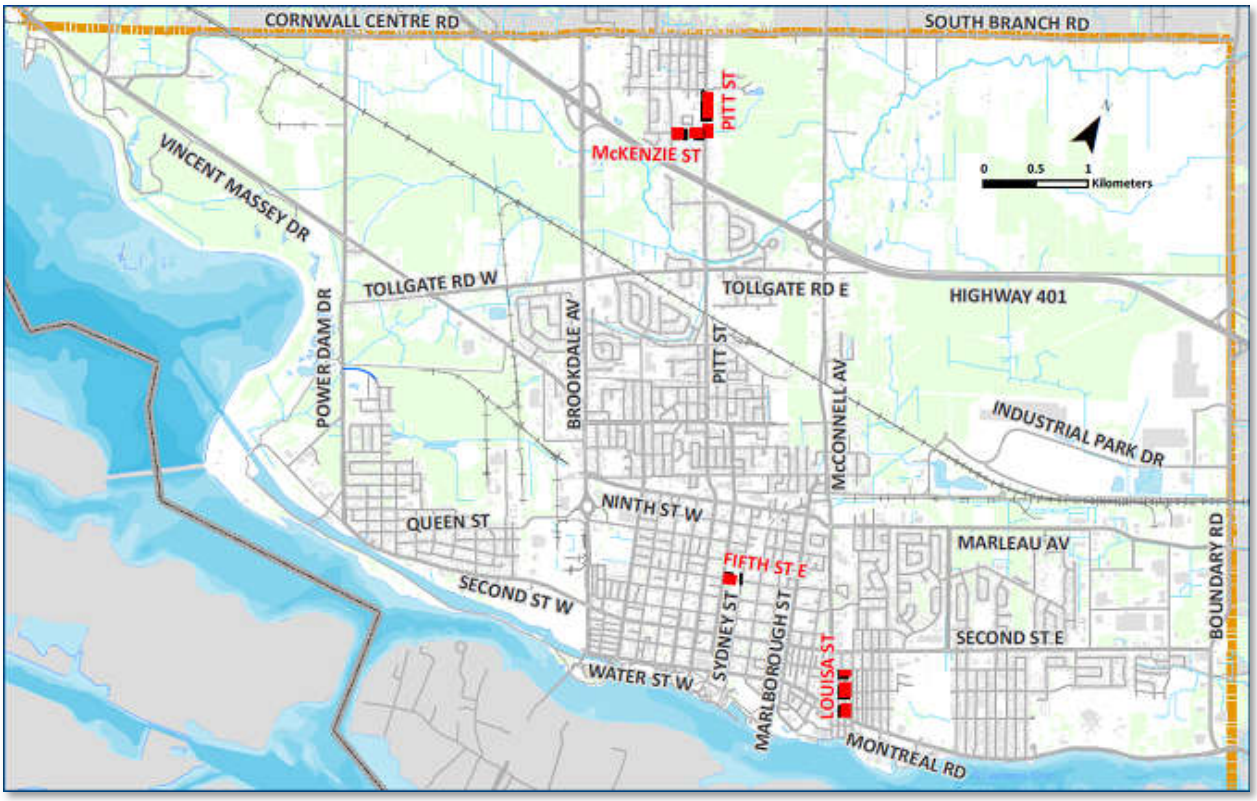
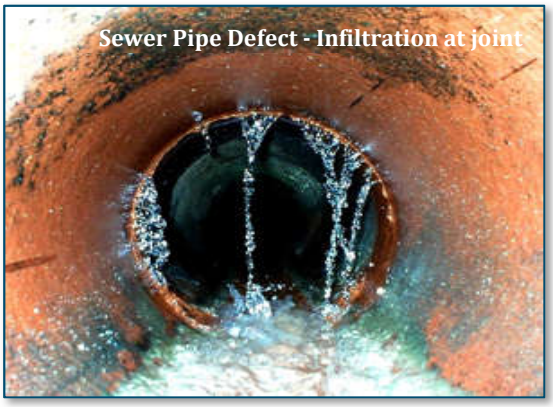
The objectives of the annual Sanitary Sewer Network Improvements program is to replace/repair deficient storm and sanitary sewers in various locations throughout the City, which have been identified through closed circuit television (CCTV) sewer inspections, to have broken, collapsed or have other structural deficiencies.

The following are the proposed projects in 2020:

1) Fifth St. from Amelia St. to Sydney St. – Sewer Replacement ($350K)
2) Pitt St. from Mercier Ave. to McKenzie St. – Sewer Replacement ($150K)
3) McKenzie St. from Pitt St. to Ross Ave. – Sewer Replacement ($300K)
4) Louisa St. from Montreal Rd. to First St. – Sewer Replacement ($250K)




# Environmental Services - Wastewater

**Project Name:** **Combined Sewer Separation**

**Funding:** $700,000 Wastewater Billings
Total Project Estimated Cost is $1.34M
$640,000 has been set aside in previous budget years to begin the work in 2020

