

ENVIRONMENTAL COMPLIANCE APPROVAL For a Municipal Stormwater Management System

ECA Number: 018-S701

Issue Number: 1

Pursuant to the *Environmental Protection Act*, R.S.O. 1990, c. E. 19 (EPA), and the regulations made thereunder and subject to the limitations thereof, this environmental compliance approval is issued under section 20.3 of Part II.1 of the EPA to:

Kingston, The Corporation of the City of

**216 Ontario St 0
Kingston, ON K7L 2Z3**

For the following Sewage Works:

City of Kingston Stormwater Management System

This Environmental Compliance Approval (ECA) includes the following:

Schedule	Description
Schedule A	System Information
Schedule B	Municipal Stormwater Management System Description
Schedule C	List of Notices of Amendment to this ECA: Additional Approved Works
Schedule D	General
Schedule E	Operating Conditions
Schedule F	Residue Management
Appendix A	Stormwater Management Criteria

Except where specified otherwise, all prior ECAs, or portions thereof, issued by the Director for Sewage Works described in section 1 of Schedule B are revoked and replaced by this Approval.

DATED at TORONTO this 25th day of August, 2022

Signature



Aziz Ahmed, P.Eng.
Director, Part II.1, *Environmental Protection Act*

Schedule A: System Information

System Owner	Kingston, The Corporation of the City of
ECA Number	018-S701
System Name	City of Kingston Stormwater Management System
ECA Issue Date	August 25th, 2022

1.0 ECA Information and Mandatory Review Date

ECA Issue Date	August 25th, 2022
Application for ECA Review Due Date	June 15, 2026

- 1.1 Pursuant to section 20.12 of the EPA, the Owner shall submit an application for review of the Approval no later than the Application for ECA Review Date indicated above.

2.0 Related Documents

2.1 Other Documents

Document Title	Version
Design Criteria for Sanitary Sewers, Storm Sewers, and Force mains for Alterations Authorized under Environmental Compliance Approval	v.1.1 (Jul 28, 2022)

3.0 Stormwater Master Plan and Asset Management Plan

Document Title	Version
Cataraqui Source Protection Plan	v.1 (November 2014)
Cataraqui Region Conservation Authority Watershed and Subwatershed Map	v.1 (2013)
Core Asset Management Plan	v.1 (July 2022)

4.0 Operating Authority

System	Operating Authority
City of Kingston Stormwater Management System	The Corporation of the City of Kingston

Schedule B: Municipal Stormwater Management System Description

System Owner	Kingston, The Corporation of the City of
ECA Number	018-S701
System Name	City of Kingston Stormwater Management System
ECA Issue Date	August 25th, 2022

1.0 System Description

- 1.1 The following is a summary description of the Sewage Works comprising the Municipal Stormwater Management System:

Overview

The Municipal Stormwater Management (SWM) System serving the City of Kingston's drainage area, is a separate system for stormwater (i.e., designed not to convey sanitary sewage, combined sewage) within the Lake Ontario, Great Cataraqui River, Gananoque River, and St. Lawrence River watersheds. The Municipal SWM System consists of storm sewers, culverts, ditches, swales, Stormwater Management Facilities and outlets.

This ECA covers the entire Municipal SWM System owned and operated by the City of Kingston. This ECA does not cover municipally, or privately owned sewage works on industrial or commercial land.

This Municipal Stormwater Management System connects to three (3) Municipal Stormwater Management Systems: Loyalist Township to the west, South Frontenac Township to the north and The Township of Leeds and the Thousand Islands to the east.

Sewage Collection System

- 1.2 The Authorized System comprises:
- 1.2.1 The Sewage Works described and depicted in each document or file identified in column 1 of Table B1.

Table B1: Infrastructure Map	
Column 1 Document or File Name	Column 2 Date
City of Kingston – Storm Infrastructure Map (Jan, 2022)	January 7, 2022

City of Kingston – Watershed Map (2022)	January 12, 2022
CRCA – Watershed and Subwatershed Map (2013)	2013
City of Kingston – Storm Catchment Areas (Jan, 2022)	January 12, 2022
CRCA - Drinking Water Source Protection Areas of Kingston (Jan, 2012)	January 2012
GEODATABASE ACCESS - Cartegraph Sign In and Navigation Procedures	January 2022

1.2.2 Storm Sewers, Stormwater Management Facilities, stormwater pumping stations and Sewage Works associated with a Third Pipe Collection System that have been added, modified, replaced, or extended through authorization provided in a Schedule C Notice respecting this Approval, where Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.3 Storm Sewers, Stormwater Management Facilities and Sewage Works associated with a Third Pipe Collection System that have been added, modified, replaced, or extended through authorization provided by Schedule D of this Approval, where Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.4 Any Sewage Works described in conditions 1.3 through 1.8 below.

Stormwater Collection System

1.3 Categorization of the Authorized System at the date of issue of this Approval is as follows:

Table B2. Stormwater Collection System by Diameter			
System Type	Pipe Diameter (mm)	Length (km)	System Totals (km)
Storm Sewers	Up to 250	37	
Storm Sewers	> 250 - 500	87	
Storm Sewers	> 500 - 1050	187	
Storm Sewers	> 1050	126	
Total Storm Sewers		--	454
Ditches / Swales	N/A	--	1,283
Total System Length (km)		--	1,737

Table B3. Summary of Stormwater Management Facilities by Type and Pumping Stations							
Facility Type	Basic Treatment for Suspended	Normal Treatment for Suspended	Enhanced Treatment for Suspended	Other Treatment Level for Suspended	Total Quality Control	Total Quantity Control	Total Number of Facilities

	Solids*	Solids *	Solids *	Solids**			
LID Facilities - Retention (infiltration, evapotranspiration, harvest)				33		33	33
LID Facilities - Filtration							
Stormwater Management Ponds – Wet (includes wetlands, hybrids)	0	8	7	12 ¹	Unknown	Unknown	27
Stormwater Management Ponds - Dry				11 ¹	Unknown	Unknown	11
Super Pipe / Storage Facility							
Filtration MTD - Filter Unit							
Sedimentation MTD - OGS	0	2	5	2 ¹	9		9
Pumping Stations							
Other							
Total Number of Facilities	0	10	12	58	9	33	80

* Basic, normal, and enhanced treatment correspond to 60%, 70% and 80% suspended solids removal on an annual average long-term basis, respectively.

** Treatment levels below 60% suspended solids removal on an annual average long-term basis.

¹ If the level of treatment was unclear it was filed under 'other treatment'.

Table B4. Third Pipe Collection System

Description	Pipe Diameter (mm)	Length (km)	Quantity	System Totals
Third Pipe Sewer	Up to 250		N/A	
Third Pipe Sewer	> 250 - 500		N/A	
Third Pipe Sewer	> 500		N/A	
Total				Km
Other Infrastructure Components (e.g., storage tank)	N/A	N/A		

Table B5. Sewage Works on Private Land that are part of the Municipal Stormwater Treatment Train*		
Description	Location	ECA # (if applicable)
SWM-P04 – SWM X Pond	Division St (44.263653, -76.494513)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
SWM-P10 – SWM Wet Pond (Great Cataraqui River)	311 Conacher Drive (44.26635, -76.491308)	6327-AYDJES
SWM-P11 – SWM Wet Pond (Lake Ontario, Little Cataraqui Creek)	311 Conacher Drive (44.266581, -76.49472)	6327-AYDJES
OGS Unit (Unknown)	434 Taylor Kidd Boulevard	1929-6HZMKG

* Identifies privately owned Sewage Works that are not part of the Authorized System, but are part of a Stormwater Treatment Train

Stormwater Management Facilities

1.4 The following are Stormwater Management Facilities in the Authorized System:

SWM-1a & SWM-1b – SWM Dry Pond

Location	381 Taylor-Kidd Blvd (44.2497, -76.550249)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Outlet (550) to a tributary of Little Cataraqui Creek
Outlet location	44.249169, -76.550506
Catchment Area	20.3 ha
Level of Treatment for suspended solids	Unknown, Other Treatment Level.
Treatment for other Contaminants, as required	N/A
Level of Volume control	Daily precipitation volume of 25 mm
Design Storm	100-yr storm
Reference ECA(s)	9358-6D8LJ8
Reference Sewage Works as part of treatment train	N/A
Brief Description	<p>SWM-23 is a detention pond which discharges flows to a ditch leading to SWM 1a. SWM-1a is a siltation control cell which discharges flows to SWM-1b a detention cell.</p> <p>SWM-1a is a siltation control cell</p> <ul style="list-style-type: none"> • One outlet, 375 mm pipe • Quality control cell

	<p>SWM-1b is a detention cell</p> <ul style="list-style-type: none"> • One outlet, 1200 mm pipe • Quantity cell <p>Emergency flow route: Ditch along CN Railway ditch southernly towards the wetland to a tributary of Little Cataraqui Creek</p>
Receive Emergency Sanitary Overflows	No
Notes	SWM-1a and SWM-1b are referenced as Pond 2 in the ECA approval document. SWM-23 is referenced as Pond 1 in the ECA document.

