



**City of Kingston  
Wastewater Collection System  
2025 ANNUAL REPORT**

**Environmental Compliance Approval Number: 018-W601  
Wastewater Collection System Owner: City of Kingston  
Wastewater Collection System Classification: Class III**

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## 1 EXECUTIVE SUMMARY

The City of Kingston Wastewater Collection System operates under Ministry of the Environment, Conservation and Parks (MECP), Consolidated Linear Infrastructure Environmental Compliance Approval (CLI ECA) number 018-W601, issued to the Corporation of the City of Kingston.

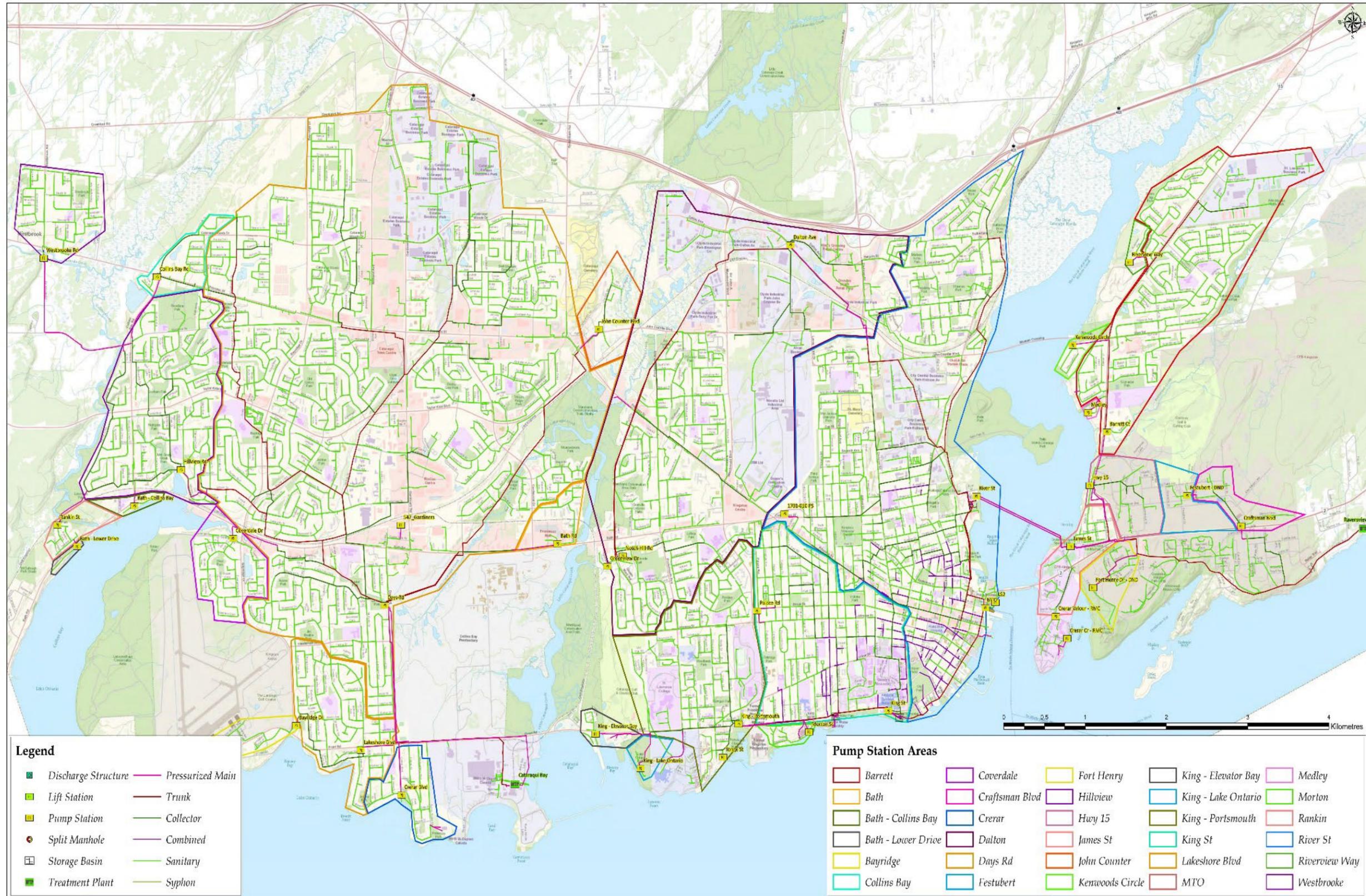
In 2025, the West Collection system received and conveyed 9,317,209.06 m<sup>3</sup> of wastewater to the Cataraqui Bay Water Pollution Control Plant (WPCP). The Central and East Collection system received and conveyed 19,267,737 m<sup>3</sup> of wastewater to the Ravensview WPCP. The Cana Collection system received and conveyed 18,303.70 m<sup>3</sup> of wastewater to the Cana WPCP.

