

STORMWATER MANAGEMENT SYSTEM

Reporting period: Jan. 1, 2023 to Dec. 31, 2023

A description of the City of Vaughan's Municipal Stormwater Management System to fulfill the requirements of CLI-ECA #011-S701

This report is available to the public at no charge on the City of Vaughan's website and upon request.

Sept. 30, 2024 Environmental Services Department



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Executive Summary



The City of Vaughan (herein after referred to as the "City" or "Owner") received its first Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA #011-S701 [PDF]) for the Municipal Stormwater Management (SWM) System (herein after referred to as the "Authorized System") on Nov. 25, 2022. The City is responsible for monitoring, operating and maintaining the Authorized System in a state of good repair and for providing municipal services to protect people, the environment and property in alignment with the City's 2022-2026 Term of Council Service Excellence Strategic Plan (PDF). This report summarizes the results of the inspection and maintenance activities completed during the reporting period of Jan. 1, 2023 to Dec. 31, 2023.

Based on the monitoring activities conducted in the reporting period, the system is performing well. The City is committed to focusing on continuous improvement by building strong foundational processes to support operational and service delivery.

No Ministry of Environment, Conservation and Parks (herein after referred to as the "Ministry" or "MECP") inspections occurred during the reporting period.



100.19 kms of storm sewers inspected



660 stormwater pond inspections



263
resident
inquiries
and cases resolved



catch basins cleaned

~30 m

storm sewers repaired

10,023

73 maintenance holes and catch basins repaired

Municipal Stormwater Management System Description

The City's Authorized System serving the City's drainage area is a separate system for stormwater (i.e. designed not to transmit sanitary sewage and/or combined sewage) within the Don River and Humber River watershed(s). The Authorized System consists of storm sewers, culverts, ditches, SWM facilities and outlets.

An extensive stormwater network of assets is operated and maintained by the City to manage stormwater. According to the latest draft of the <u>City's Asset Management Plan (AMP) 2023</u>, the Authorized System is valued at \$2.36 billion (not including lakes, rivers and waterways), encompassing Stormwater Conveyance, SWM-Open Conveyance and SWM-Facility asset categories which are further divided into 14 asset types ranging from stormwater mains to facilities as detailed in Table 1.

Table 1: Stormwater Services Asset Inventory

Asset Category	Asset Type	Number	Unit of Measure
Stormwater conveyance	Mains – stormwater (STM)	1,173	Kilometres
	Mains – Clean water collectors (CWC)	5.4	Kilometres
	Mains – Foundation Drain Collectors (FDC)	87	Kilometres
	STM laterals	239	Kilometres
	FDC laterals	16	Kilometres
	STM maintenance holes	16,221	Each
	CWC maintenance holes	35	Each
	FDC maintenance holes	685	Each
SWM – open conveyance	Catch basins	22,478	Each
	Culverts	352	Each
	Inlet – Outlet structures	794	Each
	Devices	489	Each
	Ditches	287	Kilometres
*SWM – facility	SWM ponds	191	Each

This inventory includes the following asset statuses – a) Active; b) Assumed; c) Unassumed; d) Proposed; e) Unknown; f) Blank. The inventory also includes the following ownership statuses a) Vaughan; b) Park; c) Unknown; d) Blank. If an asset is in the City's GIS database and meets one of the asset statuses AND one of the ownership statuses listed above, then it is part of the inventory as tabulated above. Otherwise, it was excluded. Source – <u>AMP 2023 (Draft).</u>

Please refer to Appendix A for a map of the Authorized System.

^{*149} SWM ponds are assumed and operated by the City.

CLI-ECA Requirement: Annual Performance Report for Authorized System

In accordance with CLI-ECA #011-S701, Schedule E – Section 5.2, the Owner shall prepare an Annual Performance Report for the Authorized System.