---

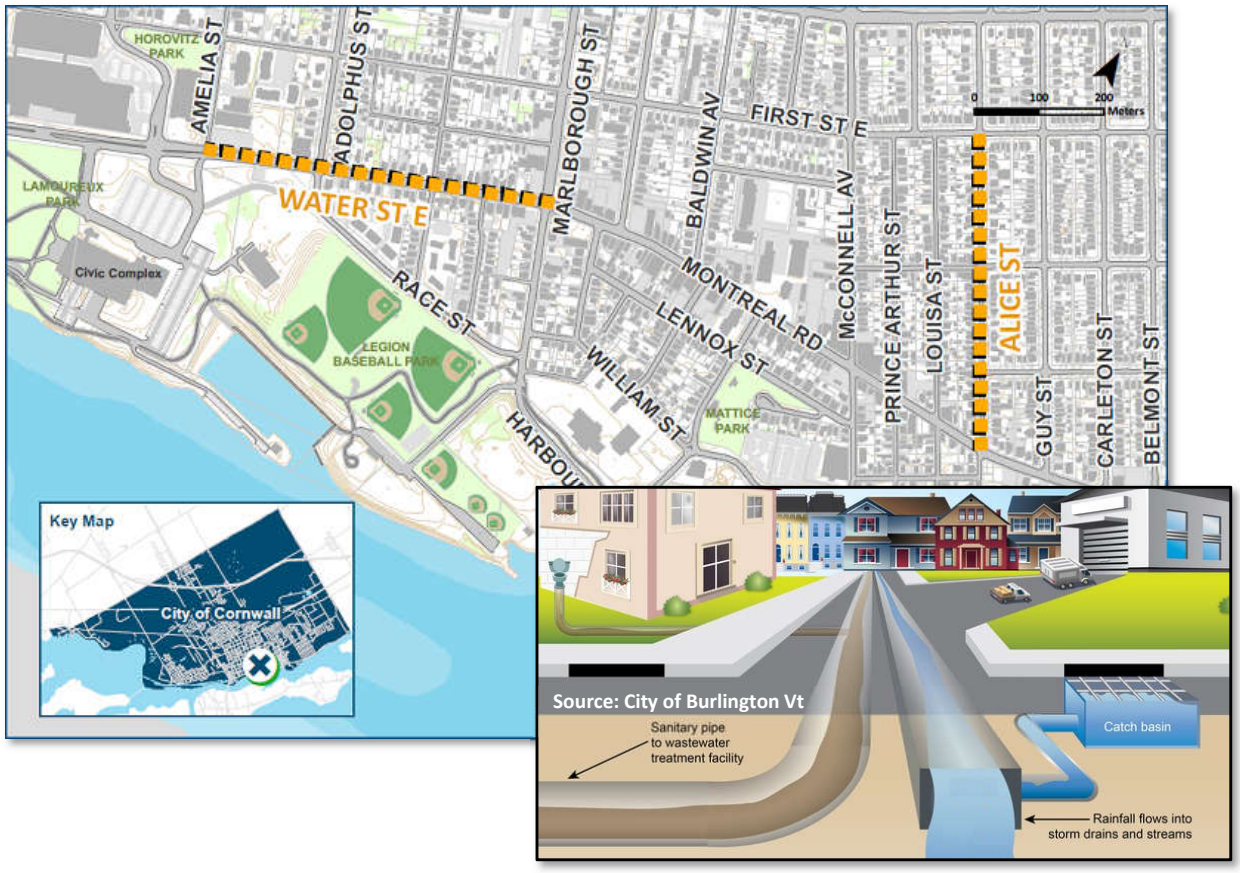
The separation of combined sewers has the objective of reducing wet weather flows in the sewage system and to the Wastewater Treatment Plant (WWTP). It reduces the potential for basement flooding because flows are lowered in the pipe that are directly connected to houses. Separation also reduces Combined Sewer Overflow (CSO) volumes and the potential for bypasses from the Wastewater Treatment Plant to the St. Lawrence River. It is achieved by constructing new storm sewers so that the combined sewer can be converted into a sanitary sewer. Projects are prioritized based on the roadway surface condition so that sewer works can be done before resurfacing.

The proposed Combined Sewer Separation projects for 2020 are:

- Water St. from Amelia St. to Marlborough St. ($500K)
- Alice St. from Montreal Road to First St. ($200K)

The 2020 Combined Sewer Separation tender will include the separation of the combined sewer on Water St. from Amelia St. to Adolphus St. which was included in the 2019 Water & Wastewater Budget at $330K. The tender will also include the separation of the combined sewer on Alice St. from Montreal Rd. to Adolphus St. which was included in the 2018 Water & Wastewater Budget at $310K.

Following the separation of the combined sewer on Water St. from Amelia St. to Marlborough St., the City will continue the asphalt resurfacing of Water St. easterly in 2021.