The collection system had several wet weather overflow events which totaled 21,013 m<sup>3</sup>. The collection system had several spills to the environment from Sanitary Sewage Pumping Stations and from breaks in the collection system totaling 1,266.8 m<sup>3</sup>. The overflow and spill locations are listed in Tables 1 and 2 respectively.

## 2 SYSTEM DESCRIPTION

The City of Kingston Wastewater Collection System collects and transmits sewage to one of three WPCPs, depending on the pump station area. The collection system consists of 474 km of gravity sewers (including 42.8 km of trunk sewers, 50.7 km of collector sewers and 381.0 km of local sewers) and includes 18 km of combined sewers but excludes the approximately 38,384 active service laterals to the property line. The collection system comprises of 30 sewage Pumping Stations (PS), three Combined Sewer Overflow (CSO) tanks, six combined sewage retention tanks, and 29.0 km of forcemains. All flow is discharged into one of three Water Pollution Control Plants: Ravensview, Cataraqui Bay, and Cana.

Figure 1 – City of Kingston Collection System Major Infrastructure



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### 3 OPERATION

Adequate staffing as well as preventative maintenance and regular equipment inspections allowed operational issues to be diagnosed quickly and corrective actions to be taken immediately. Non-flushable materials such as wipes, and grease continue to be more prominent in the sewer system resulting in some operational and maintenance challenges. Utilities Kingston continues to implement a public education program to educate customers and bring awareness to types of materials that should not be flushed down drains and toilets, and then into the sewers. This program included radio and newspaper campaigns, social media campaigns, bill stuffers, information on back of parking tickets, and bus information signs. This has been an ongoing campaign for many years with positive results.

Throughout the collection system, there are 43 known sections that can easily become clogged with non-flushable materials, and grease. They are monitored regularly and proactively cleaned when required. During 2025, crews inspected these sections a total of 580 times, 335 of those times flushing and cleaning were required.

Staff encountered operational problems at several pumping stations across the system that were a result of grease build up. These problems ranged from grease interfering with level instruments, to floats being caught up in the grease. Third party contractors were hired several times throughout the year to clean wet wells and remove the grease along with other non-flushable items as required.

During 2023, there were several spills of sewage from the Barrett Court PS. In response to this, a large project to replace the pumps and associated valving was started in 2024. The third and final pump was installed in 2025, and the pumping station has not seen any disruptions since.

CSOs located in the collection system, both inline overflows and dedicated tanks, are inspected regularly throughout the year. There was a total of 80 inspections on the 12 active CSOs in 2025.

### 4 SYSTEM FLOWS

The City of Kingston wastewater collection system transported 28,584,946.06 m<sup>3</sup> of sewage to the Ravensview and Cataraqui Bay WPCPs. The Cana system collected and transported 18,303.7 m<sup>3</sup> of sewage to the Cana WPCP. The concentration of the raw influent into the three WPCP's increases as the volume of flow decreases. The flow into each plant also increases as the number of wet weather events increase. The increased flow during the wet season, as well as the elevated concentrations during dry periods, indicate there is ground water infiltration and/or illegal sump or roof leader connections in the systems.

### 5 SPILLS, & OVERFLOW SUMMARY

The collection system had several wet weather overflow events which totaled 21,013 m<sup>3</sup> for 2025. The locations and total volumes of overflows can be found in Table 1. Many of the CSO overflow points in the collection system are in locations that pose significant safety concerns (i.e., confined spaces, traffic, unstable ground, etc.) for staff when collecting samples during wet weather events. Utilities Kingston has been granted permission to use a surrogate sampling plan where the loading rates are calculated based on an average of all of the overflow samples collected over the past 5 years. The surrogate loading rates from these overflow events are listed in Table 3. There were six spills to the environment from the collection system, totaling 1,266.8 m<sup>3</sup>. The locations and details of the spills are located in Table 2. The loading rates for the spills are in Table 4. None of the collection system overflows or spills were disinfected, and no adverse impacts were noted. Staff checked for, and cleaned up, any debris and garbage after each event.