SWM-2 – OGS unit to SWM Dry Pond

Location	3285 Princess Street (44.2633366, -76.6089005)
Watershed/Subwatershed	Lake Ontario, Collins Creek
Receiver of discharge	Outlet (262) to a tributary of Collins Creek
Outlet location	44.263489, -76.609248
Catchment Area	Total – 2.57 ha Quality, OGS unit – 2.13 ha Quantity, Dry Pond – 2.57 ha
Level of Treatment for suspended solids	Level 2, Normal
Treatment for other contaminants, as required	Annual maintenance and cleanout of the OGS at least once a year or once the sediment depth in the OGS reaches 350 mm
Level of Volume control	Unknown
Design Storm	2-year to the 100-year storm
Reference ECA(s)	2873-74EJK8
Reference Works as part of treatment train	One OGS unit, Stormceptor model STC 2000 or equal, discharging to the dry pond.
Brief Description of each component of treatment train: OGS	<ul style="list-style-type: none"> • Stormceptor model STC 2000 or approved equivalent • Receives runoff generated Westgate CT and Fox Run PL and discharges to the SWM wet pond described below.
Brief Description of each component of treatment train: SWM Dry Pond	<p>Dry pond</p> <p>Inlet area collects piped flow from the OGS unit and overland flow from an additional drainage area of 0.44 ha</p> <p>One outlet sump One concrete outlet control structure with one 525 mm concrete outlet pipe</p> <p>Emergency flow route: Princess Street ditch westerly towards the wetland and ultimately Collins Creek</p>
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-3a, SWM-3b & SWM-3c – SWM Wet Pond

Location	Cataraqui Woods Drive (44.269286, -76.563135)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Outlet pipe (ST-0052a,b) to a tributary of Little Cataraqui Creek
Outlet location	44.267667, -76.562124
Catchment Area	Total – 152 ha Forebay – 122 ha Two wet pond cells – 122+30 ha
Level of Treatment for suspended solids	Level 2, Normal
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	2-year to the 100-year storm
Reference ECA(s)	6461-64EMB9
Reference Works as part of treatment train	N/A
Brief Description	<p>SWM-3a is a sediment forebay which discharges flows to wet pond cell SWM-3b. SWM-3b discharges flows to wet pond cell SWM-3c.</p> <p>SWM-3a sediment forebay</p> <ul style="list-style-type: none"> • Two 600mm inlet pipes connected to two respective 600 x 1200 mm precast ditch inlets located upstream of the forebay • Two reverse sloped outlet pipes, 1400 mm, discharging to SWM-3b • One by-pass weir, 13.6 x 1.1 m, discharge flow from the sediment forebay to the wet pond cell SWM-3b <p>SWM-3b wet pond cell</p> <ul style="list-style-type: none"> • Flows enter from forebay and the northside of Cataraqui Woods Drive. • Wet cells are connected via one concrete box equalizer culvert, 1800 x 900 mm <p>SWM-3c wet pond cell</p> <ul style="list-style-type: none"> • Two reverse sloped outlet pipes, 600 mm, discharging to SWM-3b • Outflow weir, 4.0 x 1.25 m <p>Emergency flow route: southernly towards the tributary of Little Cataraqui Creek</p>
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-4 – SWM Dry Pond

Location	14 Holman Drive (44.258202, -76.388135)
Watershed/Subwatershed	St. Lawrence River, St. Lawrence Direct
Receiver of discharge	Outlet pipe (ST-0545) to a ditch along Highway 2
Outlet location	44.258444, -76.388084
Catchment Area	6 ha
Level of Treatment for suspended solids	N/A
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	25-year
Reference ECA(s)	3-0270-95-006
Reference Works as part of treatment train	N/A
Brief Description	Dry Pond <ul style="list-style-type: none"> One inlet pipe One outlet pipe, 250 mm, connected to a ditch inlet manhole, discharging to a 600 mm outlet pipe Emergency flow route: easterly through th highway 2 ditch to St. Lawrence River.
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-5 – SWM Dry Pond

Location	Muirfield Cres (44.253083, -76.561599)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Outlet (108) to tributary of Little Cataraqui Creek
Outlet location	44.254623, -76.567352
Catchment Area	17.2 ha (Storm Area ID 1221)
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
Reference Works as part of treatment train	Unknown
Brief Description	Dry pond <ul style="list-style-type: none"> Residential runoff Bexley Gate Park
Receive Emergency Sanitary Overflows	No

Notes / Additional Information	CATARAQUI VALLEY PHASE 2 (D12-071) ASSUMED
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SWM-6 – SWM Wet Pond

Location	2051 Bath Road (44.238084, -76.59266)
Watershed/Subwatershed	Lake Ontario, Lake Ontario Direct
Receiver of discharge	Outlet (256) to a tributary of Collins Bay
Outlet location	44.238522, -76.592711
Catchment Area	17.2 ha (Storm Area ID 1274)
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	3-1541-94-956*
Reference Works as part of treatment train	Unknown
Brief Description	Wet pond • Residential runoff
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-7 – SWM Hybrid Wet Pond/Wetland

Location	970 Woodhaven Drive (44.263456, -76.594013)
Watershed/Subwatershed	Lake Ontario, Highgate Creek/Lake Ontario Direct
Receiver of discharge	Outlet (303) to the West Branch of Upper Highgate Creek
Outlet location	44.26291, -76.595721
Catchment Area	161 ha
Level of Treatment for suspended solids	Normal, Level 2
Treatment for other contaminants, as required	N/A
Level of Volume control	25 mm storm event
Design Storm	2-year to the 100-year storm
Reference ECA(s)	6323-6UJPX7
Reference Works as part of treatment train	N/A
Brief Description	Hybrid Wet Pond/ Wetland • Three hydraulic outlet structures at south-west end of the main pond

	<ul style="list-style-type: none"> - One 250 mm HDPE orifice pipe with concrete headwall - One double ditch inlet with grate, connected to one 825 mm concrete pipe - One 10 m wide overflow outlet weir, crest elevation 1.5 m above permanent pool • Emergency flow route: Existing West Branch of Upper Highgate Creek
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-8 – SWM Wet Pond

Location	875 Gardiners Road (44.254067, -76.56978)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Outlet (225) to a tributary of Little Cataraqui Creek
Outlet location	44.254067, -76.568722
Catchment Area	457 ha
Level of Treatment for suspended solids	Normal, Level 2
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	All storm events up to 100-year
Reference ECA(s)	8947-634JCU
Reference Works as part of treatment train	N/A
Brief Description	<p>Sediment forebay receiving flows from Cataraqui Town Centre (CTC).</p> <p>Wet pond</p> <ul style="list-style-type: none"> • One 2.1m x 3.7m elliptical CSP inlet crossing Gardiners Road • Receives flow from the sediment forebay as well • Two 600 mm reverse sloped outlets
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-9 – SWM Dry Pond

Location	810 Edgar Street (44.252036, -76.550796)
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Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Through sewers to Outlet (55) at SWM 19
Outlet location	44.252149, -76.546317
Catchment Area	Portion of 69.2 ha (Storm Area ID 1218) with SWM-10
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	3-1802-89-906*
Reference Works as part of treatment train	Unknown
Brief Description	Dry Pond <ul style="list-style-type: none"> • Trillium Ridge Park, Waterloo Village • Mainly Residential runoff
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-10 – SWM Wet Pond

Location	281 Waterloo Drive (44.252328, -76.548842)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Through sewers to Outlet (55) at SWM 19
Outlet location	44.252149, -76.546317
Catchment Area	Portion of 69.2 ha (Storm Area ID 1218) with SWM-9
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	3-1802-89-907*
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond <ul style="list-style-type: none"> • East of Trillium Ridge Park, Waterloo Village • Mainly Residential runoff
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-11 – SWM Dry Pond

Location	90 Briceland Street
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	(44.258523, -76.484655)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Ditch north of the CN Railway and John Counter Blvd
Outlet location	44.258384, -76.484226
Catchment Area	Portion of 33.5 ha (Storm Area ID 1148)
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	3-0360-94-006*
Reference Works as part of treatment train	Unknown
Brief Description	Dry Pond • Mainly Residential runoff
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-12, SWM-13, SWM-14 – SWM Dry Pond

Location	22 Schooner Dr, 1290 & 1312 Waterside Way (44.273266, -76.452294)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Multiple Culverts SWM-13 (ST-1461, -1462, -1463, -1464, -1465), SWM-14 (ST-1218, -1219, 1220, 1221, 1222) Great Cataraqui River
Outlet location	44.273218, -76.453653 and 44.273908, -76.45281
Catchment Area	12 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Spill Prevention & Kit: Spill prevention control and countermeasure plan including a procedure for reporting spill emergencies. Immediate clean out of the stormwater facility after a spill capture. Equipment and material for the containment, cleanup, and disposal of captured contaminated materials is on hand and in good repair for immediate use.
Level of Volume control	Quality and Erosion in excess of the 25 mm storm
Design Storm	Unknown
Reference ECA(s)	1813-4ZVPSD
Reference Works as part of treatment train	N/A
Brief Description	Forebays SWM 13 and SWM 14 drain to Extended Detention Dry Pond SWM 12. Extended Detention Dry Pond

	<ul style="list-style-type: none"> • Two by-pass manhole structures • Two inlet control structures • Two deeper wet forebays (micro pool) • Dry main basin • One outlet control structure (perforated riser, 68 mm orifice plate, 600 mm outflow pipe; emergency overflow; complete with outflow conduits and overland spillways and two discharge cells for energy dissipation and flow spreading.)
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	For water quality protection and erosion protection with functions with additional benefits of peak flow attenuation.