# Environmental Services - Wastewater

**Project Name:** **Replacement of Sludge Collection Clarifiers 3&4**

**Funding:** $500,000 Wastewater Billings

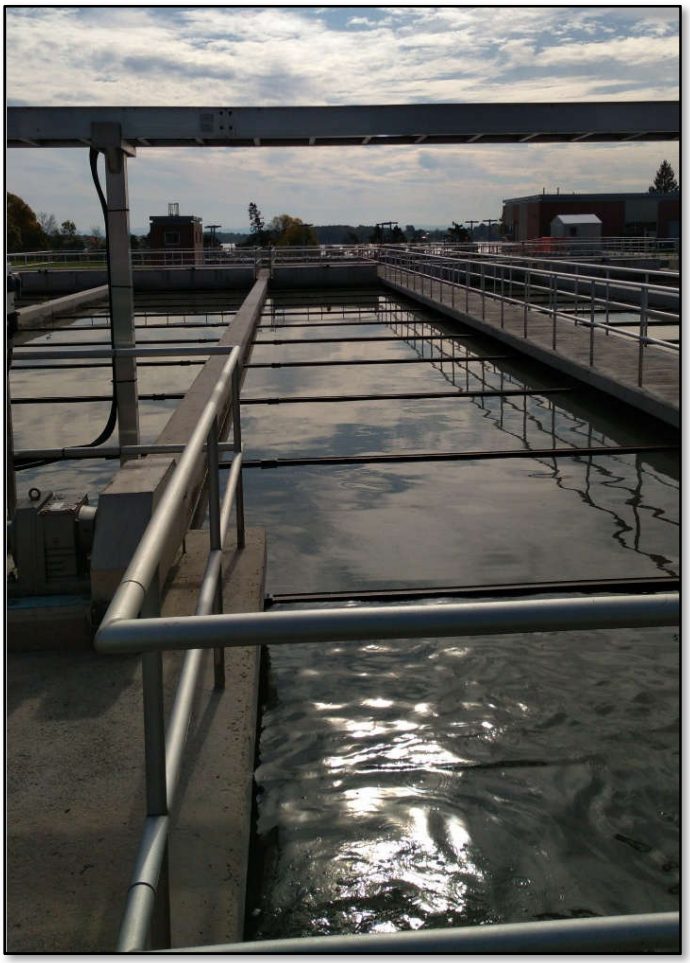
---

The Wastewater Treatment Plant (WWTP) has developed a vision to become net zero for energy and shift towards resource recovery at the plant. As part of the plant's net zero project, it has identified that biosolids, organics and resource recovery will be important components to realizing the potential of net zero and achieving significant ecosystem benefit.

This project will complete the replacement of the sludge collection systems. The sludge collection systems collect the solids (sludge) that are settling in the clarifiers and direct them with paddles and chains into the sludge pumps, which pump the sludge into the digesters. The sludge collection system operates in a harsh environment with grit and corrosive treatment chemicals which slowly wear down the paddles and chains necessitating replacement.

The sludge collection systems replacement in clarifiers 1&2 was completed in 2019. This project will see the replacement of sludge collection systems in clarifiers 3&4.

This project contributes to the plant's net zero project, as enhanced sludge collection has been identified as a source for energy and resource recovery.



# Environmental Services - Wastewater

**Project Name:** **Pumphouse Wall Brick Replacement**

**Funding:** $80,000 Wastewater Billings

---

As part of a condition assessment of the Wastewater Treatment Plant (WWTP) facility, it has been identified that the brick on the north and west side of the pumphouse has reached end of life.

This project will require a qualified contractor to replace the existing brick, which is spalling and deteriorating. In addition, the replacement of the existing windows will be considered if it falls within the budget. The brick replacement, along with the accompanying window replacement, would serve to increase the insulation value of the wall and reduce energy costs.


# Environmental Services - Wastewater

**Project Name:** **HVAC Upgrade**

**Funding:** $170,000 Wastewater Billings

---

The Wastewater Treatment Plant (WWTP) has a preventative maintenance program and a quality control system including laboratory facilities to assure that the effluent quality standards and objectives are maintained within the Certificate of Approval (CofA). The CofA sets the requirement that the WWTP is to be maintained within the manufacturers' recommendations and uses an annual reporting system for quality management to ensure the integrity of the wastewater treatment system.

The HVAC system for the administration building and pumphouse at the WWTP has reached the end of its useful life. This project would replace the existing HVAC system with a new and more efficient alternative. The project would save electricity and natural gas, with a return on investment of approximately 8 years.

# Environmental Services - Wastewater

**Project Name:** **Insulation in Digester Area**

**Funding:** $65,000 Wastewater Billings

---

The Wastewater Treatment Plant (WWTP) has developed a vision to become net zero for energy and to shift towards resource recovery at the plant. As part of the WWTP's net zero initiative, it has been identified that biosolids, organics and resource recovery will be important components in realizing the potential of net zero and achieving significant ecosystem benefits.

It has been identified that there is heat loss in the piping and specific wall areas within the digesters. This project, as part of the WWTP's net zero initiative, will address the need for proper insulation in the digester area.

Digesters are heated to 38°C and have underground piping systems which run through tunnel systems. Temperatures surrounding the digesters operate between 15°C and 20°C. Currently, natural gas boilers make up for this heat loss. A contractor will be commissioned to properly insulate these areas. With proper insulation, this project would allow for savings in natural gas consumption with a return on investment of approximately 4 years.

# Environmental Services - Wastewater

**Project Name:** **Piping and Control for Using Excess Blower Capacity**

**Funding:** $100,000 Wastewater Billings

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This project is also part of the Wastewater Treatment Plant (WWTP) vision to become net zero for energy and to shift towards resource recovery at the plant, achieving significant ecosystem benefits.

Air blowing units at WWTPs direct air to the primary and secondary clarifiers which assist in mixing coagulant chemicals that are added to wastewater. Additionally, the air assists the clarifiers with the settling of solids.

The WWTP's net zero initiative has identified that the air blowers used for the secondary plant have excess capacity. This project would commission a qualified contractor to design and install piping and control systems to direct the excess capacity from the secondary clarifier to the primary clarifiers. This will reduce the number of operating blowers from six units to one unit. All other blower units would remain in place for use during maintenance events and redundancy purposes. The project would save approximately 370,000 kwh per year. The return on investment of this project is approximately 3 years.

# Environmental Services - Wastewater

**Project Name:** **Energy Generation**

**Funding:** $60,000 Wastewater Billings

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This project would study and make a recommendation on the method and equipment to take the methane gas currently flared (wasted) and produce electricity. The project would save natural gas and electricity. Energy Generation equipment is required if the plant is to realize it's net zero vision. It is expected that the WWTP could achieve net zero within 3 years of installation and commissioning of energy generation equipment with conversion to electricity for use in the plant. The capital expenditure of the equipment once selected would be in the order of $2 million dollars with a return on investment of approximately 5 years.

Please note a companion project would be the installation of equipment that would convert biosolids into fertilizer. There is currently a market in the region for the biosolids based fertilizer and market research suggests the biosolids plant would turn a profit within 6 years. The landfill site would benefit from this project, as it would reduce biosolids sent to the landfill and thus extending its life. This equipment would have a capital cost of approximately $4 million dollars.