During 2025, there were three sewage pumping station spills that occurred during wet weather events. These pumping stations do not have combined sewers connected to them, however

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infiltration, and/or illegal connections from sump pumps and roof leaders add to the flow of sewage during these wet weather events.

There were three spills in 2025 along Bath Rd just West of Centennial Dr. These spills occurred between May and June. A sewage pumping station is located just east of that intersection, and this station has no provision for an overflow. Immediately downstream of the forcemain that leaves the pumping station there were several sections of pipe that failed. This led to three different spills of raw sewage. Crews attended the spills and made every effort with contractors to stop and contain the spills, clean up the spill, and repair the infrastructure. To complete the repairs, stop the spill of sewage to the environment, and protect upstream users from backups, multiple vacuum trucks and crews were hired to shuttle sewage from the pumping station to a downstream manhole for several days while work was being completed. These breaks were quite complex and required many resources to complete the repairs/replacement of the broken infrastructure. Staff were able to complete a temporary fix on the pipe that failed and caused the spill that occurred on May 30<sup>th</sup>, 2025. It should be noted, for most of the 7 days that the spill occurred there was only a small amount of wastewater that was leaking past the temporary fix, this allowed for the equipment and resources required to fix the infrastructure to be sourced. Following an inspection of the downstream infrastructure, Utilities Kingston identified a 140 meter section of pipe that needed an emergency replacement to avoid any further pipe failures and spills. A third party company installed bypass pumping around a large section of broken pipe, which allowed for the complete replacement of the failing pipe.

The rainfall events in 2025 were more severe than in 2024, however less frequent, as seen in Figure 4 below. The wet weather flow capture rate is calculated by Utilities Kingston each year, and data going back to 2010 is shown in Figure 2 – Wet-weather Flow Capture. In 2017, Utilities Kingston released a real-time overflow map that displays overflow locations and lets you know if an overflow has occurred within the past 48 hours.

## 6 OVERFLOW REDUCTION EFFORTS

The City of Kingston and Utilities Kingston have been working to reduce the number of combined sewers, both sanitary and storm water in the same pipe, within the collection system. These combined sewers are the primary source of overflows in the system during wet weather. Several large, combined sewer separation projects are expected in 2026.

In 2025, a large sewer separation project in the Sydenham district was completed. Completed over two years, the project resulted in the separation of 1,250 meters of combined sewer. This took place on Victoria Street, Collingwood St, Cooper St, Earl St, and Union Street. This was a cooperative project between the City of Kingston and Utilities Kingston with total costs of \$10.6 million. This project will result in reductions in overflow volume frequency and duration particularly at the Collingwood CSO tank (PCP#56) as well as at downstream infrastructure such as the O'Kill/George St CSO tank (PCP#55) and further downstream along the Harbourfront Trunk sewer, including overflows at West St (PCP#26) and others.

The 2026 overflow reduction projects are:

- Princess St (Alfred St to Division St) - 409m of combined sewer to be removed,
- Garrett St (University to Division St) - 165m of combined sewer to be removed, and
- Vine/Ellice/Main/Ann Streets. - 195m of combined sewer removed.

These 2026 projects have a total budget of \$27.1 Million with the Princess St. and Garrett St projects expected to extend into 2027.

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The proposed 2026 projects are all aimed at reducing and working towards separating and ultimately eliminating sewage overflows from the combined system.

## 7 POLLUTION PREVENTION CONTROL PROGRAM

The Utilities Kingston Pollution Prevention and Control Plan (PPCP) was developed in 2017 and is set to be updated by late 2026. The PPCP focuses on combined sewer separation to reduce the number of overflows from the facilities in the future. The 2025 combined sewer separation projects reduced a large section of combined sewers that lead to a CSO tank that regularly overflows during rain events.

There were no specific timelines produced for the 2017 version of the PPCP. The City of Kingston and Utilities Kingston remain dedicated to completing sewer separations within the collection system in preparation for future population growth. More funds are being directed to PPCP work, following several years of other larger City of Kingston Infrastructure projects that are now complete.

