



**Utilities Kingston
Information Report to Council
Report Number 19-068**

To: Mayor and Members of Council
From: Jim Keech, President and CEO, Utilities Kingston
Resource Staff: Jim Miller, Director Utilities Engineering
Date of Meeting: March 5, 2019
Subject: Sewage Overflow Monitoring and Reduction Program
2018 Summary Report

Executive Summary:

This report and the exhibit attached have been prepared to provide a summary of combined sewage overflow (CSO) activity within the City of Kingston. In addition, it provides an overview of the changes made to CSO over the 2018 calendar year, including a brief summary of monitoring improvements.

No action is required on this report and it is provided for information purposes. The attachment forms part of ongoing communications with the Ministry of Environment, Conservation and Parks.

Within this report, the acronym 'CSO', for combined sewer overflow, may refer to the actual structural location where an overflow can take place, and to the actual occurrence of an overflow event, when it takes place. In terms of the structural location, there are several types, including what are referred to as CSO tanks (such as O'Kill and Collingwood) and those that are located at specific manholes within the sewer network (in-line CSO). Overflows may also occur at pump stations, however these are more commonly referred to specifically as pump station overflows.

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Authorizing Signatures:

**J.A. Keech, President and CEO,
Utilities Kingston**

Consultation with the following Members of the Corporate Management Team:

Peter Huigenbos, Acting Commissioner, Community Services	Not required
Lanie Hurdle, Acting Chief Administrative Officer	Not required
Desirée Kennedy, Chief Financial Officer & City Treasurer	Not required
Deanne Roberge, Acting Commissioner, Corporate & Emergency Services	Not required

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Options/Discussion:

Not applicable.

Existing Policy/By-Law:

Not applicable.

Notice Provisions:

Not applicable.

Accessibility Considerations:

Not applicable.

Financial Considerations:

Not applicable.

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Other City of Kingston Staff Consulted:

Not applicable.

Exhibits Attached:

Exhibit A – Sewage Overflow Monitoring and Reduction Program – 2018 Summary
ReportWastewater Utility Budget Summary



Annual Summary Report to the
Ministry of the Environment Conservation and Parks

**City of Kingston
Sewage Overflow Monitoring and
Reduction Program -
2018 Summary**

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Date: February 8, 2019

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1 Overview

This report has been prepared to provide a summary of combined sewage overflow (CSO)¹ activity within the City of Kingston. In addition, it provides an overview of the changes made to CSO over the 2018 calendar year, including a brief summary of monitoring improvements.

This report does not formally address any reporting requirements for Environmental Compliance Approvals. That is done annually as required under separate cover by Utilities Kingston Water & Wastewater Operations.

2 Overflow Monitoring Locations

The purpose, history, equipment and process of the CSO Monitoring Program has been described in previous reports. In a nutshell, monitoring commenced in latter 2006. Monitoring is done by level sensors installed in pertinent manhole structures where overflows occur. Flows and volumes are estimated using standard hydraulic equations and/or relationships derived from hydraulic modeling.

For 2018, locations of all overflow monitor locations were as per Figure 1 and Table 1. These include all overflow and bypass locations including those in the pipe network, pump stations, storage tanks and wastewater treatment plants. In contrast to monitoring pre-2016, these locations are not expected to change in the future. Pre-2016, monitors were more temporary and they were relocated from time to time to acquire data at new locations. New monitors were installed in 2016.