SWM-15 – SWM Wet Pond

Location	360 Gore Road (44.26095, -76.445658)
Watershed/Subwatershed	Great Cataraqui River, Butternut Creek
Receiver of discharge	Outlet (545) to Butternut Creek
Outlet location	44.260861, -76.445058
Catchment Area	8.0 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	100-year
Reference ECA(s)	7480-592R93
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond <ul style="list-style-type: none"> • Ditch inflow • Outlet structure consisting for a 250 mm maintenance pipe, DICB with a 15 mm reverse pipe to a 450 mm outlet pipe discharging toward Butternut Creek
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-16 – SWM Wet Pond

Location	Malabar Drive (44.242918, -76.553382)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Outlet (243) to a tributary of Little Cataraqui Creek
Outlet location	44.242637, -76.552831
Catchment Area	21.2 ha (Storm Area ID 1232)
Level of Treatment for suspended solids	Unknown

Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond <ul style="list-style-type: none"> Arbour Ridge Park Residential runoff
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-17 – SWM Wet Pond

Location	655 Melrose Place (44.244326, -76.552306)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Outlet (245) to a tributary of Little Cataraqui Creek
Outlet location	44.244007, -76.55206
Catchment Area	4.3 ha
Level of Treatment for suspended solids	Normal
Treatment for other contaminants, as required	Inspection shall be completed after a significant rain event and on an annual basis.
Level of Volume control	25 mm storm event
Design Storm	All up to 100-year
Reference ECA(s)	9612-5NSSYP
Reference Works as part of treatment train	No
Brief Description	Extended Detention Wet Pond <ul style="list-style-type: none"> One sediment forebay Extended detention outflow control structure of the pond consists of a 55mm orifice installed within a 900mm perforated riser installed within a 75mm diameter clear stone jacket, a 150 mm diameter outlet pipe 2-year flow will be controlled by a 200mm orifice located at 2-year storm level
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-18a & SWM-18b – SWM Wet Pond

Location	1108 Centennial Drive (44.265194, -76.560018)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek

Receiver of discharge	Outlet (556) to a tributary of Little Cataraqui Creek
Outlet location	44.264864, -76.561267
Catchment Area	61 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	100- year storm
Reference ECA(s)	9510-5L9LAS
Reference Works as part of treatment train	N/A
Brief Description	<p>SWM-18a is a sediment forebay which discharges flows to wet pond cell SWM-18b.</p> <p>Wet Pond</p> <ul style="list-style-type: none"> One sediment forebay Outlet control structure consisting of a manhole, reverse sloped 300 mm pipe, and a 600 mm discharge pipe.
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-19 – SWM Wet Pond

Location	Taylor Kidd Blvd (44.252335, -76.545413)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Ditch north of CN Railway to Culvert (CULV-00932) to a tributary of Little Cataraqui Creek
Outlet location	44.251977, -76.545873
Catchment Area	32.1 ha (Storm Area ID 1217) and a portion of 69.2 ha (Storm Area ID 1218) with SWM-9 and SWM-10.
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
Reference Works as part of treatment train	Unknown
Brief Description	<p>Wet Pond</p> <ul style="list-style-type: none"> Residential runoff

	<ul style="list-style-type: none"> East of Waterloo Village
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-20 – SWM Wet Pond

Location	1139 Highway 15 (44.267149, -76.452291)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Ditch south of Highway 15 to Culvert (CLV-0168)
Outlet location	44.266852, -76.453083
Catchment Area	56.8 ha (Storm Area 1116)
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond <ul style="list-style-type: none"> Industrial and residential runoff North East of Greenwood Park
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-21 – SWM Wet Pond

Location	975 Hiwghway 15 (44.261997, -76.458106)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Ditch south of Highway 15 to a culvert (No ID)
Outlet location	44.261965, -76.458688
Catchment Area	32.7 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Up to 100-year
Reference ECA(s)	0932-5DDJAN
Reference Works as part of treatment train	N/A

Brief Description	<p>Wet Pond</p> <ul style="list-style-type: none"> • Sediment forebay • 250 mm maintenance pipe with a gate • value • Overflow weir • Outlet structure including 300mm reverse slope outlet pipe with shear gate, 1200mm by 1200mm ditch inlet manhole • 600 mm outlet pipe • 900 by 600mm culvert across Highway 15
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-22 – SWM Wet Pond

Location	615 Fieldstone Drive (44.265189, -76.44162)
Watershed/Subwatershed	Great Cataraqui River, Butternut Creek
Receiver of discharge	Outlet (ST-0504, ST-0508, ST-0510) to Butternut Creek
Outlet location	44.264795, -76.44172
Catchment Area	27.6 ha
Level of Treatment for suspended solids	Normal, Level 2
Treatment for other contaminants, as required	Measure sediment depths in the facility.
Level of Volume control	Unknown
Design Storm	All storm events up to and including the 100-year
Reference ECA(s)	2663-6DEKVC
Reference Works as part of treatment train	N/A
Brief Description	<p>Wet Pond</p> <ul style="list-style-type: none"> • Sediment forebay receiving stormwater from a v shaped ditch, separated from the main pond by a 5 m x 18m x 200mm rip-rap berm • Outlet structure, 1.2 x 1.2 m precast concrete ditch inlet CB: <ul style="list-style-type: none"> - One 250 mm reverse sloped outlet pipe with a gate valve to control outflow - One 250 mm maintenance pipe with gate valve - One overflow outlet weir with a grate width of 0.65 m - One 600mm outlet pipe discharging to a

	6 x 6m riprap area
	• One emergency spillway
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-23 – SWM Dry Pond

Location	793 Centennial Drive (44.246844, -76.553581)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Ditch (ST-5581) to SWM-1a
Outlet location	(44.246971, -76.553265)
Catchment Area	Unknown
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	100-year
Reference ECA(s)	9358-6D8LJ8
Reference Works as part of treatment train	N/A
Brief Description	SWM-23 is a detention pond which discharges flows to a ditch leading to SWM 1a. SWM-1a is a siltation control cell which discharges flows to SWM-1b a detention cell.
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	SWM-1a and SWM-1b are referenced as Pond 2 in the ECA approval document. SWM-23 is referenced as Pond 1 in the ECA document.

SWM-24 – SWM Wet Pond

Location	706 Kananaskis Drive (44.26994, -76.629173)
Watershed/Subwatershed	Lake Ontario, Collins Creek
Receiver of discharge	Outlet (260) to a tributary of Collins Creek
Outlet location	44.271025, -76.629026
Catchment Area	16 ha
Level of Treatment for suspended solids	Enhanced
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Up to and including 100-year
Reference ECA(s)	3125-6L7K9B
Reference Works as part of treatment train	N/A
Brief Description	Extended Detention Wet Pond

	<ul style="list-style-type: none"> • 1 Inlet into Forebay, 900mm Pipe • 1 Outlet from Pond, 675mm Pipe • Discharges to Glenvale Creek • Services Westbrook Meadows
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-25 – SWM Wet Pond

Location	Coverdale Drive (44.23793, -76.594265)
Watershed/Subwatershed	Lake Ontario, Lake Ontario Direct
Receiver of discharge	Outlet (255) to Collins Bay
Outlet location	44.238093, -76.593991
Catchment Area	24.1 ha (Storm Area 1273)
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond <ul style="list-style-type: none"> • West Park • Residential runoff
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-26 – SWM Dry Pond

Location	1159 Coverdale Drive (44.237899, -76.600422)
Watershed/Subwatershed	Lake Ontario, Lake Ontario Direct
Receiver of discharge	Outlet (37) to a tributary of Collins Bay
Outlet location	44.238316, -76.599904
Catchment Area	16.9 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Greater than the peak flow from 25 mm rainfall
Reference ECA(s)	3-0162-92-006

Reference Works as part of treatment train	N/A
Brief Description	Sedimentation Pond <ul style="list-style-type: none"> • Quality control sedimentation pond • One Inlet structure • One diversion pipe • One outlet structure
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-27 – SWM Wet Pond

Location	1059 Centennial Drive (44.263413, -76.561321)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	N/A
Outlet location	N/A
Catchment Area	50.0 ha (Storm Area 1350)
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	3-0435-99-006*
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond <ul style="list-style-type: none"> • Mainly residential runoff
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-28 – SWM Wet Pond

Location	1098 Woodbine Road (44.258657, -76.598969)
Watershed/Subwatershed	Lake Ontario, Highgate Creek/Lake Ontario Direct
Receiver of discharge	Culvert (CLV-0102) to Highgate Creek
Outlet location	44.25836, -76.59917
Catchment Area	Unknown
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown

Reference ECA(s)	3-0612-99-006*
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond • Westwoods Pond
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-29 – SWM Wet Pond