The Report shall:

- include a summary of all monitoring data along with an interpretation of the data and an overview of the condition and operational performance of the Authorized System and any adverse effects on the natural environment:
- include a summary and interpretation of environmental trends based on all monitoring information and data for the previous five years;
- include a summary of any operating problems encountered and corrective actions taken;
- include a summary of all inspections, maintenance and repairs carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Authorized System;
- include a summary of the calibration and maintenance carried out on all monitoring equipment;
- include a summary of any complaints related to the sewage works received during the reporting period and any steps taken to address the complaints;
- include a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval, including a list of Alterations that pose a Significant Drinking Water Threat;
- include a summary of all spills or abnormal discharge events;
- include a summary of actions taken, including timelines, to improve or correct performance of any aspect
 of the Authorized System; and
- include a summary of the status of actions for the previous reporting year.

Additionally, the Report shall:

- cover the reporting period of Jan. 1, 2023 to Dec. 31, 2023;
- be submitted to the Director (MECP); and
- be made available without charge to members of the public who are served by the Authorized System (on request or by publishing the report on the City's website).

Summary and Interpretation of Monitoring Data

This section provides a summary of the operation, inspection and monitoring data collected by the City as a part of the scheduled preventive maintenance activities.

Routine and preventive maintenance activities include CCTV inspection of stormwater mains, catch basin cleaning, monthly, semi-annual and annual inspections of SWM ponds and preventive repair of SWM infrastructure. Table 2 includes details of several routine monitoring programs undertaken during the reporting period.

Data collected through these monitoring programs can be used as an indicator of overall performance of the Authorized System. This data assists:

- identifying pipe renewal and replacement activities. Data is used to identify the sewage collection system's linear infrastructure assets renewal (CIPP/trenchless repairs) and replacement (open-cut/rehabilitation) requirements.
- identifying inflow and infiltration reduction activities. Data is used to determine sources of inflow and infiltration in sanitary sewers and requirements for corrective actions.
- determining decommissioning and disposal activities. Asset decommissioning and disposal
 activities are performed to decommission and dispose of assets due to aging or changes in performance
 and capacity requirements.
- providing input to the risk assessment of assets.
- providing input to the annual capital and operating budgets.
- determining the Authorized System's condition. As per the latest draft of the <u>City's Asset Management Plan (AMP) 2023</u>, nearly 99.7 per cent of the City's service assets in the Sewage Collection System are in "Very Good" condition. The remainder assets are in "Good" and "Fair" condition, indicating they meet current needs but may require attention in the future as they age as shown in Figure 1.

Figure 1: Asset Condition Summary (SWM System)

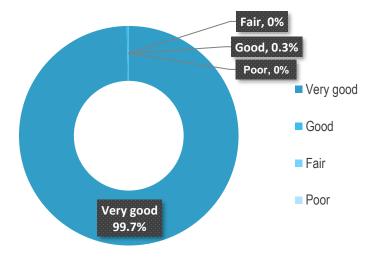


Table 2: Summary and interpretation of Monitoring Data for SWM Assets in the City of Vaughan

Monitoring Program	Current Process	Interpretation of Monitoring Data
SWM pond inspections	Routine inspection and maintenance activities at all 149 SWM ponds that are assumed and operated by the City. This includes:	Data collected from routine inspections is recorded in logbooks. Deficiencies or any operating issues
	 routine monthly and semi-annual inspections on ponds requiring frequent inspections. 	identified during inspections are flagged for review and work orders are issued for corrective action.
	 after significant storm events for select ponds. 	
	 annual inspections. 	
CCTV inspection	The CCTV program collects structural, hydraulic and location-based information about the City's sewer infrastructure. All sewers within the Authorized System are expected to be inspected once every 10 years.	Data is used to determine maintenance, replacement and/or repair activities. Work orders are generated and combined into repair packages for corrective action as required.
Catch basin cleaning	The City conducts cleaning of approximately 10,000 catch basins per year as a part of its annual maintenance program. The objective is to remove any debris that restricts the flow of water through the catch basin and restore the catch basin to full capacity. This program also includes hauling and disposal of material collected during the process.	As cleaning continues, the City will identify locations with higher sediment loading and will investigate the fundamental cause. When an issue is identified, a work order is issued/created for corrective action.
Sediment removal and pond clean-out	Recognizing the importance of maintaining existing stormwater infrastructure, the City prioritizes restoring the treatment capacity (i.e., water retention volume) from a prioritized list of SWM ponds based on sediment loading and accumulation data.	Facilitates the collection of data associated with the current condition of the SWM ponds, sediment loading, sediment testing, sediment removal and site restoration.
SWM facility monitoring	The City's SWM Facility Monitoring Program was established to ensure the as-built SWM facilities function in accordance with the approved design prior to assumption.	The results of the inspections are compared with both pond design drawings and the SWM facility's Environmental Compliance Approval (ECA) documents and then documented.