3 Overflow Monitoring Results

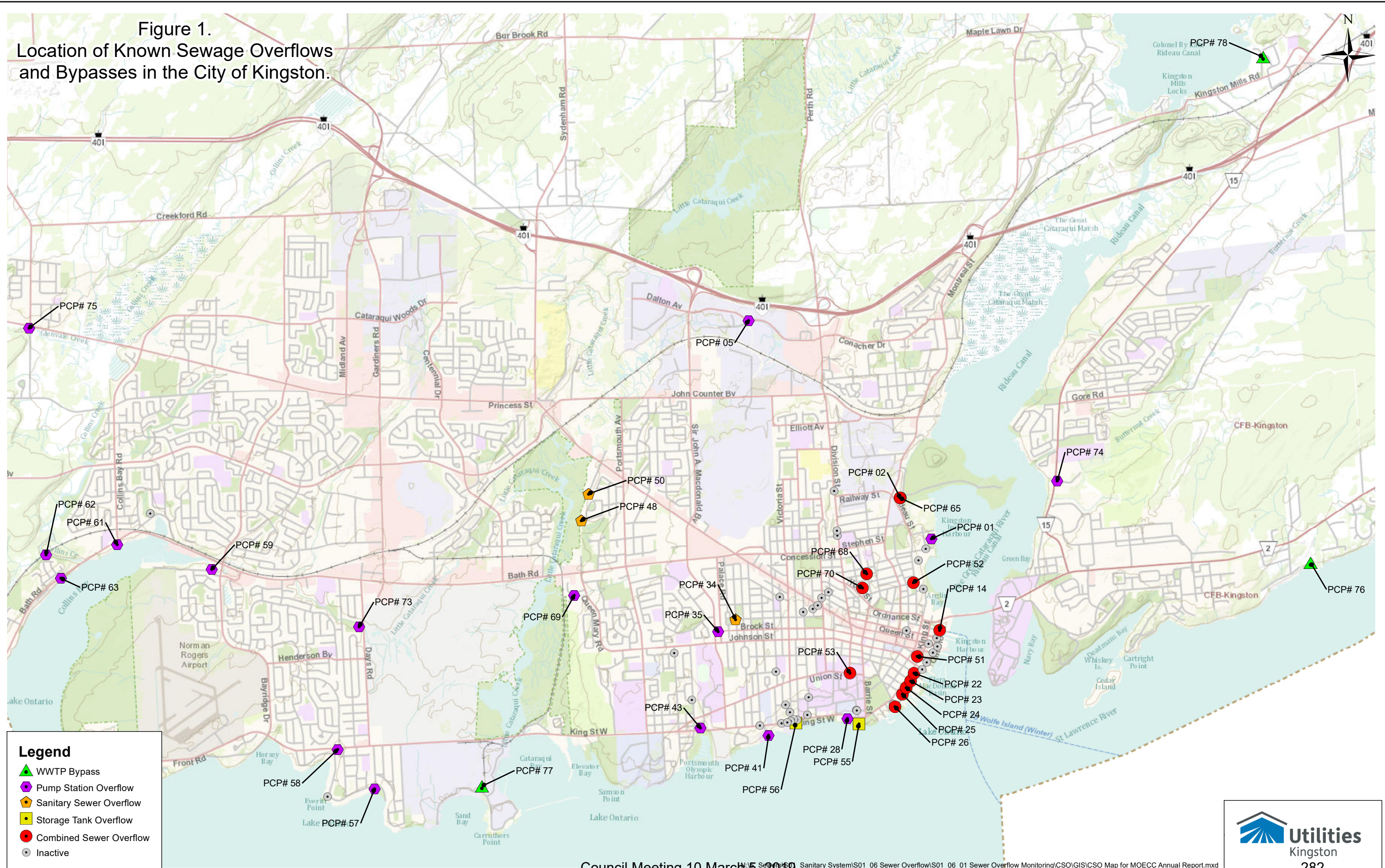
Summary results from the 2018 monitoring program are as per Table 2.

Several observations are noteworthy:

- **Rainfall:** Similar to 2017, 2018 was a wetter than average year, with multiple severe wet-weather events. This has the impact of increasing the frequency, duration and volume of overflow events relative to average and drier-than-average years. This can be seen in Tables 3 and 4.
- **Trunk System Overflow Activity:** The Collingwood and O'Kill CSO and West Street are largely responsible for providing relief to the trunk network in the central portion of the City and contributed significantly to overflow events in 2018. Similar to events in 2017, 2018 was dominated by longer, higher rainfall events and it was the trunk sewer overflows and facilities along the trunk system that show the highest volumes. Local overflows respond more to rapid high-intensity events.
- **Catarauqui Bay WWTP:** Overflows events at the Catarauqui Bay WWTP are largely responsible for the WWTP facility overflows. The WWTP is currently undergoing a capacity increase from 38,800 m³ per day to 55,000 m³ per day, including expansion of the plant's existing head works and primary clarifiers, replacement of the secondary treatment system, site wide building and process improvements, and electrical and instrumentation and control upgrades. These upgrades at Catarauqui Bay WWTP will reduce the potential for overflow events at the facility. The upgrades are scheduled for completion in 2020.

¹ Within this report, the acronym 'CSO', for combined sewer overflow, may refer to the actual structural location where an overflow can take place, and to the actual occurrence of an overflow event, when it takes place. In terms of the structural location, there are several types, including what are referred to as CSO tanks (such as O'Kill and Collingwood) and those that are located at specific manholes within the sewer network (in-line CSO). Overflows may also occur at pump stations, however these are more commonly referred to specifically as pump station overflows.

Figure 1.
Location of Known Sewage Overflows
and Bypasses in the City of Kingston.



Legend

- WWTP Bypass
- Pump Station Overflow
- Sanitary Sewer Overflow
- Storage Tank Overflow
- Combined Sewer Overflow
- Inactive



Table 1. Locations of Known Sewage Overflows and Bypasses.