Location	1280 Leyton Avenue (44.272326, -76.620306)
Watershed/Subwatershed	Lake Ontario, Collins Creek
Receiver of discharge	Outlet (258) to a tributary of Collins Creek
Outlet location	44.271714, -76.619986
Catchment Area	4.9 ha
Level of Treatment for suspended solids	Normal, Level 2
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	5 to 100-year
Reference ECA(s)	9378-6MWQBR
Reference Works as part of treatment train	N/A
Brief Description	Wet Pond • One sediment forebay - One 1 x 4 m rip rap protected inlet area - Separating berm - 1 m outlet weir with rip rap • 300 mm clay liner • Outlet structure - 0.6 x 1.2 m DICB connected to a 75 mm diameter reverse sloped orifice pipe
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-30 – SWM Wet Pond

Location	1510 Robinson Court (44.282193, -76.569313)
Watershed/Subwatershed	Lake Ontario, Collins Creek
Receiver of discharge	Outlet (264) to a tributary of Collins Creek
Outlet location	44.282543, -76.569366
Catchment Area	12.2 ha
Level of Treatment for suspended solids	Normal, Level 2

Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	2 to 100-year
Reference ECA(s)	0288-74EJKL
Reference Works as part of treatment train	N/A
Brief Description	<p>Wet Pond</p> <ul style="list-style-type: none"> • 1 Inlet into Forebay, 900mm Pipe • 1 Outlet with orifice plate from Pond, 300mm Pipe • Services Robinson Business Park • 6m wide emergency spillway on North side of pond
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-31 – SWM Dry Pond

Location	840 Ironwood Road (44.287288, -76.402563)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Drainage Easement
Outlet location	Unknown
Catchment Area	3.3 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	5 to 100-year
Reference ECA(s)	5898-6EVLWP
Reference Works as part of treatment train	N/A
Brief Description	<p>Dry Pond</p> <ul style="list-style-type: none"> • 300 mm thick compacted clay liner • 1m x6.5 m long rip rap protected area at inlet • One 450 mm HDPE pond outlet with cap and 305 mm drilled orifice. • Outlet structure double inlet CB connected to the 450 mm HDPE outlet pipe from the pond and having a 0.6 m wide inlet weir with outlet to an existing drainage easement via 525 mm HDPE
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	Described as South Pond in the ECA document.

SWM-32 – SWM Dry Pond

Location	994 Ironwood Road (44.293724, -76.402353)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Ditch along Middle Road
Outlet location	Unknown
Catchment Area	9.02 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	5 to 100-year
Reference ECA(s)	5898-6EVLWP
Reference Works as part of treatment train	N/A
Brief Description	<p>Dry Pond</p> <ul style="list-style-type: none"> • 300 mm thick compacted clay liner • 450 mm CSP inlet culvert leading to 1 x 6.5 m riprap protected area at the pond inlet • 450 mm HDPE pond outlet with cap and 390 mm drilled orifice • Outlet structure DICB connected to the 450 mm HSPE outlet and having a 1.2 m wide inlet weir with outlet to the Middle Road ditch via one 675 mm HDPE pipe ending at a 1 x 4 m long rip rap protected area
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	Described as North Pond in the ECA document.

SWM-33 - Two OGS units to SWM Hybrid Wet Pond/Wetland

Location	1211 John Counter Blvd (44.262874, -76.506338)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Culvert (CULV-00611) to a tributary of Little Cataraqui Creek
Outlet location	44.26307, -76.507524
Catchment Area	84 ha
Level of Treatment for suspended solids	Normal, Level 2
Treatment for other contaminants, as required	Monthly inspections and sampling six times per year.
Level of Volume control	Unknown
Design Storm	Up to and including the 100-year return storm
Reference ECA(s)	0660-8W4HJN
Reference Works as part of	Two OGS units to SWM Hybrid Wet Pond/Wetland

treatment train	
Brief Description of each component of treatment train: OGS	<p>OGS-M: Stormceptor Model STC300 or equivalent approved)</p> <ul style="list-style-type: none"> one (1) manhole type oil/grit separator located at the north-east corner of the parking lot, rated at 39.3L/s flow without by-passing, having a sediment storage capacity of 1.45cu.m., oil storage capacity of 300L and a total volume of 1.775cu.m., discharging via a 250mm diameter storm sewer to the wetpond via 1350mm diameter storm sewer <p>OGS -U: Stormceptor Model STC750 or equivalent approved)</p> <ul style="list-style-type: none"> one (1) manhole type oil/grit separator located at the north-west corner of the parking lot, rated at 333.6L/s flow without by-passing, having a sediment storage capacity of 3.0cu.m., oil storage capacity of 915L and a total volume of 4.070cu.m., to discharge stormwater effluent into a 525mm diameter pipe and to the wetpond via 1350mm diameter storm sewer
Brief Description of each component of treatment train: SWM Hybrid Wet Pond/Wetland	<p>Hybrid Wetland:</p> <ul style="list-style-type: none"> an existing wet pond with a 1350mm pipe and a 750mm diameter culvert inlet to retrofit with selective vegetation plantings <p>Inlet and forebay:</p> <ul style="list-style-type: none"> a new 100m long by approximately 10m wide low flow inlet channel leading to forebay having an approximate surface area of 3,100m² one (1) 1350mm and one open channel inlet from a 750mm diameter culvert. <p>Outlet Control:</p> <ul style="list-style-type: none"> facility outlet consists of a 2.4m wide 3.8m structure equipped with a 230mm diameter vertical orifice plate fixed into a drilled hole at the inlet wall at the permanent water elevation and have a stepped inlet weir set at an elevation of 0.45m above the permanent pool elevation or at the extended detention level to discharge wet pond effluent via 2 (two) 900mm diameter outfall pipes, ultimately draining into the Alcan tributary of the Little Cataraqui Creek; <p>Emergency Outlet:</p> <ul style="list-style-type: none"> two (2) existing 900mm diameter outfall pipes having obvert elevation at 84.17 along with a provision on the CN Rail Spur to act as a spillway, to discharge storm water into Alcan tributary of the Little Cataraqui Creek; including erosion/sedimentation control measures during construction and all other controls and appurtenances essential for the proper operation of the aforementioned
Receive Emergency Sanitary Overflows	No

Notes / Additional Information	N/A
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SWM-34 – SWM Hybrid Wet Pond/Wetland

Location	1385 Cataraqui Woods Drive (44.265171, -76.60475)
Watershed/Subwatershed	Lake Ontario, Collins Creek
Receiver of discharge	Outlet (ST-4079) to tributary of Collins Creek
Outlet location	44.265272, -76.605259
Catchment Area	61.6 ha
Level of Treatment for suspended solids	Enhanced, Level 3
Treatment for other contaminants, as required	Two wet rainfall samples per year, between May and September (minimum 2 years).
Level of Volume control	Unknown
Design Storm	All storm events up to and including the 100-year storm event
Reference ECA(s)	8551-8VQKNF
Reference Works as part of treatment train	N/A
Brief Description	<p>Hybrid Wet Pond/Wetland: a hybrid stormwater management facility with a sediment forebay and a native clay liner under the forebay and under the main wet pond:</p> <ul style="list-style-type: none"> • one (1) 1200 mm diameter inlet pipe with stone headwall and erosion protection, discharging to the sediment forebay, • one (1) 250 mm diameter maintenance pipe from the sediment forebay, together with a 150 mm diameter perforated inlet riser pipe installed in a crushed stone jacket and a 250 mm diameter maintenance valve and chamber, discharging to the main wet pond, • one (1) 250 mm diameter maintenance pipe and 250 mm diameter gate valve from the main wet pond to existing control outlet #2, identified below, • one (1) 750 mm diameter inlet pipe, discharging to the main wet pond, • one (1) existing 600 mm by 600 mm ditch inlet control manhole #1 with an inlet grate, an existing 250 mm diameter outlet pipe and a 100 mm diameter outlet orifice, discharging to existing control manhole #2, identified below, • one (1) 2400 by 2400 ditch inlet control manhole #2 with an inlet grate, an existing 250 mm diameter inlet pipe from existing control manhole #1, identified above, an existing 1800 mm diameter outlet pipe with a 480 mm diameter outlet orifice and riprap protected outfall to Collins Creek, • one (1) riprap protected overflow spillway from the main wet pond, across Cataraqui Woods Drive to Collins Creek,
Receive Emergency	No

Sanitary Overflows	
Notes / Additional Information	N/A

SWM-35 – SWM Wet Pond

Location	1330 Waterside Way (44.274849, -76.451352)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Outlet (ST-5223) Tributary of Great Cataraqui River
Outlet location	44.275083, -76.451343
Catchment Area	14.3 ha
Level of Treatment for suspended solids	Enhanced, Level 3
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	8524-8JWQYH
Reference Works as part of treatment train	N/A
Brief Description	<p>Wet Pond</p> <ul style="list-style-type: none"> • One 900mm inlet pipe discharging into the sediment forebay with forebay berm • One 150 mm reverse slope outlet pipe from the bottom of the pond to a 1200 x 1200mm precast concrete DIMH • One 250 mm from pond to 1200 x 1200mm precast concrete DIMH fitted with a 250 mm diameter control gate valve • One 450 mm outlet discharging to an existing channel via a rock check dam channel • One 15 x 0.2 m deep emergency overflow weir
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-36 - OGS unit to Ditch to SWM Hybrid Wet Pond/Wetland