An FCM grant application has been submitted for a feasibility study of the above mentioned items. The feasibility study will lead to potential grant funding opportunities for these projects.

# Environmental Services - Joint Infrastructure

**Project Name:** **Asset Management Plan Update**

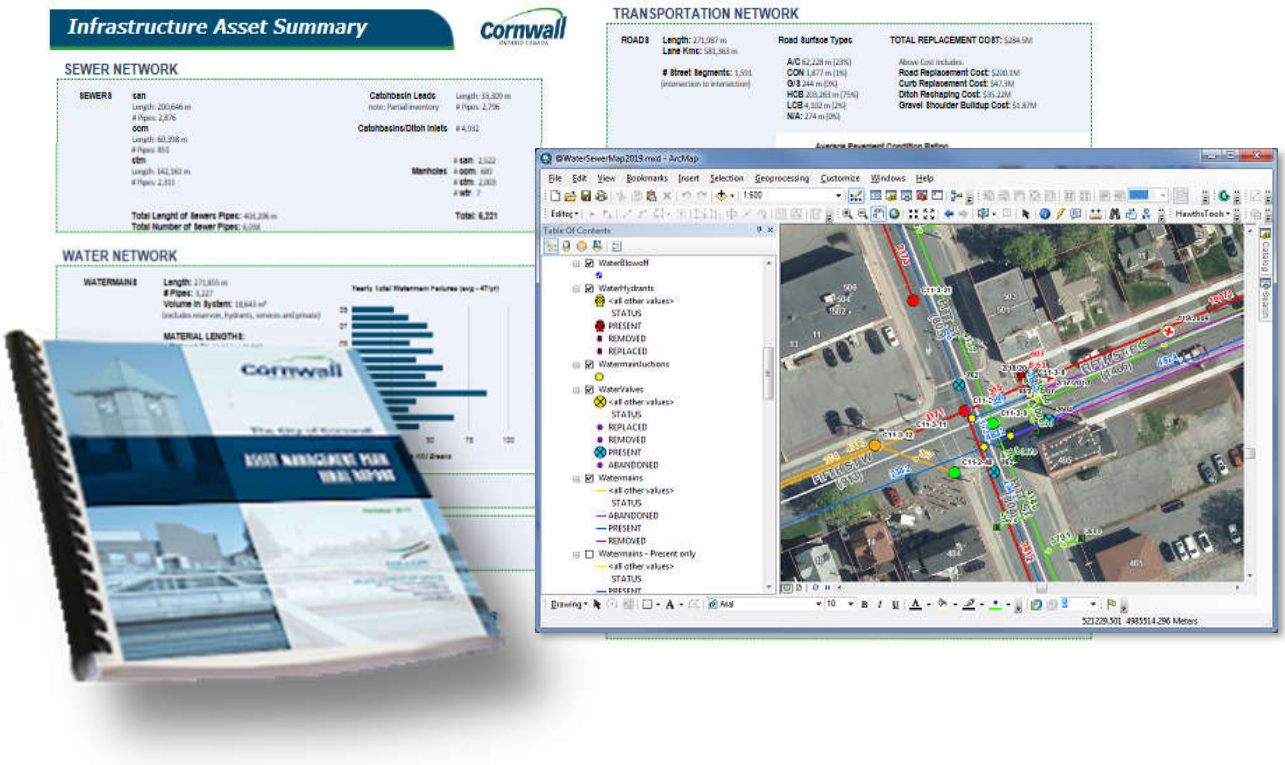
**Funding:**
$ 50,000 Water Works Reserve
$ 50,000 Wastewater Works Reserve
$ 50,000 Road Infrastructure Reserve (Taxation Budget)
$150,000

---

Asset Management Planning guides the city in making the best possible decisions regarding the operation, maintenance, replacement, renewal and disposal of linear infrastructure assets. An Asset Management Plan (AMP) provides detailed information on the characteristics and current condition of existing infrastructure assets and describes how they should be managed over their lifecycle. The objective of asset management planning is to maximize benefits, manage risk, and provide satisfactory levels of service to the public in a sustainable manner. It also involves strategic financial planning and priority setting to ensure that the lifespan of existing infrastructure assets are maximized, and that long-term capital plans for the rehabilitation and replacement of assets align with projected available financial resources.

The first AMP for linear infrastructure assets within the City was created in 2006 and subsequently updated in 2014, and again in 2016 when a more comprehensive plan was prepared that included a review and analysis of City owned fleet and buildings. Both the City's current Asset Management Policy and provincial regulations state that AMPs must be reviewed, at minimum, every five years.

It is recommended that the AMP be updated in 2020 in order to meet the requirements of the City's Asset Management Policy as well as new regulations for municipal asset management planning within the province of Ontario. As part of the implementation of O.Reg 588/17 – *Asset Management Planning for Municipal Infrastructure Regulation,* it has been mandated that municipalities have an up-to-date and approved AMP for linear infrastructure assets that identifies current levels of service and the cost of maintaining those service levels by July 1, 2021.