PCP#	Class	Bypass Location	Outfall Location
PCP# 01	Facility	River Street PS / Emma Martin Tank	Great Cataraqui River, South of River St
PCP# 02	In-line	Belle Park Chamber, Trunk	Great Cataraqui River, East of Overflow
PCP# 05	Facility	Dalton Ave PS	Tributary of Little Cataraqui Creek, North of PS
PCP# 14	In-line	Ontario and Barrack	Lake Ontario at Barrack St, Ferry Dock
PCP# 22	In-line	William St Vortex	Lake Ontario, East of William St
PCP# 23	In-line	Earl d/s of vortex	Lake Ontario, East of William St
PCP# 24	In-line	Gore St vortex	Lake Ontario, East of Gore St
PCP# 25	In-line	Lower Union d/s of vortex	Lake Ontario, East of Gore St
PCP# 26	In-line	West and Ontario	Lake Ontario at West St Boat Ramp
PCP# 28	Facility	King St (O'Kill) PS	Lake Ontario, South of PS
PCP# 34	In-line	Helen and Mack	Lake Ontario, South of Albert St, via Storm Sewer
PCP# 35	Facility	Palace Road PS	Portsmouth Olympic Harbour, via Storm Sewer
PCP# 41	Facility	Morton Street PS	Lake Ontario, South of Morton St PS
PCP# 43	Facility	King-Portsmouth PS	Portsmouth Olympic Harbour
PCP# 48	In-line	NETS at Sherwood	Little Cataraqui Creek, West of Sherwood
PCP# 50	In-line	NETS at Parkway S	Little Cataraqui Creek, West of South End of Parkway
PCP# 51	In-line	d/s of Clarence St in-line CSO	Lake Ontario, East of Clarence St
PCP# 52	In-line	Raglan and Rideau	Cataraqui River, East of North St
PCP# 53	In-line	Division and Union	Lake Ontario, South of George St
PCP# 55	Facility	O'Kill CSO Tank	Lake Ontario, South of George St
PCP# 56	Facility	Collingwood CSO Tank	Lake Ontario, South of Collingwood St
PCP# 57	Facility	Crerar Blvd PS	Lake Ontario, South of Crerar PS
PCP# 58	Facility	Lakeshore Blvd PS	Lake Ontario, south of 787 Wartman.
PCP# 59	Facility	Coverdale PS	Marsh, just North of Coverdale PS
PCP# 61	Facility	Bath - Collins Bay PS	Collins Bay, South of Collins Bay Rd
PCP# 62	Facility	Rankin PS	Collins Creek, downstream of CN Rail Tracks
PCP# 63	Facility	Bath - Lower PS	Collins Bay, South of PS
PCP# 65	In-line	Belle Park Local SA1200	Cataraqui River, East of Overflow
PCP# 68	In-line	Quebec at Barrie St	Great Cataraqui River, East of Dufferin St
PCP# 69	Facility	Greenview Drive PS	Little Cataraqui Creek, Marsh, south of Greenview PS.
PCP# 70	In-line	Carlisle & Chest Nut	Great Cataraqui River, East of Dufferin St
PCP# 73	Facility	Days Road PS	Tributary to Little Cataraqui Creek, West of Days Rd.
PCP# 74	Facility	Barrett Court PS	Great Cataraqui River, West of Butternut Creek.
PCP# 75	Facility	Westbrook PS	Glenvale Creek, West of Westbrook Rd
PCP# 76	WWTP	Ravensview WWTP	St. Lawrence River, off Ravensview
PCP# 77	WWTP	Cataraqui Bay WWTP	Lake Ontario, off Carruthers Point
PCP# 78	WWTP	Cana WWTP	Tributary to Colonel By Lake, at Canal Drive
Counts:	16	In-Line	
	18	Facility	
	3	WWTP	

Source: N:\S_Sewers\S01_Sanitary System\S01_06 Sewer Overflow\S01_06_01Sewer Overflow Monitoring\CSO\Master CSO List v4.xls

Table 2. 2018 Overflow & Bypass Monitoring Summary Results.

