




INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	June 14, 2021
SUBJECT/REPORT NO:	Sewer Use By-law Program 2020 Annual Update (PW21036) (City Wide)
WARD(S) AFFECTED:	City Wide
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COUNCIL DIRECTION

Not Applicable

INFORMATION

This report serves to provide an update to Committee on the progress and successes of the Sewer Use By-law Program for 2020.

Public Works Committee at its meeting of April 7, 2014, approved the new Sewer Use By-law (PW13061a), which was then subsequently enacted by Council and came into force on May 1, 2014. At the time, Hamilton Water made a commitment to provide an information report, outlining the status of the Sewer Discharge Permit Program, as well as other general Sewer Use By-law Program highlights, to the Public Works Committee on an annual basis.

The City of Hamilton's Sewer Use By-law (SUB) regulates discharges to the City of Hamilton's (City) storm, sanitary, and combined sewers from industrial, commercial and institutional (IC&I) facilities, and residential units. It also regulates the conveyance and

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OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

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disposal of hauled sewage. It establishes limits for common pollutants and prohibited substances, and details requirements that users need to meet to discharge to the City's sewer infrastructure.

The current SUB No. 14-090 is an administrative re-write from the original 1988 SUB. In 2009, the Canadian Council for Ministers of Environment (CCME) produced a new model Sewer Use By-law (CCME Model By-law) to assist municipalities with addressing sources of contaminants in wastewater and the inclusion of provisions considered "industry standards". In response, the current SUB was written by Hamilton Water and Legal Services staff to promote clarity and ease of use as well as fair and consistent administration and enforcement. The environmental impacts would be significant without regulating dischargers through enforcement of the SUB. Examples include:

- Clogged or damaged sewers and pipes;
- Risk of impairment of the sewage treatment processes;
- High nutrients contributing to eutrophication of water bodies through algal blooms; and,
- Heavy metals and emerging contaminants that are toxic and can bioaccumulate in the food chain.

The mandate of the Environmental Monitoring and Enforcement (EME) Unit in the Hamilton Water (HW) Division of Public Works is to ensure a healthy environment and elevate trust and confidence in Hamilton Water's services through innovative risk assessment, mitigation and compliance programs. The unit is responsible for the administration and enforcement of SUB No. 14-090 which is in place to protect the City's sewer infrastructure, wastewater treatment facilities and the natural environment. This is achieved via the following activities and programs, an update for many of them are highlighted in this report:

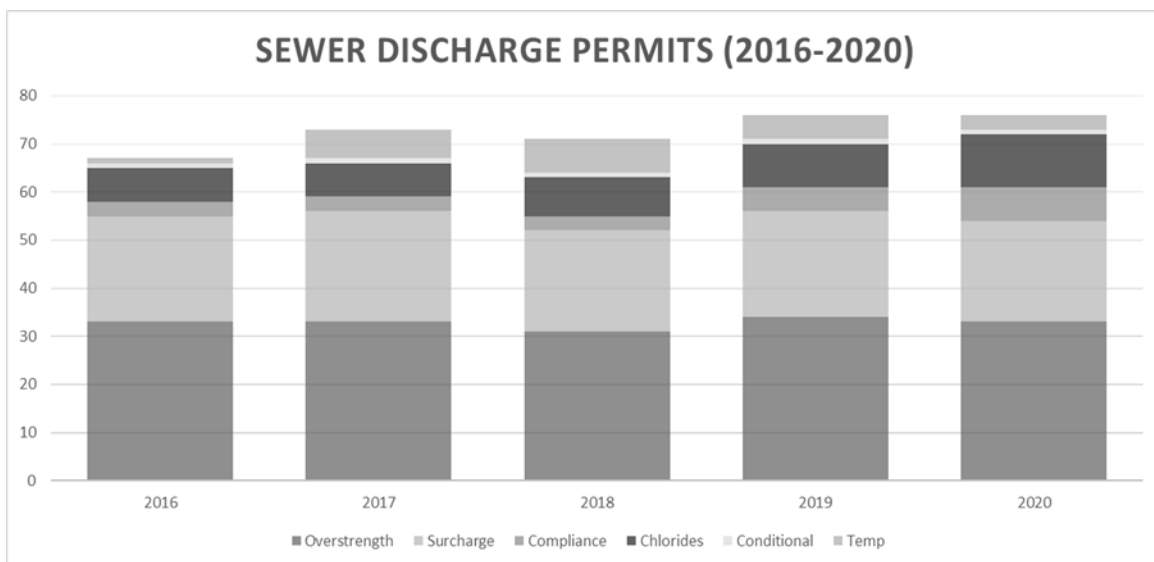
- Sewer Discharge Permitting Program;
- 24/7 Spills Response Program;
- Wastewater Abatement Program (WWAP);
- IC&I Inspection and Risk Assessments;
- Enforcement Action;
- Sampling and Monitoring;
- Hauled Sewage Monitoring Program;
- Community Outreach;
- Sewer Use By-law Updates; and,
- SARS-CoV-2 in Wastewater.