# Environmental Services - Joint Infrastructure

**Project Name:** **York St. Reconstruction – Seventh St. to Ninth St.**

**Funding:** $1,600,000 Financing

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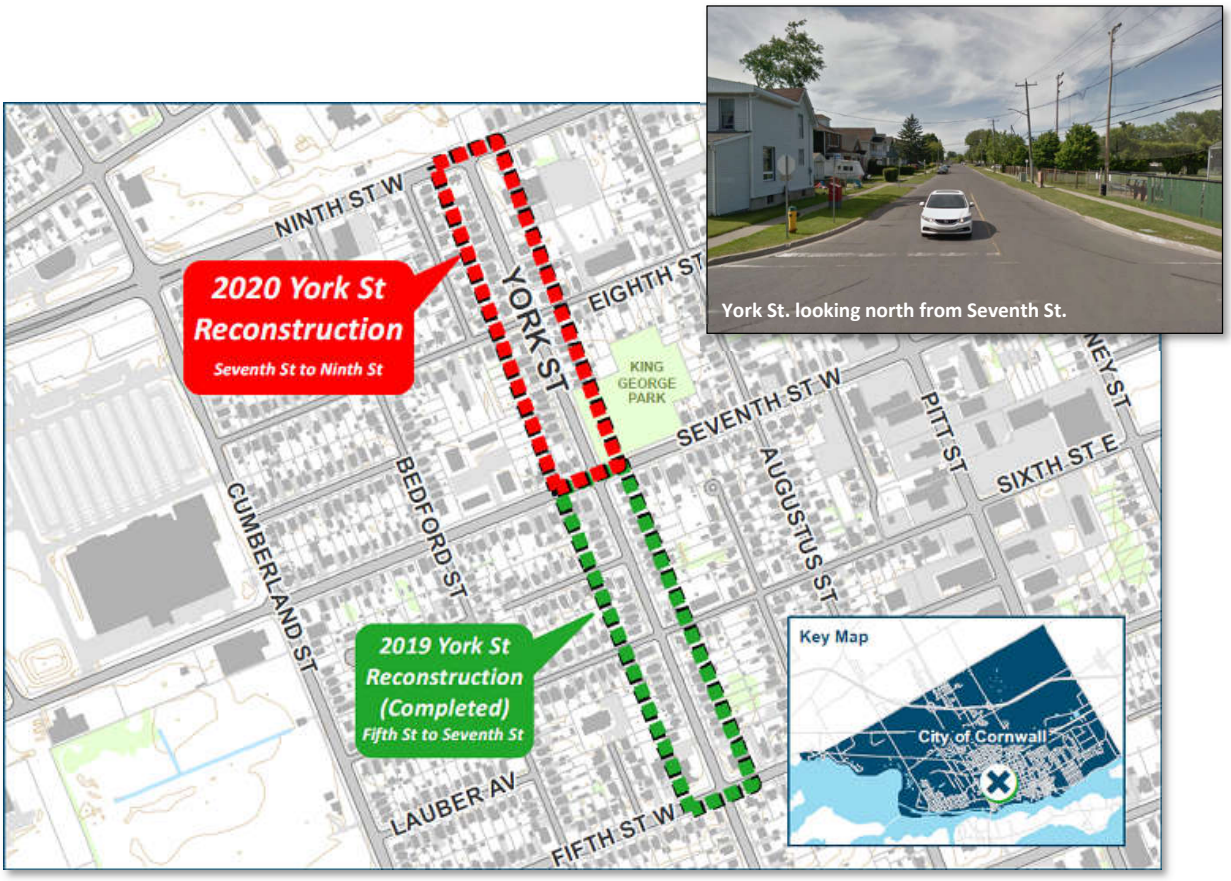
Joint infrastructure projects are typically the complete reconstruction of sewer, water and roadway infrastructure. Projects selected require underground facility upgrades, such as sewer separation, watermain replacement, etc. Since the road must be reinstated as part of the underground work, candidates where the road is in poor condition are good joint infrastructure projects in order to maximize the life of the roadway.

In 2019, the first phase of the York St. Reconstruction project was completed from Fifth St. to Seventh St. In 2020, the second phase of the York St. Reconstruction project is proposed from Seventh St. to Ninth St.

The reconstruction of York St. from Seventh St. to Ninth St. is recommended as a joint infrastructure project for 2020 because both the sewer and watermain are in poor condition and nearing the end of service life, sewer separation is required, and the road and sidewalks are in poor condition.



# Environmental Services - Joint Infrastructure

**Project Name:** **Sydney St. Reconstruction – Fourth St. to Fifth St.**

**Funding:**
$ 550,000 Water Billings
$ 550,000 Wastewater Billings
$1,100,000

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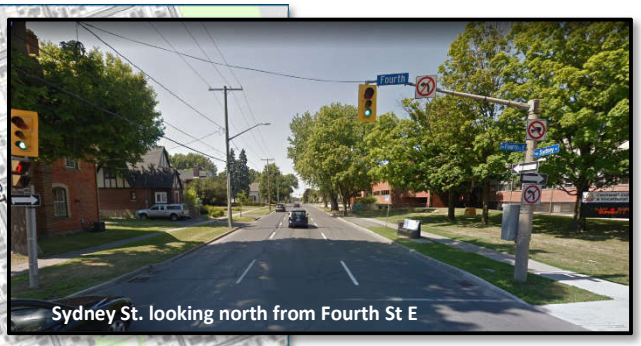
As noted, joint infrastructure projects are typically the complete reconstruction of sewer, water and roadway infrastructure. Projects selected require underground facility upgrades, such as sewer separation, watermain replacement, etc. Since the road must be reinstated as part of the underground work, candidates where the road is in poor condition are good joint infrastructure projects in order to maximize the life of the roadway.

In 2019, the first phase of the Sydney St. Reconstruction project was completed from Second St. to Fourth St. In 2020, the second phase of the Sydney St. Reconstruction project is proposed from Fourth St. to Fifth St. The reconstruction of Sydney St. will continue north two blocks at a time in subsequent years. The Sydney St. Reconstruction project from Fourth St. to Fifth St. will be coordinated with the reconstruction of Fifth St. from Amelia St. to Sydney St. Both capital projects proposed for 2020 will be issued in the same tender and completed by the same contractor.

The reconstruction of Sydney St. from Fourth St. to Fifth St. is recommended as a joint infrastructure project for 2020 because the underground infrastructure (water and sewer) is in poor condition and reaching the end of service life, sewer separation is required, and the road and sidewalks are in poor condition.