Overflow Class	PCP #	Location	Count	Total Volume (m3)	% of Class Total	% of Overall Total
Collection System Overflows ¹	2	Belle Park (Trunk)	3	6,209.8	7.4%	1.8%
	14	Barrack Street	1	315.0	0.4%	0.1%
	22	William Street	1	468.9	0.6%	0.1%
	23	Earl Street	25	7,762.8	9.2%	2.2%
	24	Gore Street	1	615.8	0.7%	0.2%
	25	Lower Union	7	1,465.2	1.7%	0.4%
	26	West Street	5	20,302.0	24.1%	5.7%
	34	Helen at Mack St	3	307.0	0.4%	0.1%
	48	Sherwood Avenue	2	5,148.0	6.1%	1.5%
	50	Parkway South	2	70.5	0.1%	0.0%
	51	Clarence Street	2	2,331.0	2.8%	0.7%
	52	Raglan at Rideau	2	617.4	0.7%	0.2%
	53	Union at Division	3	64.0	0.1%	0.0%
	65	Belle Park (Local)	12	36,643.7	43.4%	10.4%
	68	Quebec at Barrie	1	2,052.1	2.4%	0.6%
	Subtotal		26 Distin Events	84,373.3	100.0%	23.9%
Facility Overflows ¹	35	Palace Rd SPS	1	21.1	0.0%	0.0%
	55	O'Kill Tank	6	62,266.2	31.3%	17.6%
	56	Collingwood Tank	6	135,028.9	67.9%	38.2%
	57	Crerar Blvd SPS	4	1,673.0	0.8%	0.5%
		Subtotal		6 Distinct Events	198,989.2	100.0%
WWTP Bypasses	76	Ravensview WWTP ²	3	5,323.0	7.6%	1.5%
	77	Catarauqui Bay WWTP ²	7	64,148.0	91.9%	18.2%
	78	Cana WWTP ³	4	327.9	0.5%	0.1%
		Subtotal		10 Distin Events	69,798.9	100.0%
ALL	All	TOTAL	30 Distinct Events	353,161.4		100.0%

Notes:

(1) Collection System and Facility overflows consist of diluted untreated sewage. Dilution is often up to ~10x by storm and ground water.

(2) Ravensview and Catarauqui Bay WWTP bypasses consist of a fully chlorinated blend of primary and secondary treated wastewater.

(3) Cana WWTP bypasses consist of a fully UV-disinfected blend of secondary and tertiary treated wastewater.

4 Overflow History

The overflow history is provided below and is available on Utilities Kingston's website on the Overflow Log webpage. <https://utilitieskingston.com/Wastewater/SewerOverflow/Log>

Table 3 presents the total facility overflows for the past 14 years. This table shows total event volumes from pump stations and storage tanks. It also lists the rainfall that contributed to events.

Table 4 presents the total monitored collection system overflows over the past 11 years. The monitoring data quality has improved considerably since 2006-2008, around the time of program initiation, and then again at the beginning of 2017, when new equipment was installed and full monitoring coverage was attained. A general declining trend was observed in the data, until 2017.

Table 3. Yearly Total Facility Overflows.

YEAR	NUMBER OF OVERFLOW EVENTS	CONTRIBUTING RAINFALL (mm)	TOTAL FACILITY OVERFLOW (m ³)
2003	30	375.1	725,637
2004	20	411.7	383,208
2005	9	348.8	124,761
2006	11	306.6	140,616
2007	5	98.0	3,568
2008	6	N/A	16,488
2009	5	112.0	14,138
2010	5	140.7	40,233
2011	9	394.6	25,933
2012	4	205.3	12,280
2013	8	120.3	106,334
2014	13	334.1	207,877
2015	3	148.5	46,843
2016	5	167.9	99,585
2017	10	600.3	273,297
2018	6	275.2	198,989

Note: Overflows volumes in this table are for facilities only, including pump stations and CSO tanks, per Utilities Kingston "Overflow Log" Table 2.

Table 4. Yearly Total In-Line Overflows.

YEAR	NUMBER OF OVERFLOW EVENTS	CONTRIBUTING RAINFALL (mm)	TOTAL IN-LINE CSO OVERFLOW (m ³)
2006 ⁽¹⁾	13	340.3	139,381
2007 ⁽²⁾	31	350.0	85,431
2008	41	N/A	626,588
2009	25	447.0	314,278
2010	26	399.0	209,643
2011	16	512.3	518,411
2012	12	276.0	120,786
2013	17	280.1	132,573
2014	27	439.1	106,731
2015	24	422.2	27,502
2016	14	371.1	120,227 ⁽³⁾
2017	20	761.2	171,556
2018	26	666.0	84,373.3

Notes: Overflows volumes are for 'in-line' or collection system overflow structures only, per Utilities Kingston "Overflow Log" Table 4.

(1) 2006 contains only 4 months of data from 11 sites.

(2) 2007 is incomplete data due to frequent monitor failures.

(3) 2016 contains a single blockage event that caused approximately 73% of the documented volume for the year and was not a direct result of wet-weather influence.

5 CSO Reduction Program

The CSO Monitoring Program supports activities to reduce the number, frequency and volume of combined sewage discharges from the sewer system. The monitoring data is used to assist with the decision making process to select sites that are candidates for modification and/or elimination.