Sewer Discharge Permitting Program

Staff administer various permit types by approving applications and processing quarterly invoices. Typically, permits are issued to IC&I facilities whose discharges do not meet the requirements of the SUB but can be treated effectively at one of the City's wastewater treatment plants and will not adversely affect the condition of the sewer system. Permits are a regulatory tool that allow the City to apply conditions and controls to IC&I facility discharges to the sewer and recover costs associated with conveyance and treatment. There are currently six (6) different types of Permits that can be issued by an Officer, which are explained in detail below. Each discharger must apply to the City with specific details about the discharge which is assessed by EME and Plant Operations staff and only issued once all requirements are met. Except for Compliance and Temporary Permits, each permit is typically issued for a three (3) year cycle. Prior to the expiry date, if a permit is still required, the discharger must re-apply. In 2020, EME managed 76 Permit files, which is the same amount as in 2019.

Overstrength Permit

If a discharger cannot meet the requirements of the Sewer Use By-law for treatable parameters (BOD, TSS, phosphorus, TKN and Oil and Grease (an/veg)) they can opt to pay the City to treat their waste if they don't have real estate or expertise to install their own treatment system. In 2020, there were thirty-three (33) Overstrength Permits, vs. thirty-four (34) in 2019.



Surcharge Permit

If water is discharged to the sewer but has not been purchased from our potable water system, a Surcharge Permit is required to recover the cost of conveying and treating that water. In 2020, there were 21 Surcharge Permits, vs. 22 in 2019.

Chlorides Permit

If a discharger cannot meet the requirements of the Sewer Use By-law for Chlorides; a Chlorides Permit lays out the necessary conditions based on a sewer impact study that the discharger is required to conduct. Also, the study will determine the life span of the sewer and the discharger may be required to pay the City to replace the sewer if it does not last its expected lifespan. In 2020, there were 11 Chlorides Permits, vs. nine (9) in 2019.

Conditional Permit

Controls and applies conditions to discharges from landfill leachate collection systems, or where a higher-level government authority is required. In 2020, there was one (1) Conditional Permit which is the same amount as in 2019.

Temporary Permit

Controls and applies conditions for any of the above discharges that do not exceed a period of six (6) months – tank discharges, site excavations, etc. In 2020, there were three (3) Temporary Permits vs. four (4) in 2019.

Compliance Permit

Provides a discharger with certain controlled exemptions to the SUB for a limited time, to plan and implement treatment works that will bring their discharge into compliance. The business will set out activities to be undertaken that would result in the prevention or reduction and control of the discharge by the date specified in its plan.

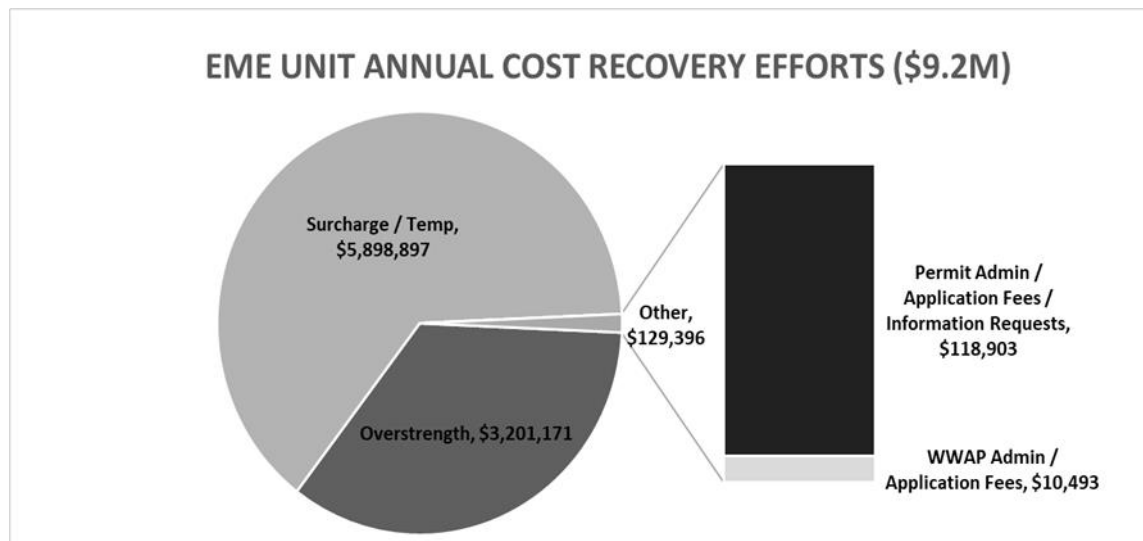
This allows the business to continue to discharge to the City sanitary sewer in excess of the SUB limits, (within certain parameters, conditions and timelines prescribed in the permit) while taking the required corrective action to address and resolve the problem. As part of the permit conditions, the company may be requested to perform sampling and is required to report progress reports regularly to the City. Failure to comply with any aspect of the compliance permit may result in its termination.