Utilities Kingston completed inspections including collecting Closed-Circuit Television (CCTV) footage of large sections of sanitary sewers throughout the year. These inspections help to build our asset management inventory and identify any potential issues before they cause problems.

Utilities Kingston is working towards meeting the objectives set out in procedures F-5-1, and F-5-5, which describe the treatment requirements for municipal sanitary, and combined sewage systems. The City of Kingston Wastewater Collection System meets all of the minimum controls required by these procedures. Many projects have been completed, bringing the City's system closer to meeting the objectives. These projects have reduced the frequency and quantity of system overflows over the past several years. The proposed future combined sewer separation projects and targeted sanitary sewer upgrades will continue to bring the system closer to meeting the objectives set out in these procedures. In 2025, the volumetric criterion for the April to October period for wet weather flow capture was calculated at 98.1%. This meets this volumetric criteria which requires capture of 90% or greater. The frequency criterion for the June to September period, based on recreational water usage, was not met, with the occurrence of 4 events. These can be visualized in Figure 3 – Number of CSO Events during June-September, which indicates Utilities Kingston is getting closer to meeting this objective. All of the above-mentioned work will have a direct impact on the number and severity of overflows in the future. It appears the sewer separation and other overflow reduction projects are having the desired impact, although the weather has been less severe over the past several years as well. These results and the correlation to weather severity are shown in Figure 4 – Annual Overflow Volumes and Storm Severity Index.

## 8 CALIBRATIONS

Many of the pumping stations have flow meters installed which helps to investigate inflow and infiltration, as well as any operational problems that may occur. Third party contractors calibrated all facility flow meters. Calibration records are available upon request.

CSO overflow points have methods of recording volumes of sewage that overflow the sanitary system and discharge into the lake, or the storm water system. There are 15 flow monitoring devices used for these measurements. All accessible flow monitors were calibrated in 2025. Two locations were unavailable to staff due to security concerns, and two were unable to be calibrated due to conditions.

## 9 MAINTENANCE

Staff continued to use a preventative maintenance program in accordance with manufacturer's recommendations.

### **Additional Major Maintenance completed this year:**

- Infrared scans of high voltage electrical at pumping stations throughout the City.

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- Routine vibration monitoring conducted on equipment and motors.
- Two pumps at King St. PS were rebuilt.
- River St. PS degritting chamber was cleaned and inspected.
- Six air relief valves in the system were cleaned and had maintenance completed on them.
- Collins Bay PS. level sensor replaced and a pump rebuilt.
- Bath Rd. PS and Lakeshore PS new flow meters installed.

## 10 CAPITAL WORKS AND ALTERATIONS

The major highlights for capital works were:

- Construction of the Dockside PS was completed, and the station has been brought into service.
- King St. PS piping in the CSO tank relined.
- Barrett Ct. PS remaining three pumps and associated piping and valves replaced.
- Lakeshore PS both pumps rebuilt.
- Hillview PS both pumps rebuilt.
- Bath Lower PS new control cabinet, and a new level sensor installed.
- Rankin PS isolation and check valves replaced.

## 11 COMPLAINTS

In the 2025 reporting year, there were 13 odour complaints from residents regarding the sewage collection system.

Three of these complaints were related to the Days Rd. PS. Staff have been proactive in changing pre-filters on the odour control unit. Several modifications to the unit have been made including changing to a new type of carbon media in the filter. Staff are monitoring these modifications and hope it will further reduce any noticeable odours from the site.

Staff responded and investigated all of these complaints. Responses to these complaints included inspecting infrastructure upstream and downstream of the complaint, installing dishes in manholes to reduce the chance of sewer gasses being released, jetting and cleaning pipes, inspecting lines with a camera, some visits to residences and businesses, and sewage sampling.

Staff responded to 159 complaints about lateral and main collection system backups. Operations staff worked with property owners and tenants at each site to locate and confirm the source of the backup. The majority of the sewer backups were caused by non-flushable materials, tree root growth, or deformed or degraded pipes. 69 of the 159 complaints were related to private infrastructure (i.e., the homeowner or business owner's sewer lateral on their property). Staff worked to relieve these backups using different methods. Crews rodded lines, performed camera work to identify and locate the issue, used jet trucks to clear blockages to return the collection system to good working order. Operators also proactively flush known problem sewers, in order to maintain the integrity of the collection system.