Location	3 Terry Fox Drive (44.265176, -76.515366)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Existing Outfall NE1 to a ditch to a tributary of Little Cataraqui Creek
Outlet location	Little Cataraqui Creek;
Catchment Area	4.6 ha
Level of Treatment for suspended solids	Level 3, Enhanced
Treatment for other contaminants, as required	N/A

Level of Volume control	Unknown
Design Storm	All storm events up to 100-year
Reference ECA(s)	1233-8MQH8D
Reference Works as part of treatment train	OGS unit to Ditch to SWM Hybrid Wet Pond/Wetland
Brief Description of each component of treatment train: OGS	OGS model CDS 3030
Brief Description of each component of treatment train: SWM Hybrid Wet Pond	Hybrid Wet Pond <ul style="list-style-type: none"> • One sediment forebay • One main cell - Inlet riprap route connected to an inlet ditch - Quality control outlet structure comprising a DICB - 100mm orifice at outlet pipe - Emergency overflow weir
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-38 – SWM Wet Pond

Location	Invista Centre (44.27424, -76.567137)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Unknown
Outlet location	Unknown
Catchment Area	Unknown
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
Reference Works as part of treatment train	Unknown
Brief Description	Wet Pond <ul style="list-style-type: none"> • Drainage from the Invista Centre
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-41 – SWM Wet Pond

Location	1593 John Counter Blvd, (JCB Ph 3 near Portsmouth) (44.259424, -76.527173)
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Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Outlet (317 and 318) to wetland to a tributary of Little Cataraqui Creek
Outlet location	44.259393, -76.527675
Catchment Area	5.1 ha
Level of Treatment for suspended solids	Enhanced, Level
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Up to and including the 100-year
Reference ECA(s)	4908-AGFM5R
Reference Works as part of treatment train	N/A
Brief Description	<p>Wet pond</p> <ul style="list-style-type: none"> • sediment forebay • Receiving inflows from on John Counter Boulevard from Sir John MacDonald Boulevard to 100 m west of Indian Road, • Discharging via a 1500 mm diameter a perforated riser outlet pipe through control manhole equipped with orifice control thus providing the required 24-hour drawdown time and ultimately via a 600 mm diameter outfall pipe discharging to an existing wetland and Little Cataraqui Creek;
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-P02 – SWM Wet Pond

Location	Gardiners (44.242343, -76.563745)
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Tributary of Little Cataraqui Creek
Outlet location	Unknown
Catchment Area	~100 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.
Reference Works as part of treatment train	Appears to receive discharge from SWM-45 and SWM-P03
Brief Description	<p>Wet Pond</p> <ul style="list-style-type: none"> • 3 Inlets receiving discharge from the existing storm sewers on RioCan property, north to

	<ul style="list-style-type: none"> Taylor Kidd Blvd and south to Bath Road. Outlet location unknown, ultimately discharges to a tributary of Little Cataraqui Creek
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

SWM-P12 – SWM Wet Pond

Location	701 Division St. (44.250052, -76.492054)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Discharge northward onto the rip rap channel with check dams to a tributary of the Great Cataraqui River
Outlet location	Unknown
Catchment Area	4.64 ha
Level of Treatment for suspended solids	Enhanced
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Up to and including the 100-year
Reference ECA(s)	4872-B9KT9E
Reference Works as part of treatment train	N/A
Brief Description	<p>Wet Pond</p> <ul style="list-style-type: none"> Bentonite slurry lined pond Sediment forebay One 825mm diameter storm sewer pipe and a rip rap channel inlet into a forebay, Discharge via a flow control CB located on the pond bank: <ul style="list-style-type: none"> 600mmX1200mm ditch inlet manhole 150mm diameter positive slope inlet pipe 100mm diameter vertical orifice 450mm diameter outlet pipe 250mm diameter vertical orifice 450mm diameter outlet pipe 450mm diameter pipe joined with a 1050mm diameter storm sewer 1050mm diameter outfall sewer onto rip rap channel with enhanced vegetated swales and check dams 4.5m wide 300mm deep overflow spillway located on the north-east bank of the pond, to discharge northward onto the rip rap channel with check

	dams;
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	LANDS OWNED BY CITY (FC324911).

No ID – Enhanced Grass Swales (EGS) to EGS to OGS Unit to SWM Dry Pond

Location	Third Crossing Bridge (East Shore)
Watershed/Subwatershed	St. Lawrence River, St. Lawrence Direct
Receiver of discharge	The Great Cataraqui River
Outlet location	Unknown
Catchment Area	Total – 24.2 ha Enhanced Grass Swale (EGS) – 0.33 ha EGS – 24.2 ha OGS– 5.2 ha
Level of Treatment for suspended solids	Enhanced
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	100 -year storm
Reference ECA(s)	1224-BWRS9F
Reference Works as part of treatment train	EGS to EGS to OGS Unit to SWM Dry Pond: EGS (Ditch 3, D3) to EGS (Ditch 1, D100) to OGS receiving inflow from storm sewers and ditches along Gore Road, discharging via a 900 millimetre diameter outlet pipe to a new dry pond facility to the Great Cataraqui River;
Brief Description of each component of treatment train: EGS	enhanced grassed swale (catchment area 0.33 hectares), known as Ditch 3 (D3) located along the south side of Library Road, having a total length of 49 metres, a bottom width of 2 metres, side slopes of 3:1, a maximum depth of 0.5 metres, a maximum flow depth of 0.32 metres (100-year storm event) and a maximum available storage volume of 44.6 cubic metres, allowing a maximum discharge of 132 litres per second under the 100-year storm event to the receiving 450 millimetre culvert crossing Library Road;
Brief Description of each component of treatment train: EGS	enhanced grassed swale (catchment area 24.2 hectares), known as Ditch 1 (D100), located immediately south of the proposed dry pond, having a total length of 23.9 metres, a bottom width of 2 metres, side slopes of 3:1 a maximum depth of 1 metre, a maximum flow depth of 0.62 metres (100-year storm event) and a maximum available storage volume of 119.4 cubic metres, allowing a maximum discharge of 1357 litres per second under the 100-year storm event to the oil and grit separator, indicated below;
Brief Description of each component of treatment train: OGS	oil and grit separator (catchment area 5.2 hectares): one (1) oil and grit separator, HydroStorm HS-8 or Equivalent Equipment, located approximately 50 metres west of the intersection of Gore Road and Library Road, and approximately 35 metres north of Gore Road, providing

	Enhanced Level of protection, having a sediment storage capacity of 6.3 cubic metres, an oil storage capacity of 2,328 cubic metres, a total storage volume of approximately 10 cubic metres, and a maximum treatment rate of 1,500 litres per second, receiving inflow from storm sewers and ditches along Gore Road, discharging via a 900 millimetre diameter outlet pipe to a new dry pond facility indicated below;
Brief Description of each component of treatment train: Dry Pond	stormwater management facility (catchment area 24.2 hectares): one (1) dry pond, located 60 metres west of Point St. Mark Dr and 65 metres North of Gore Road, having a maximum available storage volume of 812 cubic metres and a maximum depth of 1.5 metres, complete with one (1) inlet structure, consisting of a 900 millimetre diameter storm sewer, one (1) 10 metre wide emergency riprap-lined spillway, and a 250 millimetre low-flow pipe equipped with an 100 millimetre orifice, a twin ditch inlet catchbasin and 300 millimetre outlet culvert control pipe, and a 750 millimetre diameter storm outlet pipe, allowing a maximum discharge of 1.251 cubic metres per second under the 100-year storm event to the Great Cataraqui River;
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	LID

No ID – Grassed Swale to OGS unit to SWM X Pond

Location	3 Terry Fox Drive
Watershed/Subwatershed	Lake Ontario, Little Cataraqui Creek
Receiver of discharge	Existing municipal ditch along the west property line
Outlet location	Unknown
Catchment Area	0.32 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	100-year
Reference ECA(s)	6359-BRGJMU
Reference Works as part of treatment train	Grassed Swale to OGS unit to SWM X Pond
Brief Description of each component of treatment train: Grassed Swale	one (1) grassed swale, accepting stormwater runoff from a mixed-use building a-roof and parking lot with a total catchment area of 0.32 hectare, discharging to an oil/grit separator;
Brief Description of each component of treatment train: OGS	one (1) oil/grit separator (model PMSU 2015-4-C) discharging, via existing culverts and swale, into a stormwater management dry pond;
Brief Description of each	one (1) stormwater management dry pond, accepting runoff

component of treatment train: Dry Pond	from the aforementioned oil/grit separator and other existing drainage areas (a gravel pole yard, asphalt and gravel roads, grass ditches and grass landscaping) with a total catchment area of 5.35 hectares, discharging via two (2) 400 millimetre diameter pipes into the existing municipal ditch along west property;
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	Other existing on-site works include SWM-36