Based on the monitoring activities conducted during the reporting period, the Authorized System is performing well. The programs listed in Table 2 are undertaken to protect the City's natural environment from adverse effects. The City is committed to continuous improvement by building strong foundational processes to support operations and service delivery.

Summary and Interpretation of Environmental Trends Based on all Monitoring Information and Data from the Previous Five Years

As per <u>CLI-ECA #011-S701</u> (PDF) Schedule E Section 4.0 requirements, the City is required to develop and implement a Monitoring Plan for the Authorized System on or before Nov. 15, 2025, or within 36 months of the date of the publication of the Ministry's monitoring guidance, whichever is later.

The Monitoring Plan shall include:

- procedures to verify that the operational performance of the Authorized System is as designed/planned;
- procedures to assess the environmental impact of the Municipal Stormwater Management System; and
- procedures for any corrective action that may be required to address any performance deficiencies or environmental impacts identified from the above conditions (a) or (b).

The Ministry's monitoring guidance has not yet been released. The City will develop a Monitoring Plan based on the guidance document within the timeline stipulated above. This section of the report will be populated in subsequent reporting years following the implementation of the Monitoring Plan.



Summary of Inspection, Maintenance and Repairs

Table 3 provides a summary of operating problems encountered during the reporting period and the corresponding corrective actions taken.

Table 3: Summary of Operating Problems Encountered and Corrective Actions Taken

Operating Problem Encountered	Corrective Action Taken			
Inlet grate block of debris/branches	The grate was cleared of debris/branches.			
Misplaced or missing life ring	The life ring was put back on its station when misplaced. When a life ring was reported missing, a new life ring was supplied and secured to the station.			
Beaver activity	Site investigations were conducted to determine the impact of the dam on the SWM pond adjacent infrastructure and private property, including its effects on watercourse flooding, increased turbidity and potential property damage. If an impact was determined to be present and following consensus between City staff and conservation authorities (as required), the dam was removed.			
Litter/debris	Litter/debris was removed and documented for future monitoring to assess trends in litter/debris accumulation.			
Broken fence	The fence was repaired.			
Grate damaged	The grate was repaired.			



Operating Problem Encountered	Corrective Action Taken		
High water level due to blockages or significant rain event	The inlet/outlets (I/Os) and Hickenbottom drains were inspected for blockages. Obstructions like branches, debris and small trees were removed from the I/Os of the pond and water levels were monitored to ensure the outlet was draining properly. Observed conditions were documented for future monitoring to assess trends in debris buildup. If the water level remained high, I/Os and Hickenbottom drains were flushed to clear any remaining debris. In all cases, the water level was successfully restored. If drainage issues recurred, the information was used to inform future pond dredging/clean-out prioritizations and was then documented for future monitoring.		
Graffiti/vandalism	The graffiti was removed, and the vandalism was repaired.		
Excess vegetation growth impeding access and blocking I/Os	The vegetation, fallen trees and/or tree branches were removed from the perimeter of the pond. Seasonal grass cutting is also undertaken to support operational access to the I/Os.		
Pond signage missing or damaged	New signage was installed as required.		
Buried maintenance hole	Debris or snow around the maintenance hole was removed and/or the buried maintenance hole was exposed.		
Access roads hindered by vegetation overgrowth or snow	Vegetation was cut back and/or snow was removed and then documented for future monitoring.		
Missing or misplaced bollards	The bollards were reset when misplaced. When bollards were reported missing, new bollards were ordered and installed.		
Large objects in and around SWM pond	Large objects were removed from in and/or around the pond.		