Sydney St. looking north from Fourth St E

2019 Sydney St. Reconstruction – Second to Fourth

# 2020 TEN YEAR CAPITAL FORECAST

**CAPITAL FORECAST**
**FOR THE YEARS 2020 - 2029**

**WATER DISTRIBUTION**

| LOCATION | FROM | TO | EXPENDITURE 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WATER DISTRIBUTION** | | | | | | | | | | | | |
| Watermain Rehabilitation | | | | | | | | | | | | |
| - Improvements to system throughout the City | | | 2,000 | 2,050 | 2,100 | 2,150 | 2,200 | 2,250 | 2,300 | 2,350 | 2,400 | 2,450 |
| - Vincent Massey | Tollgate Rd. | End | | 3,000 | 5,000 | | | | | | | |
| - Pitt St. | Tollgate Rd. | Cornwall Centre Rd. | | | | 5,000 | | | | | | |
| System Growth - New Watermain | | | | | | | | | | | | |
| - Powerdam Dr. | Riverdale Ave. | Tollgate Rd. | 550 | | | | | | | | | |
| - Other System Growth/Protection Projects | | | | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| **WATER DISTRIBUTION** | | | 2,550 | 5,550 | 7,600 | 7,650 | 2,700 | 2,750 | 2,800 | 2,850 | 2,900 | 2,950 |

# 2020 TEN YEAR CAPITAL FORECAST

**CAPITAL FORECAST**
**FOR THE YEARS 2020 - 2029**

**WATER PURIFICATION PLANT**

| LOCATION | EXPENDITURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Water Purification Plant Building Addition and Renovations | 225 | | | | | | | | | |
| Supervisory Control and Data Accquisition (SCADA) Upgrades | 400 | | | | | | | | | |
| Raw Water Intake Redundancy Environmental Assessment | 125 | | | | | | | | | |
| *Plant Upgrades / Process Improvements estimated for 2021 - 2029* | | 800 | 850 | 900 | 950 | 1,000 | 1,030 | 1,060 | 1,090 | 1,120 |
| **WATER PURIFICATION PLANT** | 750 | 800 | 850 | 900 | 950 | 1,000 | 1,030 | 1,060 | 1,090 | 1,120 |

# 2020 TEN YEAR CAPITAL FORECAST

**CAPITAL FORECAST**
**FOR THE YEARS 2020 - 2029**

**WASTEWATER COLLECTION**

| LOCATION | EXPENDITURES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| **Sewer Collection Program** | | | | | | | | | | |
| - Sewer Network Improvements | 1,050 | 850 | 865 | 880 | 895 | 910 | 930 | 950 | 970 | 990 |
| **Storm & Combined Sewer Separation** | 700 | 700 | 700 | 715 | 730 | 750 | 770 | 790 | 810 | 830 |
| *See appendix* | | | | | | | | | | |
| **WASTEWATER COLLECTION** | 1,750 | 1,550 | 1,565 | 1,595 | 1,625 | 1,660 | 1,700 | 1,740 | 1,780 | 1,820 |

# 2020 TEN YEAR CAPITAL FORECAST

**CAPITAL FORECAST**
**FOR THE YEARS 2020 - 2029**

**WASTEWATER COLLECTION**

| LOCATION | FROM | TO | EXPENDITURES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| **Storm and Combined Sewer Separation at Various Locations** | | | | | | | | | | | | |
| - Water St. | Amelia | Marlborough | 500 | | | | | | | | | |
| - Amelia St. | Montreal | First | 200 | | | | | | | | | |
| - First St. | Marlborough | Gloucester | | 200 | | | | | | | | |
| - Third St. | Marlborough | Gloucester | | 200 | | | | | | | | |
| - Bedford | First | Second | | 300 | | | | | | | | |
| - Amelia | Third | Fourth | | | 160 | | | | | | | |
| - York | Fourth | Fifth | | | 380 | | | | | | | |
| - Aubin | Fourteenth | Fifteenth | | | 160 | | | | | | | |
| - Anthony St. | Montreal | Easton | | | | 350 | | | | | | |
| - First | Lawrence | Gloucester | | | | 225 | | | | | | |
| - First | Baldwin | Lawrence | | | | 140 | | | | | | |
| - Abbot St | Eleventh St W | South Limit | | | | | 170 | | | | | |
| - Eighth | Augustus | York | | | | | 170 | | | | | |
| - Yates | Second | Third | | | | | 120 | | | | | |
| - Fifth St. | York | Bedford | | | | | | 300 | | | | |
| - Adolphus St. | Fourth | Fifth | | | | | | 160 | | | | |
| - Eighth | York | Cumberland | | | | | | 170 | | | | |
| - Fifth St. | McConnell | Marlborough | | | | | 170 | | | | | |
| - Lauber | Bedford | Cumberland | | | | | | | 110 | | | |
| - Third St. | Amelia | Adolphus | | | | | 100 | | | | | |
| - Fourth St. | Midblock (W) | Adolphus | | | | | | | 200 | | | |
| - Fourth St. | Gloucester | Adolphus | | | | | | 120 | | | | |
| - Fourth St. | Midblock (W) | Marlborough | | | | | | | 100 | | | |
| - Victoria St. | First | Gloucester | | | | | | | 85 | | | |
| - Victoria St. | Marlborough | Gloucester | | | | | | | | 100 | | |
| - Walton St. | Alice | Guy & Louisa | | | | | | | 200 | | | |
| - Bergin St. | Race | Water | | | | | | | | 90 | | |
| - Additional Square Mile Projects | | | | | | | | | 75 | 600 | 810 | 830 |
| **WASTEWATER COLLECTION** | | | 700 | 700 | 700 | 715 | 730 | 750 | 770 | 790 | 810 | 830 |