In addition, in planning for new monitor installations, Utilities Kingston conducted an aggressive CSO elimination program in 2014/2015. The structures in Table 5 have been confirmed as 'inactive' via the CSO Reduction Program, since 2007, to the end of 2016. It is not anticipated that new CSO eliminations will take place without further sewer separation.

Table 5. CSO Elimination Efforts since 2007.

#	LOCATION	ACTIVITY
1	PCP#07: Wellington Street Extension near Charles	Eliminated by plugging in 2007.
2	PCP#42: Ellerbeck Street near King	Eliminated by plugging in 2008.
3	PCP#60: Hillview Street near Mona	Confirmed not to exist in 2008.
4	PCP#16: Queen at Bagot	Monitored as Kingston 25, plugged in 2008.
5	PCP#20: Clarence at Ontario	Confirmed in 2008 to be plugged.
6	PCP#19: Brock at Ontario	Eliminated by plugging in 2009.
7	PCP#06: Cataraqui St.	Eliminated during reconstruction in 2010.
8	PCP#17: Princess St east of Ontario	Eliminated during reconstruction in 2010.
9	PCP#18: Princess St west of Ontario	Eliminated during reconstruction in 2010.
10	PCP#49: Albert St north of Mack	Eliminated during reconstruction in 2010.
11	PCP#04: Division near Guy	Eliminated during reconstruction in 2011.
12	PCP#27: West St near King	Eliminated during reconstruction in 2011.
13	PCP#10: North St at Wellington	Eliminated by plugging in late 2014.
14	PCP#21: Johnson at Ontario	Eliminated by plugging in late 2014.
15	PCP#72: Albert at Queens Crescent.	Eliminated by plugging in late 2014.
16	PCP#29: O'Kill at George St (to tank)	Eliminated during reconstruction 2015.
17	PCP#30: George St at O'Kill (to tank)	Eliminated during reconstruction 2015.
18	PCP#08: Princess near Alfred	Temporarily plug inserted in July 2015 ⁽¹⁾ .
19	PCP#09: Frontenac St near Mack	Temporarily plug inserted in July 2015 ⁽¹⁾ .
20	PCP#71: Alfred St north of Princess	Temporarily plug inserted in July 2015 ⁽¹⁾ .
21	PCP#67: Chatham St at Elm	Temporarily plug inserted in July 2015 ⁽¹⁾ .
22	PCP#31: Albert St north of King	Eliminated by plugging in October 2015 ⁽¹⁾ .
23	PCP#15: Queen St at Ontario	Eliminated by plugging in October 2015.

Note⁽¹⁾: These overflows (shaded blue) had monitors still in place in 2016 to observe for surcharge levels. Minimal surcharging was observed, providing additional confidence that plugging was acceptable.

As a result, 23 CSO's in total have been eliminated from the database since 2007 with eight of these overflow points plugged in 2015 alone.

Table 6 lists the sixteen (16) remaining known in-line CSO's and an estimation of how long they are expected to remain, or be required, in the sewage collection system. This list does not include facility overflows. These locations are illustrated in Table 1 and Figure 1.

Table 6. Remaining Active In-Line Sewer Overflows

CSO I.D.	Location	Size Class	Activity Level (by Volume) ¹	Activity Level (by Frequency) ¹	Rough Outlook for Elimination
PCP#02	Belle Park Trunk Overflow	Trunk CSO	Moderate	Low	N/A
PCP#14	Barrack St on Harbourfront Trunk Sewer	Trunk CSO	Low	Very Low	N/A
PCP#22	William St near Ontario St	Local CSO	Low	Very Low	>20 years
PCP#23	Earl St near Ontario St	Local CSO	Moderate	Very High	>20 years
PCP#24	Gore St near Ontario St	Local CSO	Low	Very Low	10-20 years
PCP#25	Lower Union near Ontario St	Local CSO	Moderate	Moderate	>20 years
PCP#26	West St at boat ramp	Trunk CSO	High	Low	N/A
PCP#34	Helen St at Mack St	Local SSO	Low	Low	<10 years
PCP#48	North End Trunk Sewer at Sherwood	Trunk SSO	Moderate	Very Low	N/A
PCP#50	North End Trunk Sewer at Parkway South	Trunk SSO	Very Low	Very Low	>20 years
PCP#51	Clarence St near King St	Local CSO	Moderate	Very Low	10–20 years
PCP#52	Raglan St at Rideau St	Local CSO	Low	Very Low	>20 years
PCP#53	Union St at Division St	Local CSO	Very Low	Low	10-20 years
PCP#65	Belle Park Local Overflow	Local CSO	High	High	10-20years
PCP#68	Quebec St at Barrie St	Local CSO	Moderate	Very Low	10-20years
PCP#70	Carlisle St and Chestnut St	Local CSO	Nil	Nil	10-20years
Note:					
(1) Activity Levels for volume and frequency are estimated from 2017 activity.					
(2) N/A suggests that there is no anticipated plan, up to and including full separation, that will justify elimination of the overflow. Elimination will require significant works even after full separation of combined sewers in the City of Kingston and even then, may be ill advised.					