Summary of Inspection, Maintenance and Repairs



Throughout the year, several tasks are conducted to ensure the Authorized System is operated and maintained to achieve compliance with CLI-ECA #011-S701 (PDF). These tasks are generally grouped into three categories:

- **Preventive Maintenance** conducted on a routine basis to maintain the equipment in good working order and lessen the likelihood of failure.
- **Corrective Maintenance** conducted to correct deficiencies discovered during routine inspections or preventive maintenance activities to return equipment to working order.
- **Unplanned (Emergency) Maintenance** conducted in response to an emergency, such as equipment failure.

Table 4 summarizes the inspection and preventive maintenance activities carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Authorized System during the reporting period.

Table 4: Summary of Inspection and Preventative Maintenance Activities in the Reporting Period

Work Description	Frequency	Quantity	
Storm sewer CCTV inspection	Annually (10% program)	100 kilometres	
Catch basin cleaning	Annually (33% program)	10,023	
SWM pond inspections	Annual inspections;	~660	
	semi-annual and monthly inspections of selected ponds		
Aeration system and filter inspections	Annual and as needed	3	
Grass cutting at SWM ponds	Seasonally	Three times per year per SWM pond	

Table 5 summarizes of corrective and unplanned maintenance and repair activities carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Authorized System during the reporting period.

Table 5: Summary of Corrective and Unplanned Maintenance and Repair Activities undertaken on the Authorized System within the Reporting Period

Work Description	Work Category	Location	Number of Work Orders
Storm main repairs (10m)	Unplanned	Glen Shields Avenue and Prairie Dunes Place	1
Storm lateral repairs (20m)	Unplanned	Rowntree Dairy Road	1
Storm maintenance hole repairs	Unplanned	Various	3
Catch basin repairs	Unplanned	Various	27
SWM pond access road repair	Unplanned	Nov. 2, 2023	1
Storm maintenance hole repairs	Corrective	Various	23
Catch basin repairs	Corrective	Various	20



Summary of Calibration and Maintenance on Monitoring Equipment

There was no monitoring equipment within the Authorized System requiring calibration or maintenance during the reporting period.



Summary of Complaints

The City makes every effort to address and resolve resident inquiries in a timely manner. A Customer Relationship Management (CRM) database is used to record details, including information collected from the resident, on the nature of the inquiries and actions taken by the City. The CRM solution was identified in the Service Vaughan Strategy and Implementation Plan and the Digital Strategy and aligns with Service Vaughan's vision of "Citizen First Through Service Excellence." The benefits of CRM include:

- enhancement of technology which provides staff with better tools to track, manage, follow up and report on service requests; and
- an improved service delivery model that allows users to have a holistic view of all services delivered to residents, including data analytics.

Table 6 provides a summary of all inquiries related to the Authorized System during the reporting period.

Table 6: Summary of all Inquiries During the Reporting Period

Interaction Type	Description of Inquiry	Number of Inquiries ²	Status
Catch basins and maintenance holes	 Exposed maintenance hole or catch basin, lid missing, displaced or broken Drainage issues/blockage Raised or sunken maintenance hole Suspected dumping in maintenance hole/catch basin Item of value dropped into catch basin Animals trapped inside 	136	Active: 0 Resolved: 136
SWM ponds	 Dumping in ponds Large objects in or around ponds High or low water levels Signage/life station missing 	49	Active: 0 Resolved: 49
Spills ¹	 Witnessed dumping Roadway spill Odor issue as a result of suspected spill or dumping Road accident – fuel spill 	42	Active: 0 Resolved: 42
Stormwater – other	 Item of value dropped into catch basin Stagnant water or mosquito inquiry Sinkholes Odor issues Flooding/ponding/drainage concerns 	36	Active: 0 Resolved: 36

¹Includes overland spill, private side spill, etc. Spills not related to the Authorized System are forwarded to relevant authorities before the case is marked "closed" or "cancelled".