No ID – SWM Wet Pond

Location	Cataraqui West Subdivision
Watershed/Subwatershed	Lake Ontario, Collins Creek
Receiver of discharge	Collins Creek Via Cataraqui Woods Drive,
Outlet location	Unknown
Catchment Area	57.8ha
Level of Treatment for suspended solids	Enhanced
Treatment for other contaminants, as required	<ul style="list-style-type: none"> one (1) grab sample of the water from the Pond Outlet shall be collected within six (6) hours following commencement of a storm event with at least one sample per season and with a minimum of five samples during summer months and analyzed for the following parameters: Temperature, Total Suspended Solids, Total Ammonia Nitrogen, pH and Oil and Grease. The temperature and pH of the effluent from the Works shall be determined in the field at the time of sampling for Total Ammonia Nitrogen. The concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended, for ammonia (un-ionized).
Level of Volume control	Unknown
Design Storm	5 to 100-year
Reference ECA(s)	2831-7VYQZP
Reference Works as part of treatment train	N/A
Brief Description:	<p>Wet Pond:</p> <ul style="list-style-type: none"> Temporary inlet ditch with 1.0m bottom width Discharge stormwater into an existing Collins Creek via the outlet control structure as follows: <ul style="list-style-type: none"> a 600mm by 600mm ditch inlet control encased in clear stone surround to discharge water into a 2.4m by 2.4m ditch inlet Control Manhole via a 250mm diameter outlet pipe with a 90mm diameter vertical orifice to discharge via a 1800mm diameter grated outfall

	pipe onto a rockfill check dam in the Creek bed, - a 3.0m wide rip rap lined trapezoidal overflow spillway /weir located on the pond embankment to discharge pond water into the Creek Via Cataraqui Woods Drive,
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

Ditch to OGS unit

Location	Third Crossing Bridge (West Shore at John Counter Boulevard) (44.257642, -76.47928)
Watershed/Subwatershed	St. Lawrence River, St. Lawrence Direct
Receiver of discharge	The proposed ditch adjacent to West Bank to St. Lawrence River
Outlet location	44.257642, -76.479281
Catchment Area	OGS – 3.4 ha
Level of Treatment for suspended solids	Enhanced
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	9160-BQ3LPX
Reference Works as part of treatment train	Ditch to OGS unit
Brief Description of each component of treatment train: Ditch	roadside ditches on John Counter Boulevard (from approximately 100 metres east of Montreal Street to approximately 260 metres east of Montreal Street), discharging to a new oil-girt separator, located approximately 260 metres east of Montreal Street and approximately 35 metres north of John Counter Boulevard;
Brief Description of each component of treatment train: OGS	oil and grit separator, HS8 or Equivalent Equipment, located approximately 23 metres north of John Counter Boulevard, providing Enhanced Level of protection, having a sediment storage capacity of 6.3 cubic metres, an oil storage capacity of 2,328 litres, a total storage volume of approximately 10 cubic metres, and a maximum treatment rate of 110 litres per second, receiving inflow from the storm sewer located on John Counter Boulevard, discharging via a 450 millimetre diameter outlet pipe equipped with an overflow/control weir to the proposed ditch adjacent to West Bank;
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

Dry Grass Swales to Existing Dry Channel (stormwater management facility, SWMF)
Bioswale to SWMF
OGS unit to SWMF

Location	MacCauley Street (Shannon Park)
Watershed/Subwatershed	Great Cataraqui River, Great Cataraqui River
Receiver of discharge	Existing municipal storm sewer
Outlet location	Unknown
Catchment Area	Total – 24.36 ha
Level of Treatment for suspended solids	Unknown
Treatment for other contaminants, as required	N/a
Level of Volume control	Unknown
Design Storm	100-year
Reference ECA(s)	9869-APMPWB
Reference Works as part of treatment train	Dry Grass Swales to Existing Dry Channel (stormwater management facility, SWMF) Bioswale to SWMF OGS unit to SWMF
Brief Description of each component of treatment train: OGS	Oil/grit separator [catchment area 0.26 hectares]: - one (1) oil and grit separator (Aqua-Swirl Stormwater Treatment System Model AS-3 or Equivalent), located on the south-east side of the MacCauley Street extension, having a sediment capacity of 600 litres, an oil capacity of 416 litres, a total holding capacity of 1,016 litres and a maximum treatment flow rate of 52 litres per second, discharging through a 450 millimetre outlet pipe into the stormwater management facility identified below;
Brief Description of each component of treatment train: Dry Grass Swales	Dry grassed swales (catchment area – 0.53 hectares): - two (2) dry grassed swales located on the north-west and south-west portion of the MacCauley Street extension with a 0.75 metre bottom width, approximately 30 meters and 52 meters in length, having a maximum depth of 0.6 meters and a 3:1 side slope, discharging to the stormwater management facility
Brief Description of each component of treatment train: Bioswale	Bioswale (catchment area - 0.28 hectares): - one (1) bioswale located on the south-west portion of MacCauley Street extension with a 0.75 metre bottom width lined with non-woody and salt tolerant grasses, approximately 76 meters in length, having a maximum depth of 0.6 meters and a 3:1 side slope, complete with rip-rap check dams. Swale bottom constructed of shredded hardwood bark, over engineered soil, over pea gravel, over 200 mm diameter sub-drain embedded in clear stone gravel, discharging to the stormwater management facility
Brief Description of each component of treatment train: Dry Channel	Stormwater management facility (catchment area 24.36 ha, imperviousness 43 %): - one (1) existing dry channel, located at the west side within Shannon Park, receiving runoff through a 1050 mm diameter storm sewer, modified to provide an active storage volume of approximately 8919

	cubic meters for the 100-year storm event, discharging through a 1050 mm diameter outlet pipe with 420 mm orifice plate at a maximum allowable outlet rate of 500 L/s into the existing municipal storm sewer.
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	LID

Two OGS units

Location	370 King Street West
Watershed/Subwatershed	Lake Ontario
Receiver of discharge	Discharging to existing sewers;
Outlet location	Unknown
Catchment Area	4.13 ha
Level of Treatment for suspended solids	Normal
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	2675-95QGN6
Reference Works as part of treatment train	N/A
Brief Description of each component of treatment train: OGS	one (1) oil/grit interceptor (OGS1) , model CDS PMSU30_25, servicing a drainage area of 4.13hectares, providing normal level of protection (long term average total suspended solids removal of77.4%), discharging to existing sewers; one (1) oil/grit interceptor (OGS7) , model CDS PMSU20_15, servicing a drainage area of 0.11hectares, providing normal level of protection (long term average total suspended solids removal of 77.4%), discharging to existing sewers;
Brief Description of each component of treatment train:	N/A
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

Two OGS units

Location	John Counter Boulevard
Watershed/Subwatershed	Little Cataraqui Creek
Receiver of discharge	Discharging to existing sewers;
Outlet location	Unknown
Catchment Area	3.4 ha
Level of Treatment for suspended solids	Enhanced

Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	6003-8YYJG8
Reference Works as part of treatment train	N/A
Brief Description of each component of treatment train: OGS	<p>one (1) oil/grit interceptor, model STC2000 located on the south side of the site servicing approximately a 1.0 ha area, providing an enhanced level of protection at a rated treatment capacity of 30 L/s (long term average total suspended solids removal of 80%), having a sediment capacity of 7700 litres, an oil capacity of 2890 litres, a total holding capacity of 11000 litres, discharging to proposed 375 mm storm sewer.</p> <p>one (1) oil/grit interceptor, model STC6000 located on the north side of the site servicing approximately a 2.4 ha area, providing an enhanced level of protection at a rated treatment capacity of 50 L/s (long term average total suspended solids removal of 80%), having a sediment capacity of 26945 litres, an oil capacity of 3930 litres, a total holding capacity of 31285 litres, discharging to 525 mm storm sewer.</p>
Brief Description of each component of treatment train:	N/A
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

OGS Unit

Location	Bath Road Lots 13, 14, 15 and 16, Concessions 1 and 2
Watershed/Subwatershed	Little Cataraqui Creek
Receiver of discharge	Little Cataraqui Creek
Outlet location	Unknown
Catchment Area	2.5 ha,
Level of Treatment for suspended solids	Enhanced Level
Treatment for other contaminants, as required	N/A
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	8230-8SDMNS
Reference Works as part of treatment train	N/A
Brief Description of each component of treatment train:	OGS discharging via 900 mm storm sewers (described above) and an 8 m long, 4 m wide and 0.3 m deep rip rap pad to Little Cataraqui Creek;

OGS	
Brief Description of each component of treatment train:	N/A
Receive Emergency Sanitary Overflows	No
Notes / Additional Information	N/A

Alwington Avenue Bioswale Gardens– Bioswales

Location	2 Alwington Avenue (44.221495, -76.510926)
Watershed/Subwatershed	Lake Ontario
Receiver of discharge	Outlet (176) to Lake Ontario
Outlet location	44.220329, -76.505513
Catchment Area	~0.79 ha
Level of Treatment for suspended solids	Unknown, Other Treatment Level
Treatment for other Contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details
Reference Sewage Works as part of treatment train	N/A
Brief Description	Alwington Avenue Bioswales are located on the east and west corners of Alwington Avenue and King Street in Kingston, Ontario. Bump outs with water intakes were added to the north and south ends of Alwington Avenue to calm traffic and reduce speeding by non-residents, the road was resurfaced and new sidewalks installed. The bump outs, ranging in width from five to twelve feet created the bioswale zones.
Receive Emergency Sanitary Overflows	No
Notes	Within the City Owned Right of Way