All of the overflows listed in Table 6 were equipped with new monitoring equipment in late 2016 and in place and functional for the full 2018 monitoring period.

6 Moving Forward

6.1 Overflow Point Removal Plans

All previously identified opportunities for overflow removal have been completed as per section 5 above. No additional opportunities have been identified. Future overflow point reduction will be a direct result of continued or completed sewer separation in the contributing sewer service area and/or monitoring that supports overflow plugging. See below for more details.

6.2 Overflow Monitor Upgrade Plans

The project to complete the replacement of the battery-powered, cellular-communications monitoring equipment with more permanent SCADA-integrated, mains-powered monitoring stations was completed by the end of 2016. The new monitoring stations are located as per Table 6.

The monitor upgrades have provided the following:

- full monitoring coverage of all known remaining overflow locations in the collection system;
- improved accuracy and reliability through the use of hydrostatic sensors (instead of ultra-sonic sensors), mains-powered equipment and SCADA-integrated hardware;
- the ability to distinguish between overflow from the collection system versus ingress of storm-water into the collection system by the use of two sensors, where possible, to facilitate the use the hydraulic grade-line for overflow identification and volume/flow estimation;
- collection of real-time data from collection system overflows to permit more timely reporting in the manner used to report facility overflows and WWTP bypasses;
- all in-house data collection and data storage, and;
- completion of the real-time CSO status webpage (released for public use in May 2017).

Specifics on these items were discussed with MOECC staff in meetings held on November 10, 2015 and December 9, 2016.

All 2018 collection system overflow monitoring described herein is based on the new monitoring equipment.

6.3 Master Plan Updates

The Wastewater Master Plan and accompanying Pollution Prevention and Control Plan updates have been completed. The following are pertinent recommendations and interpretations:

- **Overall:** The City of Kingston's wastewater system currently meets F-5-5 for the volumetric criterion but not for frequency and duration. Therefore, continue with sewer separation as per projected plan, to the extent possible. This will result in a net decrease in overflows and keep ahead of increases in flows that occur with development.
- **Belle Park Overflows PCP#2 & #65:** This Master Plan does not recommend twinning of the North Harbourfront Interceptor as recommended by the former (2010) Master Plan iteration. This is due to the fact the majority of overflow is not due to local bottleneck, but backwater from River St SPS during larger wet-weather events. Overflows at Belle Park are best addressed with continued regional sewer separation.
- **Division St PCP#53:** Review weir height setting with completion of Division St reconstruction (2019).

- **Helen & Mack PCP#34:** Upsize downstream sewers along Collingwood Collector, or, re-route forcemain to new location with Johnson Street reconstruction. The report recommends the former option but Utilities Kingston will likely use whichever opportunity arises first.
- **Dalton Ave SPS:** Complete upgrades to facility to reduce overflows at PCP#48 and #50. Pump alterations, screen replacements and upgrades to the pump controls are in progress with completion scheduled for Spring of 2019 (ECA #7037-AT4QC6).
- **North End Trunk Overflows, PCP#48 and #50:** Sewer twinning to reduce overflows, in addition to that above is planned to commence in the fall of 2019 with completion in spring of 2020.
- **Palace Rd SPS PCP#35:** Addition of backup power to reduce overflow due to power failure.
- **Portsmouth Ave SPS, PCP#43:** Proceed with upgrades, to decrease overflows at PCP#43 and proceed with re-routing of flows to Cataraqui Bay via new diversion. This diversion will result in a significant decrease in trunk and tank overflows along the Harbourfront Trunk Sewer downstream of Portsmouth. The Portsmouth Ave PS upgrades are anticipated for 2021-2022, construction commencing following the completion of the upgrades to the Cataraqui Bay WWTP.
- **Westbrook SPS, PCP#75:** Upgrade facility to assist with overflow risk reduction, and begin to monitor PCP#75. Upgrades to facility were completed in the fall of 2018 with the overflow monitoring of PCP #75 to commence in early 2019.
- **Raglan at Rideau, PCP#52:** Upsize sewers on Rideau St Collector to eliminate bottleneck, then review/plug.