For further information about this report or any questions regarding accessibility, contact Tim Bourne at [tbourne@utilitieskingston.com](mailto:tbourne@utilitieskingston.com) or call 613-546-1181 Ext 2190.

## 12 ANNUAL OVERFLOW SUMMARY

**Table 1 – Annual Overflow Summary**

<b>PCP #</b>	<b>Location</b>	<b>Number of Events</b>	<b>Volume (m3)</b>
1	Orchard-Emma Martin CSO	0	0.0
2	535 Rideau Belle Park Trunk	0	0.0
5	Dalton Ave PS	0	0.0
14	Barrack St E of King St	0	0.0
22	William St W of Ontario St	1	16.1
23	Earl St W of Ontario St	6	192.7
24	Gore St W of Ontario St	0	0.0
25	Lower Union W of Ontario St	4	584.0
26	West St S of King St	2	1,878.7
28	King St (O'Kill) PS	0	0.0
34	Helen St at Mack St	0	0.0
35	Palace Rd PS	0	0.0
41	Morton St PS	0	0.0
43	King-Portsmouth PS	0	0.0
48	West end of Sherwood Dr	0	0.0
50	South end of Parkway	0	0.0
51	Clarence St W of King St	2	812.1
52	Raglan Rd at Rideau St	2	124.3
53	Union St at Division St	1	55.4
55	King-George CSO	1	2,249.3
56	King-Collingwood CSO	2	12,893.4
57	Crerar PS	0	0.0
65	535 Rideau Belle Park Local	5	2,024.8
68	Quebec St at Barrie St	1	182.3
69	Greenview Dr PS	0	0.0
70	Carlisle St at Chestnut St	0	0.0
74	Barrett Court	0	0.0
79	Riverview Way PS	0	0.0
N/A	<b>Total</b>	<b>27</b>	<b>21,013.0</b>

## 13 ANNUAL SPILL SUMMARY

**Table 2 – Annual Spill Summary**

<b>PCP #</b>	<b>Location</b>	<b>Number of Events</b>	<b>Volume (m3)</b>
1	Orchard-Emma Martin CSO	0	0.00
2	535 Rideau Belle Park Trunk	0	0.00
5	Dalton Ave PS	0	0.00
14	Barrack St E of King St	0	0.00
22	William St W of Ontario St	0	0.00
23	Earl St W of Ontario St	0	0.00
24	Gore St W of Ontario St	0	0.00
25	Lower Union W of Ontario St	0	0.00
26	West St S of King St	0	0.00
28	King St (O'Kill) PS	0	0.00
34	Helen St at Mack St	0	0.00
35	Palace Rd PS	0	0.00
41	Morton St PS	1	90.00
43	King-Portsmouth PS	1	360.00
48	West end of Sherwood Dr	0	0.00
50	South end of Parkway	0	0.00
51	Clarence St W of King St	0	0.00
52	Raglan Rd at Rideau St	0	0.00

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<b>PCP #</b>	<b>Location</b>	<b>Number of Events</b>	<b>Volume (m3)</b>
53	Union St at Division St	0	0.00
55	King-George CSO	0	0.00
56	King-Collingwood CSO	0	0.00
57	Crerar PS	1	548.00
65	535 Rideau Belle Park Local	0	0.00
68	Quebec St at Barrie St	0	0.00
69	Greenview Dr PS	0	0.00
70	Carlisle St at Chestnut St	0	0.00
74	Barrett Court	0	0.00
76	Ravensview Wastewater Treatment Plant	0	0.00
79	Riverview Way PS	0	0.00
	Collection System	4	268.80
N/A	Total	7	1,266.80