Princess Street Trees Planters – Silva Cells

Location	11 PRINCESS ST 10 PRINCESS STREET (255 ONTARIO ST) 27 PRINCESS ST 34 PRINCESS ST 35 PRINCESS ST
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	53 PRINCESS ST 50 PRINCESS ST 65 PRINCESS ST 77 PRINCESS ST 94 PRINCESS ST 101 PRINCESS ST 120 PRINCESS ST 145 PRINCESS ST 136 PRINCESS ST 156 PRINCESS ST 198 PRINCESS ST 241 PRINCESS ST 179 SYDENHAM ST 178 SYDENHAM ST 312 PRINCESS ST 336 PRINCESS ST 353 PRINCESS ST 371 PRINCESS ST (310 Barrie) 390 PRINCESS ST 403 PRINCESS ST 401 PRINCESS ST
Watershed/Subwatershed	Lake Ontario
Receiver of discharge	Outlet 193 to Lake Ontario
Outlet location	44.230842, -76.477614
Catchment Area	Varies
Level of Treatment for suspended solids	Unknown, Other Treatment Level
Treatment for other Contaminants, as required	Unknown
Level of Volume control	Unknown
Design Storm	Unknown
Reference ECA(s)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details
Reference Sewage Works as part of treatment train	N/A
Brief Description	Twenty-six (26) embedded sidewalk tree planters with Silva Cells. Silva Cells are modular suspended pavement systems that uses soil volumes to support large tree growth and provide on-site stormwater management through absorption, evapotranspiration, and interception.
Receive Emergency Sanitary Overflows	N/A
Notes	Within the City Owned Right of Way

Stormwater Pumping Stations

- 1.5 The following are identified Stormwater pumping stations in the Authorized System:

[N/A]

Asset ID and Name	N/A
Site Location	
Watershed/Subwatershed	
Latitude and Longitude	
Coordinates (optional)	
Description	
Pumping Station Capacity	
Equipment	
Emergency Storage	
Equipment: Associated controls and Appurtenances	
Overflow	
Standby Power	
Notes	

Third Pipe Collection System

- 1.6 The following are identified third pipe systems in the Authorized System.

[N/A]

Asset ID and Name	N/A
Location	
Watershed/Subwatershed	
Receiver of discharge	
Outlet location	
Catchment Area	
Treatment, if applicable	
Reference ECA(s), if applicable	
Brief Description	
Notes	

Other Works:

- 1.7 The following works are part of Authorized System:

Table B6: Other Works

Column 1 Asset ID / Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Component	Column 4 Description
N/A			

Developer-Operated Facilities:

- 1.8 The following facilities are part of the Authorized System, have been constructed, and are being operated by the developer under the authority of an agreement entered into with the Owner of the system.

Table B7: Developer-Operated Facilities			
Asset ID	Type of Facility	Location	Developer Name
N/A			

- 1.9 The Owner shall notify the Director, using the Director Notification Form, within thirty (30) days where the operation of any Facility identified in Table B7 has been:
- 1.9.1 Incorporated into the overall Stormwater Management System and assumed by an Operating Authority identified in Schedule B of this Approval.
- 1.9.2 Has been transferred from the developer identified in Table B7 to another party.

Transitional – Facilities with Individual ECAs

- 1.10 The following Facilities are connected to the Authorized System, but ownership has not been assumed by the Owner. These Sewage Works are not part of the Authorized System and will continue to have separate ECAs until the Facilities are assumed by the Owner.

Table B8: Facilities with Individual ECAs				
Asset ID	Type of Facility	Location	ECA Number	Developer Name
SWM-P03	SWM Wet Pond	690 Gardiners Rd. (44.246695, - 76.565247)	7497-68BRMA	Trinity Properties (Kingston) Inc.
SWM-4	SWM Dry Pond	14 Holman Drive (44.258202, - 76.388135)	3-0270-95-006	Robert John Sweezey
SWM-	SWM	975 Highway	0932-	Greenwood Park Limited

Table B8: Facilities with Individual ECAs				
Asset ID	Type of Facility	Location	ECA Number	Developer Name
21	Wet Pond	15 (44.261997, - 76.458106)	5DDJAN	
SWM-37a & SWM-37b	SWM Pond Type Unknown	Purdy Mills Road (44.262665, - 76.535632)	No associated ECA, see 01 - List of Sewage Works & Environmental Compliance Approvals for more details.	HOMESTEAD LAND HOLDINGS LTD
SWM-39	SWM Wet Pond	Stonewalk Drive & Riverview Way (Riverview Subdivision) (44.269439, - 76.456626)	1979-A2CQXL (Superseded ECA) 3784-AMAGW7	Tamarack (Rideau) Corporation
SWM-40a & SWM-40b	SWM Wet Pond	West of Centennial Drive (44.266455, - 76.560782)	2777-AFQKZP	2454433 Ontario Ltd.
SWM-42	SWM Wet Pond	112 Cataraqui Woods Dr (Lyndenwood Ph5 Hydro Corridor) (44.270322, - 76.546732)	4456-AJ5PY8	CaracCo Development Corporation
SWM-43	SWM Wet Pond	3566 Princess St (Baycreek Meadows) (44.267947, - 76.62916)	4342-AR4PTJ	Baycreek Development Inc.
SWM-44	SWM Wet Pond	Brookedayle Avenue (Creekside Valley-Ph A)	3063-AX8J4E	Creekside Valley Developments Ltd.

Table B8: Facilities with Individual ECAs				
Asset ID	Type of Facility	Location	ECA Number	Developer Name
		(44.267278, - 76.616693)		
SWM-45	SWM Wet Pond	Barrow Ave (West Village Phase 3) (44.243267, - 76.560271)	2813-BRTRDD	Taggart (Gardiners) Corporation
Unknown	OGS unit to Swale to Ditch	Bayridge Drive (Midland Park Residential Phase 4)	7333-9XBNTU	1517849 Ontario Limited
Unknown	Outfall	Stonewalk Drive & Riverview Way (Riverview Subdivision) (44.269439, - 76.456626)	1979-A2CQXL (Superseded ECA) 3784-AMAGW7	Tamarack (Rideau) Corporation

- 1.11 The Owner shall notify the Director, using the Director Notification Form, within thirty (30) days where the ownership of any Facility identified in Table B8 has been assumed by the Owner.
- 1.12 The Director Notification required in condition 1.11 shall include:
- 1.12.1 A request from the developer to revoke the ECA identified in Table B8; or
 - 1.12.2 A copy of an agreement or other documentation that demonstrates that the municipality has assumed ownership of the Facility and that the ECA identified in Table B8 should be revoked.

Schedule C: List of Notices of Amendment to this ECA: Additional Approved Sewage Works

System Owner	Kingston, The Corporation of the City of
ECA Number	018-S701
System Name	City of Kingston Stormwater Management System
ECA Issue Date	August 25th, 2022

1.0 General

- 1.1 Table C1 provides a list of all notices of amendment to this Approval that have been issued pursuant to clause 20.3(1) of the EPA that impose terms and conditions in respect of the Authorized System after consideration of an application by the Director (Schedule C Notices).

Table C1: Schedule C Notices				
Column 1 Issue #	Column 2 Issue Date	Column 3 Description	Column 4 Status	Column 5 DN#
N/A	N/A	N/A	N/A	N/A

Schedule D: General

System Owner	Kingston, The Corporation of the City of
ECA Number	018-S701
System Name	City of Kingston Stormwater Management System
ECA Issue Date	August 25th, 2022

1.0 Definitions

1.1 For the purpose of this Approval, the following definitions apply:

“Adverse Effect(s)” has the same meaning as defined in section 1 of the EPA.

“Alteration(s)” includes the following, in respect of the Authorized System, but does not include repairs to the system:

- a) An extension of the system,
- b) A replacement or retirement of part of the system, or
- c) A modification of, addition to, or enlargement of the system.

“Appendix A” means Appendix A of this Approval.

“Approval” means this Environmental Compliance Approval including any Schedules attached to it.

“Appurtenance(s)” has the same meaning as defined in O. Reg. 525/98 (Approval Exemptions) made under the OWRA.

“Authorized System” means the Sewage Works comprising the Municipal Stormwater Management System authorized under this Approval”.

“Class Environmental Assessment Project” means an Undertaking that does not require any further approval under the EAA if the proponent complies with the process set out in the Municipal Engineers Association Class Environmental Assessment document, (Municipal Class Environmental Assessment approved by the Lieutenant Governor in Council on October 4, 2000 under Order in Council 1923/2000), as amended from time to time.

“Combined Sewer(s)” means pipes that collect and transmit both sanitary Sewage and other Sewage from residential, commercial, institutional, and

industrial buildings and facilities and Stormwater through a single-pipe system, but does not include Nominally Separate Sewers.

“Completion” means substantial performance as described in s.2 (1) of the *Construction Act*, R.S.O. 1990, c. C.30.

“Compound of Concern” means a Contaminant that is discharged from the Facility in an amount that is not negligible.

“Contaminant” has the same meaning as defined in section 1 of the EPA.

“CSO” means a combined sewer overflow which is a discharge to the environment at designated location(s) from a Combined Sewer or Partially Separated Sewer that usually occurs as a result of precipitation when the capacity of the Sewer is exceeded. An intervening time of twelve hours or greater separating a CSO from the last prior CSO at the same location is considered to separate one overflow Event from another.