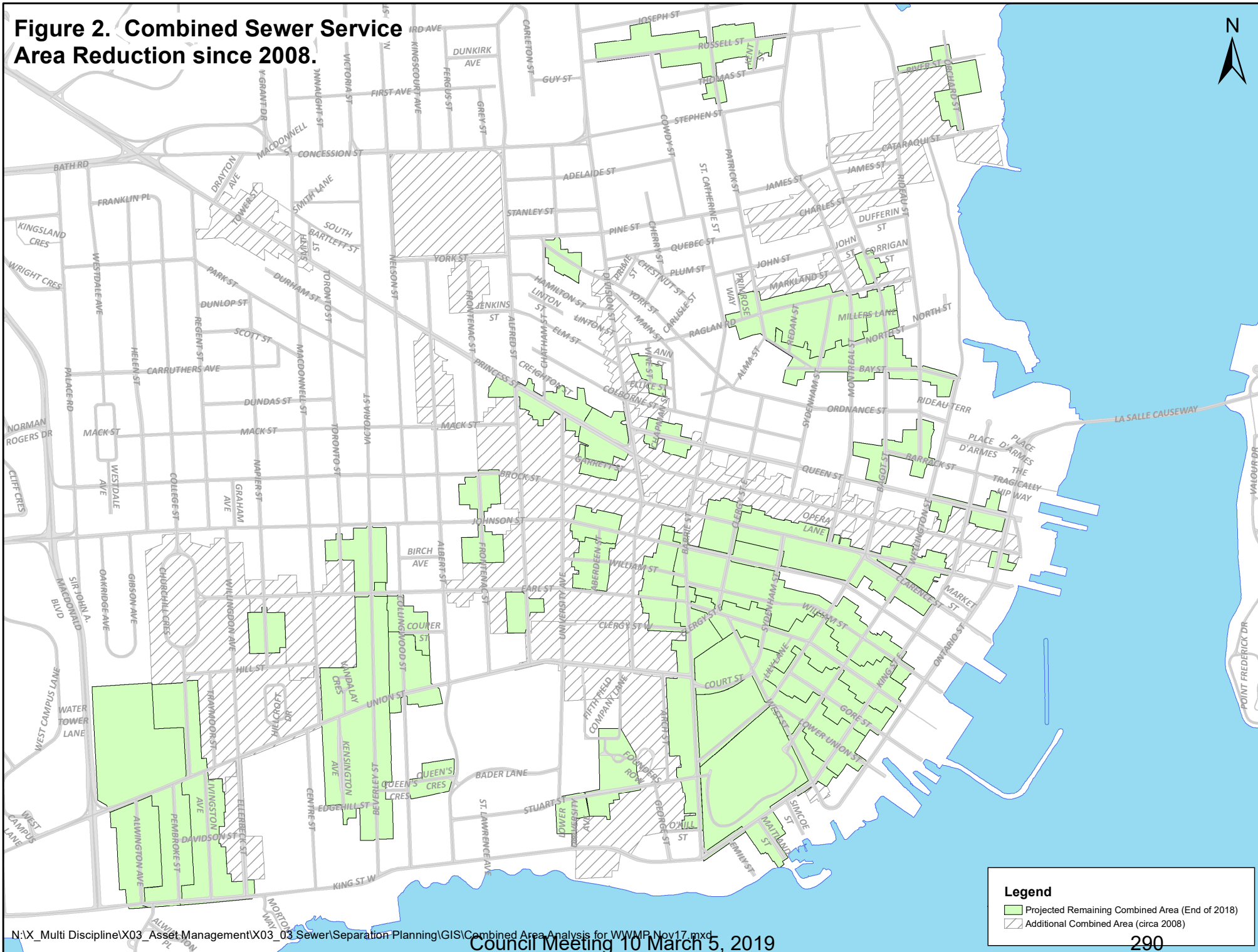
6.4 Sewer Separation Progress

As the primary recommendation for sewage overflow reduction from the former and updated Pollution Prevention and Control Plan (CH2M, 2010 and WSP, 2017), sewer separation is considered the primary tool for overflow reduction. It is being tracked over time.

Figure 2 illustrates the reduction in combined sewer service area since 2008 conditions including a depiction of projected (end-of-2018) conditions, represented by the green shaded areas. The next 4-year capital plan (2019-2022), and those beyond, will include further sewer separation. However, the quantity and rate of future separation projects will be based on available budget, in consideration of other priorities.

Figure 3 quantifies the approximate reduction over time (since 2008) and offers a projection based on the council-approved 2015-2018 capital plan. Since the next 4-year capital plan is just being developed, it is unknown what rate separation will continue into the future.

Figure 2. Combined Sewer Service Area Reduction since 2008.