# 2020 TEN YEAR CAPITAL FORECAST

**CAPITAL FORECAST**
**FOR THE YEARS 2020 - 2029**

**WASTEWATER TREATMENT PLANT**

| LOCATION | EXPENDITURES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Replacement Sludge Collection Clarifiers 3&4 | 500 | | | | | | | | | |
| Pumphouse Wall Brick Replacement | 80 | | | | | | | | | |
| HVAC Upgrade | 170 | | | | | | | | | |
| Insulation in Digester Area | 65 | | | | | | | | | |
| Piping and Controls for Using Excess Blower Capacity | 100 | | | | | | | | | |
| Energy Generation | 60 | | | | | | | | | |
| *Treatment System Upgrades estimated for 2021-2029* | | 1,100 | 1,200 | 1,300 | 1,400 | 1,440 | 1,480 | 1,520 | 1,575 | 1,620 |
| **WASTEWATER TREATMENT PLANT** | 975 | 1,100 | 1,200 | 1,300 | 1,400 | 1,440 | 1,480 | 1,520 | 1,575 | 1,620 |

# 2020 TEN YEAR CAPITAL FORECAST

**CAPITAL FORECAST**
**FOR THE YEARS 2020 - 2029**

**JOINT INFRASTRUCTURE PROJECTS - (WATER / SEWER)**

| LOCATION | FROM | TO | EXPENDITURES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| **JOINT INFRASTRUCTURE** | | | | | | | | | | | | |
| Asset Management | | | 100 | | | | | | | | | |
| York St. | Seventh St. | Ninth St. | 1,600 | | | | | | | | | |
| Sydney St. | Fourth St. | Fifth St. | 1,100 | | | | | | | | | |
| Sydney St. | Fifth St. | Seventh St. | | 2,300 | | | | | | | | |
| Sydney St. | Seventh St. | Eighth St. | | | 1,300 | | | | | | | |
| Sydney St. | Eighth St. | Ninth St. | | | 1,100 | | | | | | | |
| Third St. | York St. | Bedford St. | | | | 1,100 | | | | | | |
| Third St. | Bedford St. | Cumberland St. | | | | 1,300 | | | | | | |
| Lawrence Ave. | Montreal Rd. | Second St. | | | | | 1,300 | | | | | |
| Gloucester St. | Water St. | First St. | | | | | 1,100 | | | | | |
| Gloucester St. | Aberdeen St. | Second St. | | | | | | 900 | | | | |
| Race St. | Water St. | Marlborough St. | | | | | | 1,600 | | | | |
| Eighth St. | Sydney St. | Adolphus St. | | | | | | | 2,500 | | | |
| Eighth St. | Adolphus St. | Marlborough St. | | | | | | | | 2,500 | | |
| Future Projects | | | | | | | | | | | 2,550 | 2,600 |
| **JOINT INFRASTRUCTURE** | | | 2,800 | 2,300 | 2,400 | 2,400 | 2,400 | 2,500 | 2,500 | 2,500 | 2,550 | 2,600 |

## Key Assumptions

Following the key assumptions outlined for the City's LTFP, the financial forecast for the years 2021-2023 (multi-year budget) encompasses a number of key assumptions that are used to project the City's anticipated financial performance, including the following:

Operating expenses

Salary and benefit related costs are projected to increase at an average rate of 2.5% per year based upon our financial model. This reflects settlements under the City's collective bargaining agreements, corresponding increases for non-union personnel, and increases in benefit costs and other staffing adjustments.

Costs for materials and goods are projected to increase at a rate of 1.0% per year, which represents the assumed general increase in energy costs due to inflation and the impact of saving initiatives undertaken by the City.

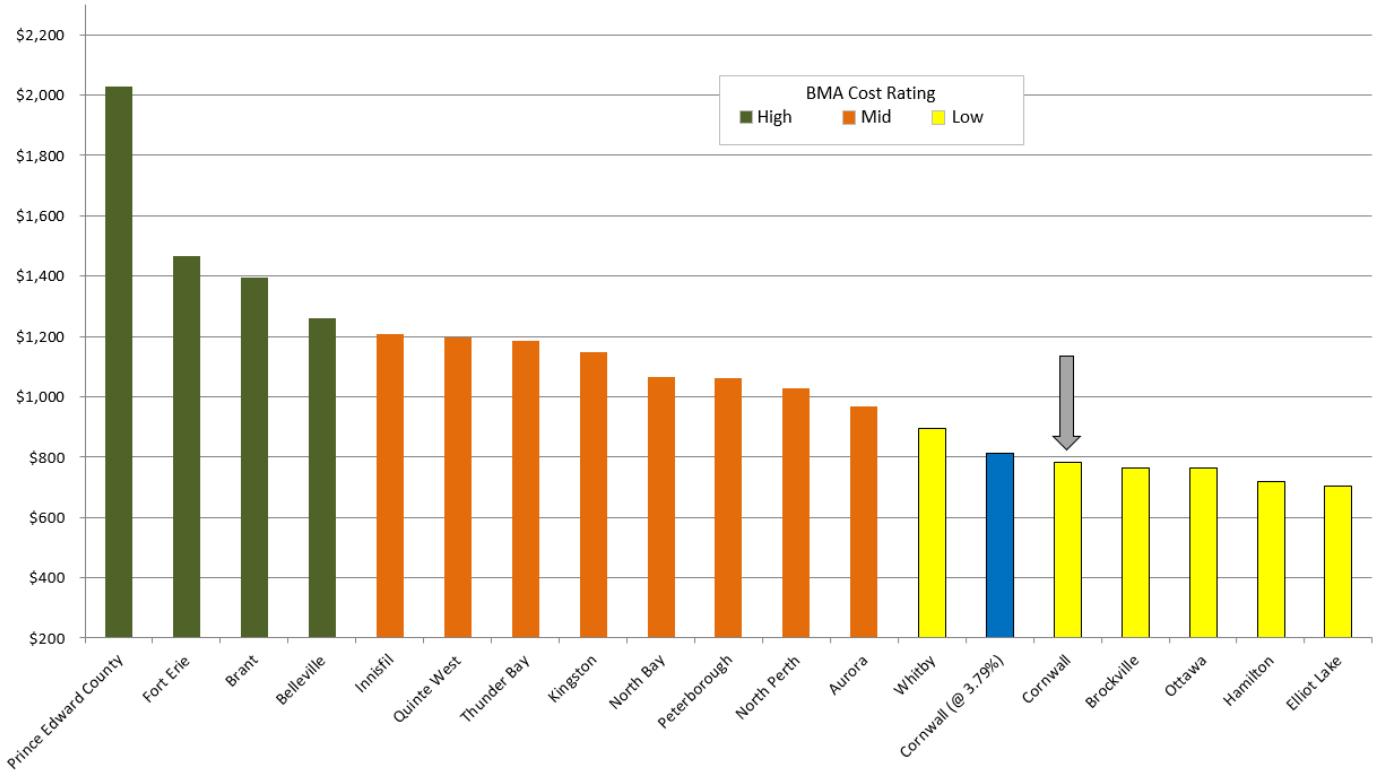
Other operating expenses are projected to increase at a rate of 3.0% per year, which represents the assumed general rate of increase in operating costs due to inflation and the impact of regulatory changes.