**14 OVERFLOW LOADING RATE**

**Table 3 – Overflow Loading Rate**

<b>Date</b>	<b>Location</b>	<b>Duration (mm:ss)</b>	<b>Volume (m3)</b>	<b>BOD (kg)</b>	<b>TP (kg)</b>	<b>TSS (kg)</b>	<b>TKN (kg)</b>
April 3 <sup>rd</sup> , 2025	PCP 23 - Earl St W of Ontario St	00:05	2.258	0.04	0.00	0.12	0.01
April 19 <sup>th</sup> , 2025	PCP 23 - Earl St W of Ontario St	00:00	1.000	0.02	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 55 - King-George CSO	23:33	2,249.3	55.11	174.3 2	1.28	5.40
May 6 <sup>th</sup> , 2025	PCP 23 - Earl St W of Ontario St	01:53	168.364	2.98	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 25 - Lower Union W of Ontario St	01:56	442.115	7.83	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 22 - William St W of Ontario St	00:14	16.054	0.28	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 52 - Raglan Rd at Rideau ST	00:32	105.802	1.87	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 53 - Union St at Division St	01:22	55.387	0.98	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 51 - Clarence St W of King St	00:54	569.479	10.08	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 26 - West St S of King St	07:52	1,874.7	33.20	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 65 - 535 Rideau Belle Park Local	07:18	1,131.458	20.04	0.00	0.12	0.01
May 6 <sup>th</sup> , 2025	PCP 68 - Quebec St at Barrie St	01:27	182.332	3.23	0.00	0.12	0.01
May 7 <sup>th</sup> , 2025	PCP 56 - King-Collingwood CSO	12:24	12,891	228.28	0.00	0.12	0.01
May 17 <sup>th</sup> , 2025	PCP 23 - Earl St W of Ontario St	00:17	9.283	0.16	0.00	0.12	0.01
May 17 <sup>th</sup> , 2025	PCP 25 - Lower Union W of Ontario St	00:16	35.077	0.62	0.00	0.12	0.01
May 17 <sup>th</sup> , 2025	PCP 65 - 535 Rideau Belle Park Local	00:13	143.551	2.54	0.00	0.12	0.01
June 9 <sup>th</sup> , 2025	PCP 23 - Earl St W of Ontario St	00:02	0.723	0.01	0.00	0.12	0.01
June 9 <sup>th</sup> , 2025	PCP 25 - Lower Union W of Ontario St	00:00	0.001	0.00	0.00	0.12	0.01
June 22 <sup>nd</sup> , 2025	PCP 23 - Earl St W of Ontario St	00:09	11.086	0.20	0.00	0.12	0.01

Date	Location	Duration (mm:ss)	Volume (m3)	BOD (kg)	TP (kg)	TSS (kg)	TKN (kg)
June 22 <sup>nd</sup> , 2025	PCP 25 - Lower Union W of Ontario St	00:47	106.813	1.89	0.00	0.12	0.01
June 22 <sup>nd</sup> , 2025	PCP 52 - Raglan Rd at Rideau ST	00:11	18.463	0.33	0.00	0.12	0.01
June 22 <sup>nd</sup> , 2025	PCP 65 - 535 Rideau Belle Park Local	00:55	721.551	12.78	0.00	0.12	0.01
June 22 <sup>nd</sup> , 2025	PCP 51 - Clarence St W of King St	00:36	242.656	4.30	0.00	0.12	0.01
June 22 <sup>nd</sup> , 2025	PCP 26 - West St S of King St	00:04	4.000	0.07	0.00	0.12	0.01
June 22 <sup>nd</sup> , 2025	PCP 56 - King-Collingwood CSO	00:00	2.375	0.03	0.01	0.02	0.06
August 13 <sup>th</sup> , 2025	PCP 65 - 535 Rideau Belle Park Local	00:03	0.157	0.00	0.00	0.12	0.01
August 28 <sup>th</sup> , 2025	PCP 65 - 535 Rideau Belle Park Local	00:15	28.037	0.50	0.00	0.12	0.01

The average E.coli concentration used for surrogate sampling in 2025 was 285,929 CFU/100mL

## 15 SPILL LOADING RATES

**Table 4 – Spill Loading Rates**

Date	Location	Duration (Hours)	Volume (m3)	BOD (kg)	TP (kg)	TSS (kg)	TKN (kg)	E.coli
May 6th, 2025	PCP 57 - Crerar Blvd PS	17	548	5.21	0.10	9.59	0.52	29,500
May 6th, 2025	PCP 43 - King-Portsmouth PS	7.5	360	17.64	0.32	35.28	1.40	123,000
May 6th, 2025	PCP 41 - Morton St PS	8.25	90	0.36	0.02	6.03	0.08	3,700
May 10th, 2025	Sydenham Rd and Princess St	5.25	0.005	0.00	0.00	0.00	0.00	200
May 13th, 2025	1404 Bath Rd	6.75	140	25.90	0.57	15.40	5.46	0
May 30th, 2025	1452 Bath Rd	168	100	7.70	0.36	16.40	2.76	102,000
June 13th, 2025	1452 Bath Rd	1.25	28.8	4.75	0.16	4.75	1.17	900,000