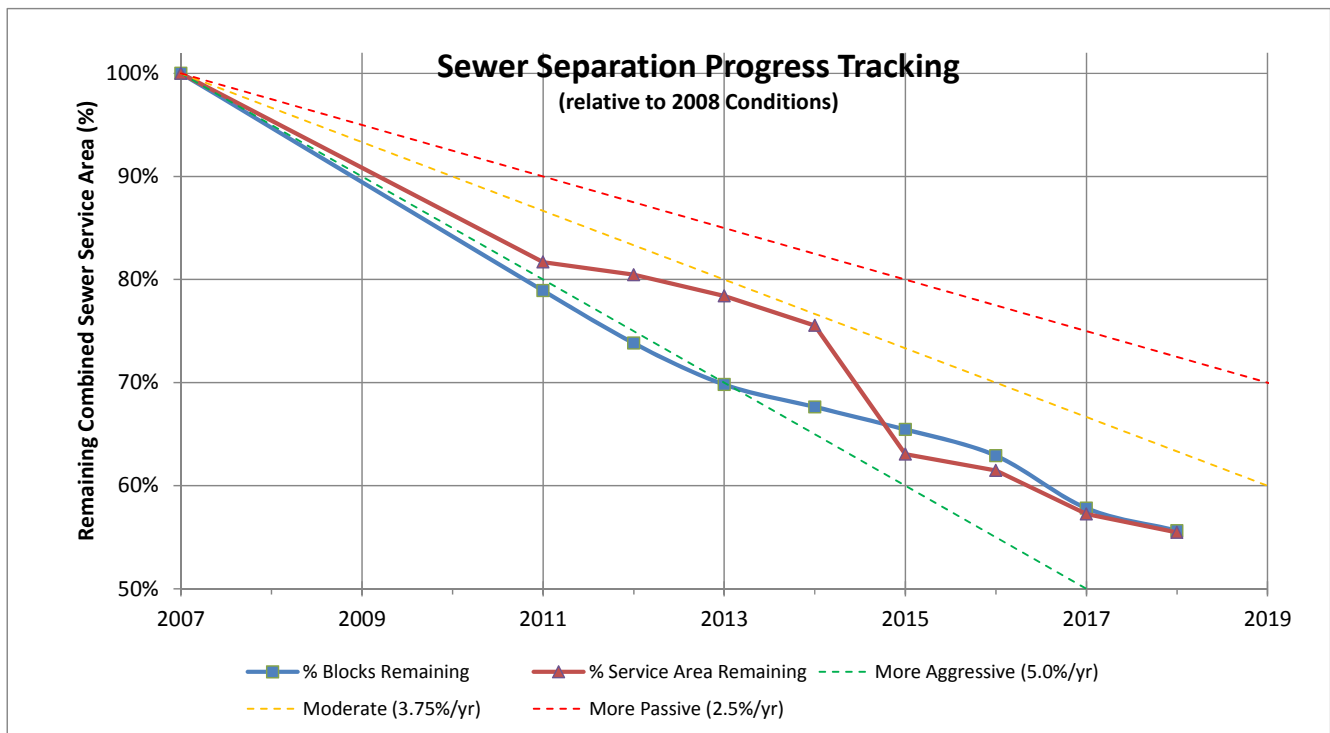


Figure 3. Sewer Separation Progress Tracking.

By the end of 2018, approximately 44% of combined sewers will have been separated (since 2008), which represents about 4.0% per year on average.

7 Summary

Utilities Kingston remains committed to improving the City of Kingston’s sanitary and combined sewer system to reduce the volume and frequency of overflows. In summary, Utilities Kingston has undertaken the following components to improve the City’s current overflow scenario;

- A new and updated Overflow Monitoring Program which is now in place. This program allows real-time monitoring and more accurate estimation of overflow metrics.
- A real-time public notification map. This maps allows the public and stakeholders to check for recent overflows such that informed health and safety decisions can be made, as it relates to recreational water use. This is a tool that will receive continual improvement in 2018 and beyond. Plans are to add functionality for additional facilities that are currently not shown, and to add a voluntary SMS text notification option. Signage at primary recreational water use areas is contemplated.
- An informal Overflow Reduction Program is in place. This program uses monitoring data, as well as anecdotal and inspection data to make informed decisions on modifications or eliminations. Utilities Kingston selectively eliminates overflow points when conditions permit. On this note, as discussed earlier, there are no remaining locations that can be eliminated without local or regional sewer separation.
- An update to the Master Plan and Pollution Prevention and Control Plan was completed to form a roadmap for moving forward with CSO reduction into the future.
- Ongoing inclusion of sewer separation projects in multi-year road reconstruction plans. The Corporation of the City of Kingston (Report to Council – Report Number: 19-045, January 28, 2019) recently endorsed the long term objective of the total elimination of combined sewers within the City of Kingston over a 20 year period, commencing in the 2023 capital program.