²Complaints not related to the Authorized System are forwarded to relevant authorities before the case is marked "closed" or "cancelled".



Below are typical corrective actions undertaken in response to inquiries:

- Initiation of site investigation and correspondence with residents.
- Initiation of immediate action on-site to minimize the extent of damage where possible, such as:
 - o cleaning and removal of debris/blockage from catch basin, pond inlets to restore drainage.
 - spill containment using absorbent pads/booms;
 - o elimination of safety issues by attending to exposed maintenance holes; or
 - cleaning and flushing works to improve drainage.
- Determination of on-site action, where required, to respond to unplanned maintenance or prioritization of further repair work associated with corrective maintenance.
- Creation of work orders for corrective/unplanned repairs as applicable.
- Collaboration and engagement with other City departments or authorities as required for complaints not related to the Authorized System.

Summary of Alterations to the Authorized System

As per <u>CLI-ECA #011-S701</u> (PDF), the City can pre-approve low-risk municipal alterations to the Authorized System when the permit's Schedule D criteria are met.

Once new infrastructure is assumed, the City takes on the duty of operating and maintaining it to ensure safety and reliability. These operations and maintenance activities are necessary to ensure the system continues to perform as designed.

Table 7 summarizes all alterations to the Authorized System that were pre-approved by the City within the reporting period, including a list of alterations that pose a significant drinking water threat.

Table 7: Summary of all Alterations to the Authorized System Within the Reporting Period

Number	Alteration to the Authorized System Project Name	Description of Works	Location of Works	Date of Approval (2023)	Form	Does this Alteration Pose a SDWT
1	Block 59 west - spine servicing	Installation of new storm sewers along proposed streets Anatolian Drive and John Lawrie Street, for the purposes of servicing the Block 59 west subdivision development.	North-East corner of Langstaff Road and Huntington Road.	Jan. 25	SW1	No
2	Block 59 west - spine servicing	Installation of one SWM pond complete with a stormwater diversion system, and two concrete box culvert storage systems with one Oil and Grit Separator (OGS) (model Stormceptor EF-012) downstream of each of the respective box culvert systems, totaling two proposed OGS units for the purposes of servicing the Block 59 west subdivision development.	North-East corner of Langstaff Road and Huntington Road.	Jan. 25	SW2	No
3	Block 11 - 9600 Bathurst St. and Wood Valley Park redevelopment.	Alterations to the existing storm sewer network within the existing Wood Valley Park which includes, removal and decommissioning of existing storm sewers and the installation and commissioning of new sewers for redevelopment and Cuenca Developments Inc.	Wood Valley Park, 1 Marc Santi Blvd.	April 3	SW1	No