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Once the permit expires, the discharger is continually monitored until it is verified that compliance was attained. In 2020, there were seven (7) active Compliance Permits, compared to six (6) in 2019.

Annual Revenue

In 2020, Sewer Discharge Permits generated approximately \$9.2 million in annual revenue, which accounts for the recovery of costs associated with conveying and treating overstrength and surcharge wastewater. This includes approximately \$119,000 for permit administration, application and information request fees being invoiced. In 2019, Hatch (formerly Hatch Mott MacDonald) conducted a review of the rates applied to overstrength permits and hauled wastewaters discharged to the Woodward Avenue Wastewater Treatment Plant. Annual operation and maintenance costs were used to calculate rates for the five (5) treatable overstrength parameters. The 2020 user fees and charges for treatment cost rates, included the information from this review. The chart below shows a breakdown of the 2020 cost recovery efforts.



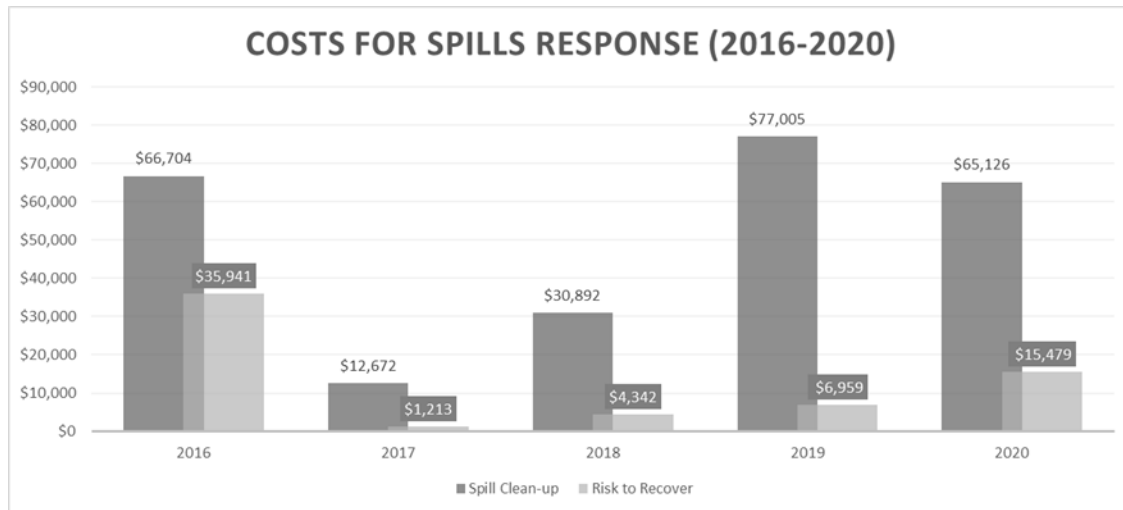
24/7 Spills Response Program

EME staff respond to spills, manage the emergency spills contract, oversee clean-up efforts and evaluate potential enforcement action to protect the integrity of the sewer system and Hamilton's water resources. In 2020 there were 484 spill notifications received, setting another record for the unit. EME's staff experience and skillset are critical in dealing with a variety of situations of various magnitudes. A few themes stood out in 2020 including sanitary floatables calls, odour calls as well as an enhanced sampling level of service by Environmental Enforcement Officers when dealing with calls associated with City infrastructure. A total of 118 spill samples were collected in

2020. Enhanced scrutiny was also experienced from the public and regulatory authorities related to calls associated with City infrastructure. EME continues to build upon relationships with the Ministry of the Environment, Conservation and Parks (MECP) and other City sections to ensure the interests of the community are protected. The responsibility and level of detail and care required to deal with these calls continues to increase and add additional pressures to EME programming, competing for resources with other programs such as the inspection and sewer discharge permit program.