Capital

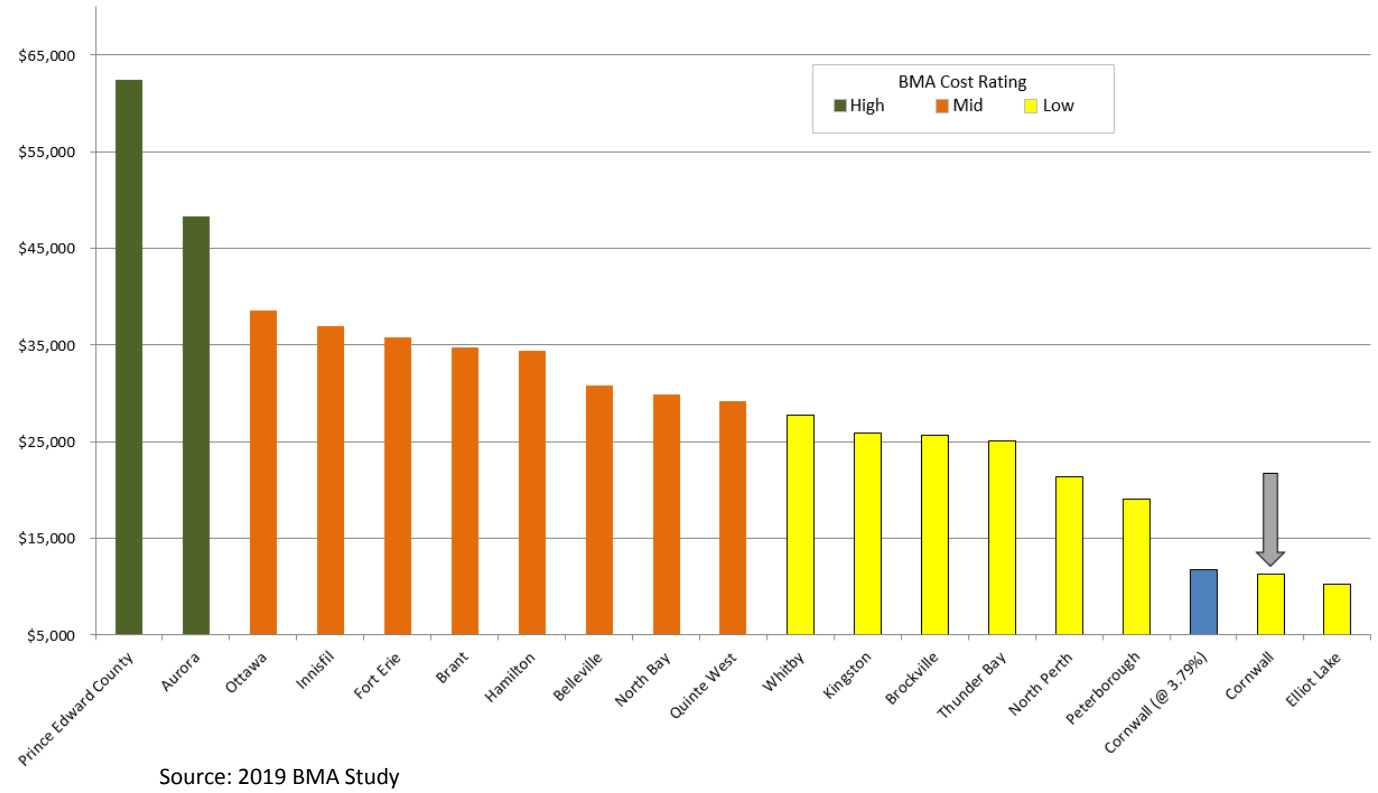
Projected capital expenditures and associated funding (based on financial policy recommendations) for the years 2020 to 2029 are based on the City's AMP, which is reviewed annually.

# Municipal Comparators

## Residential Water / Wastewater Costs per 200m³




## Commercial Water / Wastewater Costs per 10,000m³




Source: 2019 BMA Study