## 16 OVERFLOW AND BYPASS EVENT AND VOLUME GRAPHS

Figure 2 – Wet-Weather Flow Capture

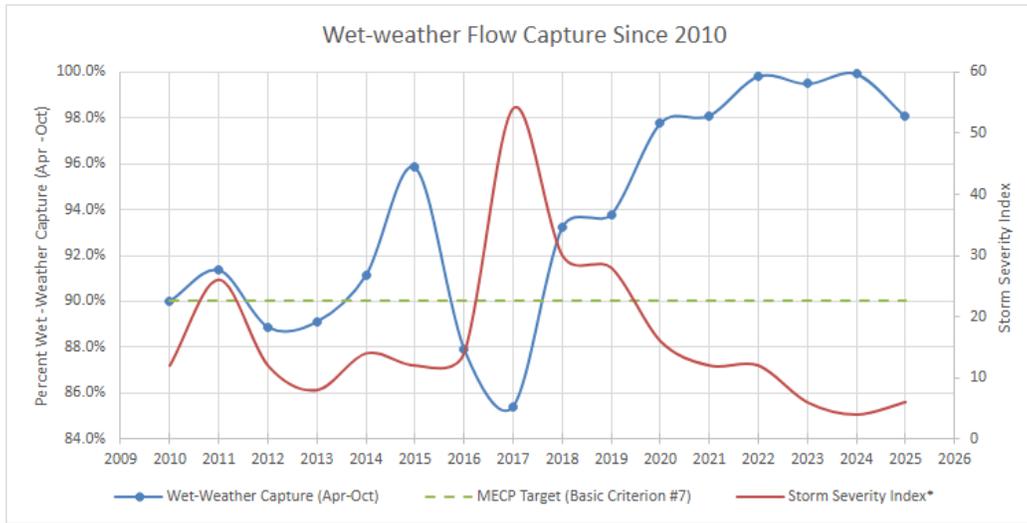


Figure 3 – Number of CSO Events During June-September

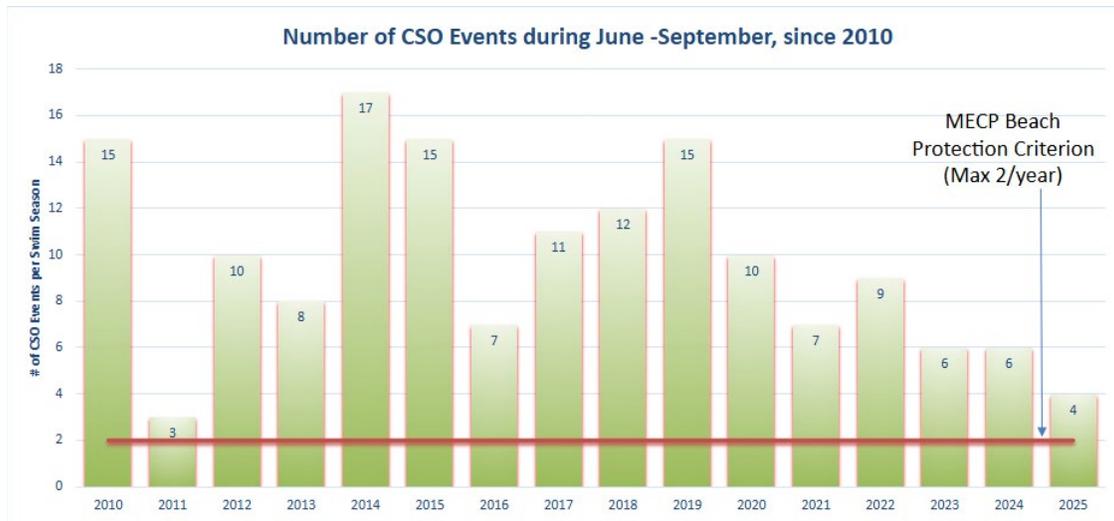


Figure 4 – Annual Overflow Volumes and Storm Severity Index