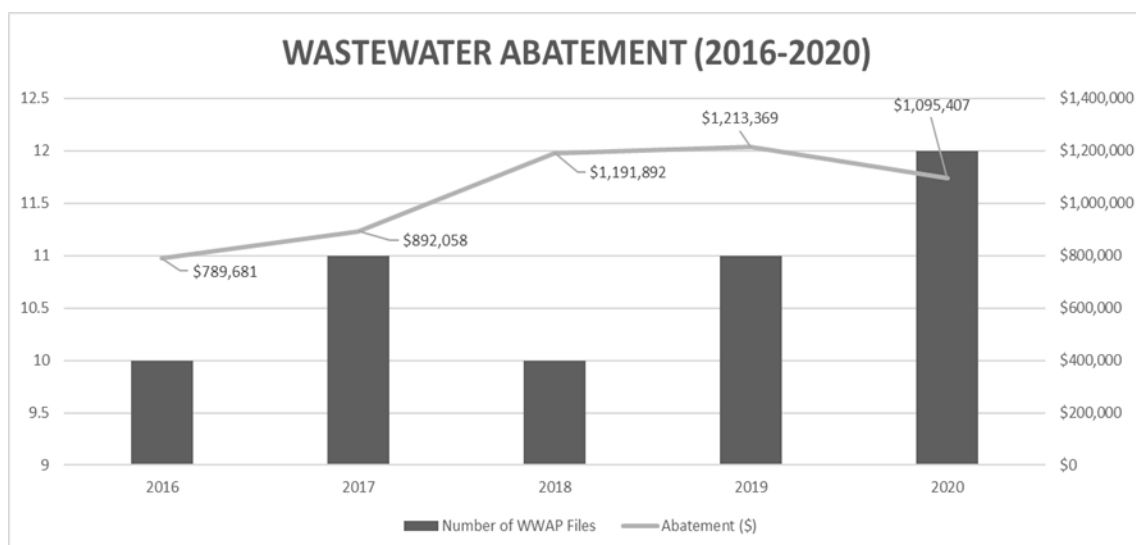
Staff endeavours to ensure spills to the City's sewer infrastructure and natural environment are remediated. This includes having staff investigate the source of the spill and holding the responsible party accountable. EME continues to see an increase in staff time allocated to spills compared to the 2017/2018 average which competes for resources for other programs (e.g. inspections, permits, wastewater abatement, etc.). In 2020, approximately 24% of the \$65,126 spent on spill clean-up was recovered through Risk Management. Cost recovery efforts are continuous and, in some cases, yield results. The corporate-wide Spills Contract is written with clear, specific terms and has been in use since 2017; it was renewed for another one (1) year term starting on May 1, 2021. The spill clean-up and recovered costs are noted in the chart below.



Wastewater Abatement Program (WWAP)

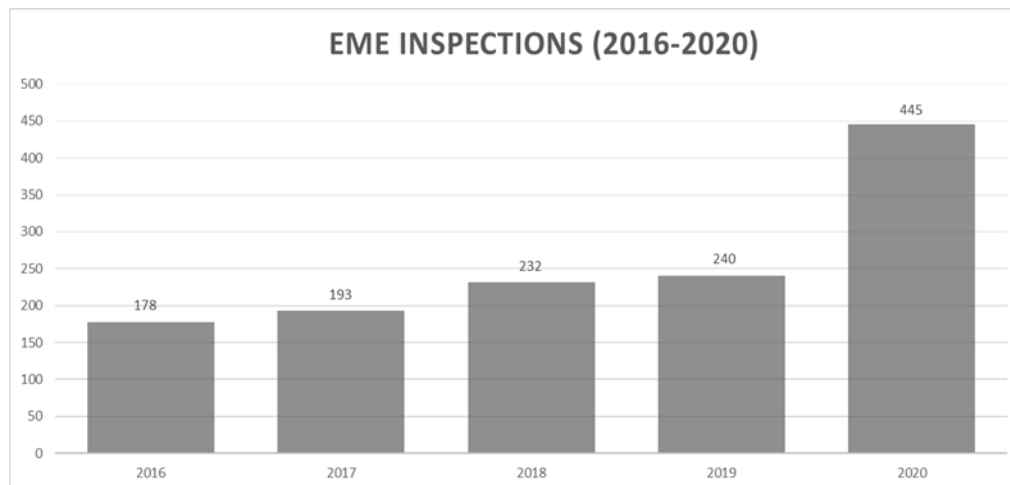
The Wastewater Abatement program allows eligible commercial and industrial ratepayers to apply for an assessment of the flow differential between water use and sewage discharged to the city's sanitary sewer and combined sewer systems. Eligible commercial and industrial consumers include those that divert a minimum of 25% of their purchased potable water from the sewer works.