Number	Alteration to the Authorized System Project Name	Description of Works	Location of Works	Date of Approval (2023)	Form	Does this Alteration Pose a SDWT
4	Block 11 - 9600 Bathurst St. and Wood Valley Park Redevelopment	Installation of three (3) bioswales and one (1) bioretention cell and one (1) OGS unit (model MH 128 CDS PMSU-2023-5-C) as a part of redevelopment works for the existing Wood Valley Park.	Wood Valley Park, 1 Marc Santi Blvd.	April 3	SW2	No
5	19T-18V001 - Rutherford Land Development Corp.	Installation of new storm sewers along Caldari Road in the Jane Rutherford subdivision (19T-18V001).	Caldari Road.	April 28	SW1	No
6	19T-18V001 - Rutherford Land Development Corp.	Installation of new OGS unit (model Stormceptor EF-06) on Caldari Road in the Jane Rutherford subdivision (19T-18V001).	Caldari Road.	April 28	SW2	No
7	Block 51 - Lansdowne Avenue	Installation of new storm sewer within the existing road allowance of Lansdowne Avenue, in conjunction with the proposed Elegance Residences Condominium Apartment development.	Landsdowne Avenue.	April 28	SW1	No
8	Block 51 - Lansdowne Avenue	Installation of OGS unit (model Stormceptor EF-04) within the existing road allowance of Lansdowne Ave. in conjunction with the proposed municipal storm sewer for Elegance Residences Condominium Apartment development.	Landsdowne Avenue.	June 11	SW2	No
9	19T-20V005 - Fleur De Cap development	Installation of new storm sewers to service Street 1 in Block 34 east by Fleur de Cap Developments Inc. and Cuenca Developments Inc.	~33m west of Jane Street to ~30m east of Shipwill Street.	June 11	SW1	No
10	19T-20V004 - Nashville Heights residential subdivision (Phase 2B)	Installation of new storm sewers on Alsation Crescent.	Alsation Crescent: ~22m south of Mactier Drive; ~96 m south of Mactier Drive; ~116 m south of Mactier Drive; ~213m south of Mactier Drive.	July 19	SW1	No

Number	Alteration to the Authorized System Project Name	Description of Works	Location of Works	Date of Approval (2023)	Form	Does this Alteration Pose a SDWT
11	Blk 64 south - spine services	Installation of new storm sewers on Labourers Way (Street A) to service Block 64 south Landowners Group Inc.	Labourers Way: ~26m east of Highway 50 to ~28m west of Hunter's Valley Road.	Sept. 25	SW1	No
12	19T-19V003 - Properties Inc.	Installation of new and replacement of existing storm sewers to serve the Block 18 Properties Inc. school block redevelopment.	Feversham Court and Muret Crescent.	Sept. 25	SW1	No
13	19T-21V004 - 9465 Weston Rd.	Installation of new storm sewers on Lichen Court. to serve the 9465 Weston Rd. residential development.	Lichen Court.: ~59m north of Comdel Boulevard to ~86m north of Comdel Boulevard.	Sept. 7	SW1	No
14	19T-15V001 - Janessa Court.	Installation of new storm sewers to service Street A in Block 12 by Condor Properties Ltd.	~66m south of Janessa Court to ~143m south of Janessa Court.	Dec. 16	SW1	No
15	Blk 64 north - Bethpage Properties West Inc.	Installation of new storm sewers to service the industrial development at Highway 50 and Rutherford Road by Bethpage Properties West Inc. within the Block 64 north.	Highway 50 and Rutherford Road.	Dec. 19	SW1	V

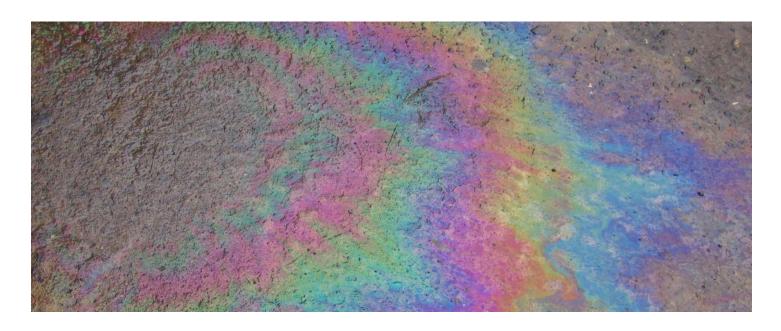
Summary of Collection System Overflows or Spills of Sewage

A **spill** is a discharge of any substance to a sewage works or to the natural environment which is abnormal in quantity or quality considering all the circumstances of the discharge.

Overflow and spill events are reported to the Ministry's Spills Action Centre (SAC). Table 8 provides a summary of spills and/or abnormal discharge events that occurred during the reporting period.

