

Information Report



Service Area	Infrastructure, Development and Enterprise Services
Date	Friday, March 6, 2020
Subject	2019 Wastewater Services Update
Report Number	IDE-2020-28

Executive Summary

Purpose of Report

To provide an overview of Wastewater Services programs including the successes and key achievements for 2019.

Key Findings

Wastewater Services' commitment to environmental protection drives our programs. Staff are continually improving processes and seeking innovative ways to protect our planet through the re-use of biosolids, implementing new education programs and investigating ways to achieve the City's goal of Net Zero Carbon by 2050. The Wastewater Treatment plant has been recognized by the Grand River Conservation Authority (GRCA) at the silver level for efforts to improve the water quality of the Speed River.

Report

This report is designed to provide feedback to Council on the services that the teams within wastewater services have provided the community over the course of 2019.

Details

Wastewater Services is responsible for the operation and maintenance of a Class III Wastewater Collection system and a Class IV Wastewater Treatment Plant, as well as, environmental protection through the enforcement of the sewer use by-law

Sanitary sewage flows by gravity from people's homes and businesses through a series of collection pipes and pump stations to the Wastewater Treatment plant. It is imperative that the wastewater collection system be maintained to ensure the removal of blockages that could cause back-ups into people's homes and businesses or even into the environment. In order to facilitate that, wastewater collection staff have:

- Flushed 107 km of pipe through the preventative maintenance program for the sanitary system

- Staff also responded to 429 service calls to peoples' homes for sewer blockages

The Wastewater Treatment Plant treats the sanitary sewage three times before it is released into the river. In 2019, 20.6 billion liters of wastewater was treated to the highest quality before being released to the Speed River. This equates to an average daily flow of 56,580m³ or approximately 56 million liters per day. The treatment plant used 90% of biogas generated through the digestion process as a fuel source for the cogeneration of electricity for on-site use. Projects are being explored with Facilities and Energy Management to use 100% of the biogas. The treatment plan also beneficially reuses 100% of biosolids produced through land application as a fertilizer product.

For the second year, the wastewater treatment facility was recognized by the GRCA as a silver recipient for efforts to improve the water quality of the Speed River. This year the collection system was upgraded from a Class II to a Class III in order to reflect the changes to system since the previous Ministry assessment.

The sewer use by-law helps protect the environment and wastewater infrastructure through education and outreach and enforcement activities. The Environmental Protection Officers conducted over 600 industrial inspections. They also responded to 398 calls for spills mitigation, often supporting Guelph Police Service and Guelph Fire Department at motor vehicle accidents.

Sample Collection

Samples are collected and analyzed for process control, compliance reporting and river quality monitoring. The wastewater treatment operations team collected and analyzed just over 11,000 samples in 2019. This process control sampling enables the existing infrastructure to be fully utilized.

Our onsite accredited laboratory performed over 5000 tests in 2019. The majority of these results were used to report to the Ministry of Environment, Conservation and Parks (MECP) on the performance of the wastewater treatment plant against the facilities environmental compliance approval (ECA). The results of these tests were all within the compliance limits.

As a proactive measure, in 2019 the Environmental Protection team continued with the river sampling program. This program entails 6 sample sets taken at 5 different locations throughout the year. Each location is analyzed for 40 parameters per sampling event. This data provides quality assurance of water incoming and exiting the Speed and Eramosa rivers. A total of 360 samples were collected in 2019. This baseline data can be used to help determine the impact of an environmental spill that reaches the Eramosa or Speed River.

A collaborative approach between Wastewater Services and other City departments

The collaborative approach between Wastewater Services, Engineering and Transportation Services and Facilities and Energy Management aligns with the strategic plan priorities of Sustaining our Future and Building our Future and ensures a full service wastewater program that all customers can rely on.

- Wastewater Services continued to build a strong health and safety culture. Working with Health and Safety, wastewater uses metrics such as near miss reporting and safety related work orders to track progress. An innovative approach to contractor safety orientation, with the use of video training and sign off is required prior to any contractor work commencing. In 2019, 58 different contractors went through this orientation program, meaning that 133 contractors were well aware of our safety first culture before they started work
- Wastewater Services successfully completed the biennial MECP inspection in the Spring of 2019.

An Environmental Management System is currently under development to support a quality management approach to delivering wastewater services and supporting compliance requirements.

- Working with Engineering and Transportation Services to manage wastewater infrastructure
In 2019 Wastewater services continued to work closely with Engineering and Transportation which resulted in enhanced collaboration through the support of capital projects involving sanitary bypasses. As part of the Environmental Services team, Wastewater is also participating in the development of a work order management program continued to improve through enhanced work order and preventative maintenance programs. This will inform the Corporate Asset Management Program.
- Wastewater continues to be engaged in benchmarking operational metrics with municipal comparators across Canada.
Metrics are the backbone of evidence based decision making. The Water and Wastewater Benchmarking Initiative allows the City to review best practices of wastewater delivery across the country. This enables the identification of continuous improvement opportunities and sharing of best practices
- Collaborating with Facilities and Energy Management for energy efficiency projects
The aeration basin blower and controls upgrades that will result in significant energy savings as well as seeking opportunities to further enhance and optimize the biosolids gas program are two examples of such collaborative projects underway.

Meaningful Exchange of Information

Identifying strategic partnerships with regulators, industry experts, consultants and universities provides opportunities for the meaningful exchange of information to address future challenges in the wastewater industry.

In 2019, staff initiated a feasibility study to investigate water re-use. Recommendations for a practical and implementable Reclaimed Water Program with an initial focus on sanitary sewer flushing is expected by the end of the first quarter 2020. Building partnerships with our regulator is something we continually strive towards. For the third year, Wastewater Services opened up our doors to provide

the MECP with a training ground for new Water Program inspectors from across Ontario.

In kind support was provided through special sample requests for ongoing research at the Ontario Water Consortium research facility. Involvement with such research increases awareness of innovative solutions and emerging technologies to address possible regularity changes.

Customer Service and outreach programs

Customer Service and outreach programs support our community and share the value and availability of the services provided. An important part of the work Wastewater Services does to protect the environment is to educate the public on ways we can work together to take care of the sanitary sewer system. Wastewater Services regularly opens our doors for tours and 42 tours were conducted in 2019 that represented over 800 guests. Many were grade 8 students through our partnership with the GRCA Water program, while other guests were made up of academics, peer groups and industry partners. Wastewater also completed a video to highlight all of the services our team provides the community.

A very important outreach program was initiated in 2019 to support the restaurants in the downtown. Backups at restaurants can be caused by fats, oil and grease disposals in the sanitary system. Fats, oils and grease can also impact the collection pipes and cause wide spread back-ups. The environmental protection team completed the inaugural year to inform and educate restaurateurs of the importance of proper fats, oils and grease disposals and the effects downstream of improper handling. Sixty of a possible 142 restaurants were approached in 2019, and this program will continue. The added benefit of this program could be reduced flushing in areas which are prone to fat buildups.

Financial Implications

All financial implications related to this report are already accounted for in the approved Wastewater Operating and Capital budget.

Consultations

Departmental consultation completed in support of the 2019 Wastewater Services Update Report, include:

- Engineering and Transportation Services
- Facilities and Energy Management
- Finance, Client Services – Environment Services Corporate Analyst

Strategic Plan Alignment

This report is aligned with the Strategic Plan Priorities of Sustaining our Future by providing wastewater collection and treatment in a sustainable way, Building our Future by maintaining and replacing wastewater assets and Working Together for Our Future through our collaborative approach for the delivery of all Wastewater Services

Departmental Approval

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