The chart below summarizes the program statistics over the past five (5) years. The application process is rigorous and expects the discharger to be in compliance with the SUB and maintain good financial standing with the City.



IC&I Inspection & Risk Assessments

In 2020, EME completed 445 inspection work orders, which include a combination of detailed and general site assessments. The 2020 pandemic created a unique opportunity for EME to reprioritize work allocation. The Work from Home directive created the right catalyst to advance the General Property Assessment (GPA) portfolio. The GPA process workflow was introduced in 2016 and has averaged 126 GPAs per year over the past four (4) years. In 2020 426 GPAs were completed. EME supervisory staff hosted a virtual calibration session to ensure workflow understanding and technical knowledge. Emphasis was given to property site plan reviews, including identification of private sanitary and storm infrastructure. Staff also participated in general stormwater management system training ensuring technical abilities of the workforce continue to evolve to meet the future demands of the Division. The long-term goal is to assess all dischargers, assign a risk rating for each one, and ultimately ensure our treatment and conveyance costs are being recovered appropriately. The chart below shows the number of yearly inspection work orders that have been completed.

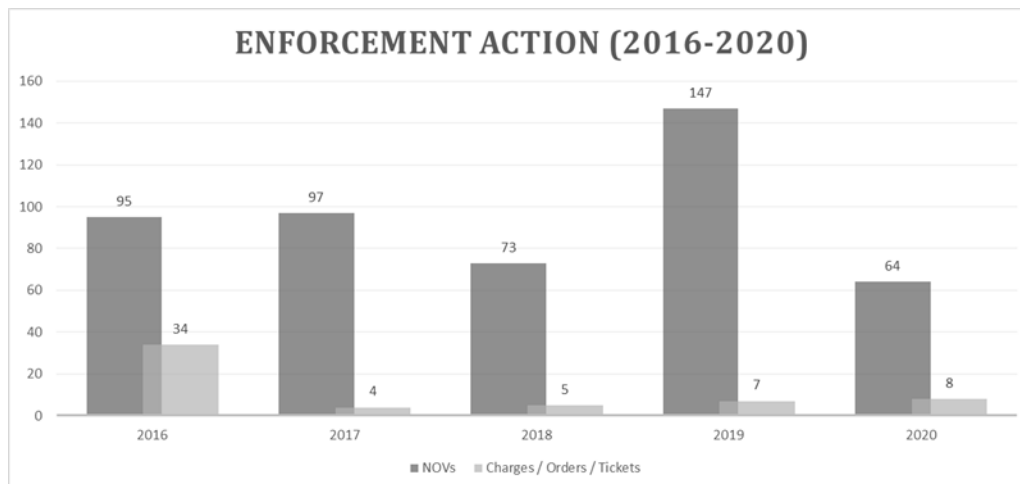


Enforcement Action

EME generally issues Notices of Violation (NOV) for offences under the SUB. Should compliance not be achieved following notification of offences using NOV, then investigations may be conducted which may lead to prosecutions and potential convictions before the courts. In circumstances which pose an immediate threat to public health or infrastructure or the environment or otherwise require immediate action, EME may issue an order to comply or take other remedial actions. In certain cases, the circumstances may warrant charges under the SUB.

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The chart below shows the enforcement action that has been taken over the past five (5) years, which includes NOV's, Part One (1) tickets, charges and orders issued by EME. Three (3) cases involving two (2) companies for incidents that occurred in 2019-2020 moved forward to prosecution. The prosecution files are still before the courts.