Table 8: Summary of Spills and/or Abnormal Discharge Events During the Reporting Period

SAC Ref#	Date of Event (2023)	Location	Description	Corrective Actions
1-4K3L47	Dec. 27	100 Costa Rd.	Diesel spill onto the road and entered a nearby catch basin.	SAC was notified. Absorbal was used to prevent more diesel from reaching the catch basin. The road was power washed and the catch basin was vacuumed simultaneously until there was no further trace of sheen remaining. The surface at the watercourse was skimmed at the outfall until it was evident there was no sheen remaining.
1-474UJJ	Nov. 13	3680 Langstaff Rd.	Diesel spill onto the road and entered a nearby catch basin.	The Ministry notified the City of a reported spill in a catch basin within the City's jurisdiction. Absorbent pads were used to contain the spill in the catch basin.



SAC Ref#	Date of Event (2023)	Location	Description	Corrective Actions
1-3STOBD	Sept. 1	95 Rainbow Dr.	Gasoline spill on driveway.	SAC was notified. Absorbal was used to contain the spill.
1-3RKAWA	Aug. 23	2800 Rutherford Rd.; Joint Operations Centre pond (DP42)	Hydraulic oil entered the pond due to machinery leak near the wash bay parking lot.	SAC was notified. The spill was contained by applying booms and pads at the I/Os of the pond. The sheen was cleaned from the pond and monitoring continued to ensure no sheen remained.
1-3PLAIN	Aug. 5	Old Weston Road and Steeles Avenue West	Engine coolant spilled onto the road and entered a nearby catch basin.	SAC was notified by a Toronto Transit Commission (TTC) employee. The spill was actioned and resolved by the TTC.
1-3KY8A2	June 28	New Enterprise Way	Diesel (suspected) spill into a pond.	SAC was notified. A spill response contractor was dispatched for clean up. The site was monitored until no sheen was observed.
1-3KILO9	June 21	93 Casa Nova Dr.	Dumping of cooking oil into a catch basin.	SAC was notified. Absorbent pads were used in the catch basin to contain the spill. Downstream catch basins and maintenance holes were unaffected.
1-32UPAU	March 15	Clark Avenue West and Jason Street	Gasoline spill onto the road and entered a nearby catch basin.	SAC was notified. The spill was contained to the outfall with booms and pads, as well as a secondary boom containment downstream across the waterway. Absorbent pads were used to contain the spill in upstream catch basin.
1-2HFRAS	Feb. 13	8214 Kipling Ave.	Methylene diphenyl diisoyanate spill from a foam factory	SAC notified the City of a reported spill from a foam factory. The City initiated a site inspection however, the Ministry confirmed the spill had been cleaned up.



Summary of Actions Taken to Improve or Correct Performance of Any Aspect of the Authorized System

The City takes a proactive approach to identifying inefficiencies in the Authorized System and develops plans and measures to remediate those inefficiencies to improve overall system performance with the goal of reducing adverse environmental impacts and capital expenditures. Identifying and remediating system inefficiencies helps extend the life of infrastructure and increase existing system capacity, ultimately contributing to the long-term environmental and financial sustainability of the Authorized System.

Table 9: Summary of Actions Taken to Improve or Correct Performance of Any Aspect of the Authorized System