Sewer Use By-law Updates

Public Works Committee at its meeting of April 1, 2019, approved the Proposed Amendments Report (PW19029), which was then subsequently approved by Council on April 10, 2019. The purpose of the report was to inform Committee of staff's intent to hold Public Information Centres regarding the outcome of the 2018 consultant's review. This high-level study consisted of a comprehensive and scientific review of the parameters and limits to ensure they are appropriate and effective for the upgrades to the Woodward Wastewater Treatment Plant. The study also supports the Hamilton Harbour Remedial Action Plan: "Urban Runoff Hamilton Harbour Report" recommendation that the SUB include a limit for total phosphorous discharged to the storm sewer. City Staff held two (2) Public Information Centres (PICs) in October 2019 to seek input from stakeholders. Both PICs were well attended and the feedback that was received on the proposed changes was supportive.

Currently, the SUB permits uncontrolled discharges of construction dewatering to combined sewers, which means EME cannot regulate discharges to combined sewers. Monitoring and enforcement of these discharges is important because they make their way to the Woodward Avenue Wastewater Treatment Plant and can impact combined sewer, treatment plant capacity and potential system overflows. Staff are working with a consultant (Jacobs) for the development of a construction dewatering program and associated modifications to the existing Sewer Use By-law. City Staff will be hosting additional PICs in 2021 to seek input from stakeholders. Recommendations will be

presented to Council in Q4 2021 related to proposed parameter amendments to SUB 14-090, a construction dewatering component and administrative updates.

Community Outreach

Airborne odours in the Wentworth Street North and Oliver Street area have been a source of many residential complaints in the area. In 2020, the number of odour complaints increased significantly from previous years. EME responds to and investigates spills and sewer odours within the City of Hamilton's sewer system and has been actively working on this issue. The source of the odour is unknown but may potentially be due to industrial activity in the area. Below are some of the steps being undertaken by the City and World Energy (Biox Canada Ltd.), a biodiesel producer in the area.

World Energy (Biox Canada Ltd.):

- is researching potential sources of any odours in their wastewater discharge and ways to lessen and/or prevent them;
- currently cleans their sewer lines on a six (6) month frequency;
- has implemented new odour checks inside the Facility's property lines and outside of the Facility along Wentworth Street North - checks are performed six (6) times per day; and,
- is undertaking gas monitoring inside the private sanitary sewer discharge manhole every 12 hours.

The City of Hamilton:

- actively monitors wastewater discharged from World Energy (Biox Canada Ltd.) and ensures that it complies with the SUB 14-090;
- is inspecting other nearby industrial sites to determine if there are other factors that may be resulting in offensive sewer odours;
- has installed two (2) sewer odour lids and a biofilter unit along Wentworth Street North;
- will continue to respond to sewer odour notifications with a physical site visit to gather observations, measurements and perform maintenance as required; and,
- will ensure active communication with company representatives including notification of all resident sewer odour complaints.

Understanding odour types and potential sources, residents call the reporting lines for the Ministry of the Environment or City Spills line depending on what/where they are smelling. The City engaged World Energy (Biox Canada Ltd.) to enhance lines of communication. Company reporting lines were made available 24/7 for community

members to engage directly to activate internal group to investigate. EME continues to work with the community and company to identify and correct any abnormal conditions and offensive odours associated with the sewer system.

SARS-CoV-2 in Wastewater

In 2020, Hamilton Water embarked on a new journey to explore the use of wastewater sample data as a tool to assist Public Health authorities in decision-making and potentially serve as an early warning for subsequent COVID-19 waves of illness in our community. Working with both the University of Ottawa and McMaster University, Hamilton Water has been providing samples of the Woodward WWTP raw influent and raw sludge three (3) times a week. In December 2020, EME joined this partnership by initiating a sampling program at two (2) long term care facility locations, three (3) times a week. Hamilton Water continues to support this initiative into 2021.

Conclusion

The Environmental Monitoring and Enforcement Unit continues to be recognized as leaders in the Municipal Sewer Use Enforcement industry. Staffing resources have been optimized to ensure existing wastewater sampling service levels are met to support the Permit Program and provide sampling support to the Division and others when required. Construction dewatering is another area where future demand for staffing resources is forecasted.

Over the last decade, many IC&I facilities in the City have made significant capital investments, upwards of \$50M in total, to achieve compliance with the Sewer Use By-law. The excellent work of the EME team and effective administration of the Sewer Use By-law has contributed significantly to the successful operation of the wastewater treatment plants. The quality of effluent leaving the plants, as well as that of our biosolids has been stable and much better because of this great work.

The strategic investment that City Council made almost 15 years ago by adding resources to this business unit, and support of ongoing changes to the Sewer Use By-law has been instrumental in their success. The community trusts and values the program to protect Hamilton's sewer assets, wastewater treatment plants and the community's water resources.

APPENDICES AND SCHEDULES ATTACHED

N/A