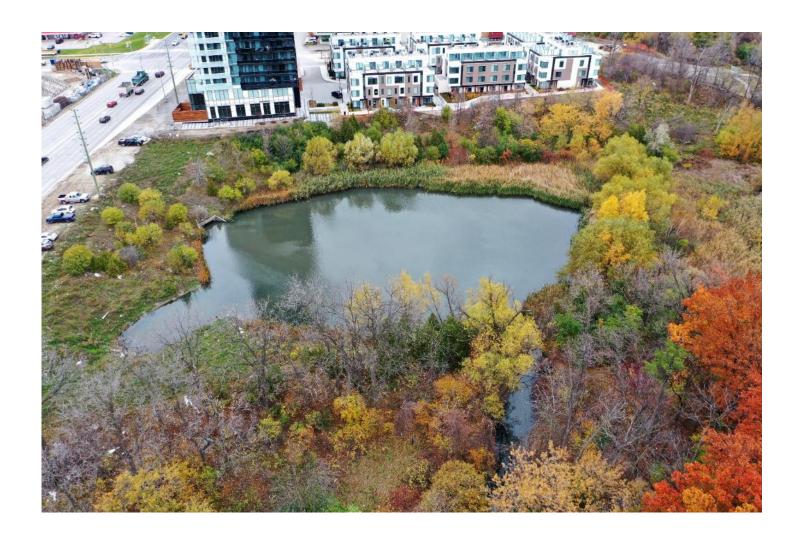
Summary of Effort/Project	Description	Timeline
Stormwater management improvements at various Disaster Mitigation and Adaptation Fund (DMAF) funded sites	This project included construction of Oil Grit Separator (OGS) units at various DMAF Funded Sites. A total of 17 OGS units were installed during the reporting period at various sites across the City. The OGS units ranged from 1800mm to 2400mm in diameter and are expected to improve overall efficiency of the system and improve water quality.	Q3 2023
Villa Park stormwater pond retrofit	This project included the retrofit of Villa Park SWM facility from a dry pond to wet pond to provide water quality control benefits and enhance water quality performance by incorporating proposed forebays and main cells into the facility.	Q3 2022 to Q4 2023
Harmonia stormwater pond retrofit	This project included the retrofit of Harmonia SWM facility from a dry pond to wet pond to provide water quality control benefits and enhance water quality performance by incorporating proposed forebays and main cells into the facility.	Q3 2022 to Q4 2023
Acumen stormwater pond retrofit	This project included the retrofit of Acumen SWM facility from a dry pond to wet pond by implementing a permanent pool, installation of Hickenbottom structure equipped with an orifice plate etc., to provide water quality control benefits and enhance water quality performance by incorporating proposed forebays and main cells into the facility.	Q3 2022 to Ongoing
Saddlecreek outfall improvements	The site was an existing outfall that discharged directly into Robinson Creek without water quality or quantity control. The outfall improvement project included the implementation of a constructed wetland within the areas adjacent to the existing outlet. It also included installation of a flow splitter to redirect the water quality flows towards the SWM facility and installation of an outfall channel to direct outflows and excess flows safely towards Robinson Creek.	Q3 2022 to Ongoing

Summary of Effort/Project	Description	Timeline
SWM pond clean-out drawings	This project included obtaining all necessary permits from conservation authorities and preparation of SWM pond clean-out drawings in support of applicable permitting requirements and tendering for clean-out and sediment removal services.	Q3 2023 to Q4 2024
Westridge pond clean-out	This project restored the pond's original design capacity to ensure the pond continues to meet its design objectives with respect to water quality and quantity.	Q3 2022 to Q4 2024
SWM facility monitoring project	The City conducts scheduled monitoring of SWM facilities prior to assumption to confirm critical pond componentry and to ensure that the as-built SWM facilities function in accordance with the approved design.	Active during the reporting period and ongoing
VMC southwest quadrant – retrofit of interchange pond	Preliminary pond retrofit design as part of Draft Plan of Subdivision submission includes pond regrading to achieve current quantity, quality and erosion controls. The detailed design is in progress.	Active during the reporting period and ongoing
Portage Parkway superpipe	This project provides detention capacity to accommodate road widening in Portage Parkway.	Active during the reporting period and ongoing
Public information and education about spills and hazardous materials	The City maintains a webpage for "Spills and Hazardous Materials" with information on what an environmental spill is, what the City does to manage environmental spills, what to do when a spill is spotted and how a spill should be reported to Spills Action Centre. This proactive approach helps to identify, report and respond to a spill promptly.	Active during the reporting period and ongoing



Summary of the Status of Actions from the Previous Reporting Year

This section shall act as a placeholder for the next reporting year (Jan. 1, 2024 to Dec. 31, 2024) as this is the first Annual Performance Report following the issuance of <u>CLI-ECA #011-S701</u> (PDF).



Appendix A: City of Vaughan Stormwater Management System