“CWA” means the *Clean Water Act*, R.S.O. 2006, c.22.

“Design Criteria” means the design criteria set out in the Ministry’s publication “Design Criteria for Sanitary Sewers, Storm Sewers and Force mains for Alterations Authorized under Environmental Compliance Approval”, (as amended from time to time).

“Design Guidelines for Sewage Works” means the Ministry document titled “Design Guidelines for Sewage Works”, 2008 (as amended from time to time).

“Director” means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of EPA (Environmental Compliance Approvals).

“Director Notification Form” means the most recent version of the Ministry form titled Director Notification – Alterations to a Municipal Stormwater Management System, as obtained directly from the Ministry or from the Ministry’s website.

“District Manager” means the district manager or a designated representative of the Local Ministry Office.

“EAA” means the *Environmental Assessment Act*, R.S.O. 1990, c. E.18.

“EPA” means the *Environmental Protection Act*, R.S.O. 1990, c.E.19.

“ESC” means erosion and sediment control.

“Facility” means the entire operation located on the property where the Sewage Works or equipment is located.

“Form SW1” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Storm Sewers/Ditches/Culverts as obtained directly from the Ministry or from the Ministry’s website.

“Form SW2” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Stormwater Management Facilities as obtained directly from the Ministry or from the Ministry’s website.

“Form SW3” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Third Pipe Collection Systems as obtained directly from the Ministry or from the Ministry’s website.

“Licensed Engineering Practitioner” means a person who holds a licence, limited licence, or temporary licence under the *Ontario Professional Engineers Act* R.S.O. 1990, c. P.28.

“LID” means “low impact development” a Stormwater management strategy that seeks to mitigate the impacts of increased runoff and Stormwater pollution by managing runoff as close to its source as possible. LID comprises a set of site design strategies that minimize runoff and distributed, small scale structural practices that mimic natural or predevelopment hydrology through the processes of infiltration, evapotranspiration, harvesting, filtration, and detention of Stormwater.

“Local Ministry Office” means the local office of the Ministry responsible for the geographic area where the Authorized System is located.

“Minister” means the Minister of the Ministry or such other member of the Executive Council as may be assigned the administration of the EPA and OWRA under the *Executive Council Act*, R.S.O. 1990, c. E.25.

“Ministry” means the Ministry of the Minister and includes all employees or other persons acting on its behalf.

“Monitoring Plan” means the monitoring plan prepared and maintained by the Owner under condition 4.1 in Schedule E of this Approval.

“MTD” means manufactured treatment device.

“Municipal Drain” has the same meaning as drainage works as defined in section 1 of the *Drainage Act* R.S.O. 1990, c. D.17.

“Municipal Drainage Engineer’s Report” means a report signed by a drainage engineer employed or contracted by a municipality and approved in writing by municipal council or equivalent.

“Municipal Sewage Collection System” means all Sewage Works, located in the geographical area of a municipality, that collect and transmit sanitary Sewage and are owned, or may be owned pursuant to an agreement with a municipality entered into under the *Planning Act* or *Development Charges Act*, 1997, by:

- a) A municipality, a municipal service board established under the *Municipal Act*, 2001 or a city board established under the *City of Toronto Act*, 2006; or
- b) A corporation established under sections 9, 10, and 11 of the *Municipal Act*, 2001 in accordance with section 203 of that Act or under sections 7 and 8 of the *City of Toronto Act*, 2006 in accordance with sections 148 and 154 of that Act.

“Municipal Stormwater Management System” means all Sewage Works, located in the geographical area of a municipality, that collect, transmit, or treat Stormwater and are owned, or may be owned pursuant to an agreement entered into under the *Planning Act* or *Development Charges Act*, 1997, by:

- a) A municipality, a municipal service board established under the *Municipal Act*, 2001 or a city board established under the *City of Toronto Act*, 2006; or
- b) A corporation established under sections 9, 10, and 11 of the *Municipal Act*, 2001 in accordance with section 203 of that Act or under sections 7 and 8 of the *City of Toronto Act*, 2006 in accordance with sections 148 and 154 of that Act.

“Natural Environment” has the same meaning as defined in section 1 of the EPA.

“Nominally Separate Sewer(s)” mean Separate Sewers that also have connections from roof leaders and foundation drains, and are not considered to be Combined Sewers.

“OGS” means Oil and Grit Separator(s);

“Operating Authority” means, in respect of the Authorized System, the person, entity, or assignee that is given responsibility by the Owner for the operation, management, maintenance, or Alteration of the Authorized System, or a portion of the Authorized System.

"Owner" for the purposes of this Approval means The Corporation of the City of Kingston, and includes its successors and assigns.

"OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40.

"O&M Manual" means the operation and maintenance manual prepared and maintained by the Owner under condition 3.2 in Schedule E of this Approval.

"Partially Separated Sewer(s)" means Combined Sewers that have been retrofitted to transmit sanitary Sewage but in which roof leaders or foundation drains still contribute Stormwater inflow to the Partially Separated Sewer.

"Pre-development" means the more stringent of a site's:

- a) Existing condition prior to proposed development or construction activities; or
- b) Condition as defined by the local municipality.

"Prescribed Person" means a person prescribed in O. Reg. 208/19 (Environmental Compliance Approval in Respect of Sewage Works) for the purpose of ss. 20.6 (1) of the EPA, and where the alteration, extension, enlargement, or replacement is carried out under an agreement with the Owner.

"Privately Owned Stormwater Works" means Stormwater Sewage Works on private land that are privately owned and, while not part of the Authorized System, are considered part of a Stormwater Treatment Train.

"Qualified Person (QP)" means persons who have obtained the relevant education and training and have demonstrated experience and expertise in the areas relating to the work required to be carried out by this Approval.

"Schedule C Notice(s)" means a notice(s) of amendment to this Approval issued pursuant to clause 20.3(1) of the EPA that imposes terms and conditions in respect of the Authorized System after consideration of an application by the Director.

"Separate Sewer(s)" means pipes that collect and transmit sanitary Sewage and other Sewage from residential, commercial, institutional, and industrial buildings.

"Sewage" has the same meaning as defined in section 1 of the OWRA.

"Sewage Works" has the same meaning as defined in section 1 of the OWRA.

“Sewer” has the same meaning as defined in section 1 of O. Reg. 525/98 under the OWRA.

“Significant Drinking Water Threat” has the same meaning as defined in section 2 of the CWA.

“Significant Snowmelt Event(s)” means the melting of snow at a rate which adversely affects the performance and function of the Authorized System and/or the Sewage Treatment Plant(s) identified in Schedule A of this Approval.

“Significant Storm Event(s)” means a minimum of 25 mm of rain in any 24 hours period.

“Source Protection Authority” has the same meaning as defined in section 2 of the CWA.

“Source Protection Plan” means a drinking water source protection plan prepared under the CWA.

“SSO” means a sanitary sewer overflow which is a discharge of Sewage from a Separate Sewer or Nominally Separate Sewer to the environment from designated location(s) in the Authorized System.

“Standard Operating Policy for Sewage Works” means the standard operating policy developed by the Ministry to assist in the implementation of Source Protection Plan policies related to Sewage Works and providing minimum design and operational standards and considerations to mitigate risks to sources of drinking water, as amended from time to time.

“Storm Sewer” means Sewers that collect and transmit, but not exfiltrate or lose by design, Stormwater resulting from precipitation and snowmelt.

“Stormwater” means rainwater runoff, water runoff from roofs, snowmelt, and surface runoff.

“Stormwater Management Facility(ies)” means a Facility for the treatment, retention, infiltration, or control of Stormwater.

“Stormwater Management Planning and Design Manual” means the Ministry document titled “Stormwater Management Planning and Design Manual”, 2003 (as amended from time to time).

“Stormwater Treatment Train” means a series of Stormwater Management Facilities designed to meet Stormwater management objectives (e.g., Appendix A) for a given area, and can consist of a combination of MTDs, LIDs and end-of-pipe controls.

“TRCA” means the Toronto Region Conservation Authority.

“Third Pipe Collection System” means Sewage Works designed to collect and transmit foundation drainage and/or groundwater to a receiving surface water or dry well;

“Undertaking” has the same meaning as in the EAA.

“Vulnerable Area(s)” has the same meaning as in the CWA.

2.0 General Conditions

- 2.1 The works comprising the Authorized System shall be constructed, installed, used, operated, maintained, replaced, or retired in accordance with the conditions of this Approval, which includes the following Schedules:

Schedule A – System Information

Schedule B – Municipal Stormwater Management System Description

Schedule C – List of Notices of Amendment to this ECA

Schedule D – General

Schedule E – Operating Conditions

Schedule F – Residue Management

Appendix A – Stormwater Management Criteria

- 2.2 The issuance of this Approval does not negate the requirements of other regulatory bodies, which includes but is not limited to, the Ministry of Northern Development, Mines, Natural Resources and Forestry and the local Conservation Authority.
- 2.3 Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence. Where there is a conflict between the information in a Schedule C Notice and another section of this Approval, the document bearing the most recent date shall prevail.
- 2.4 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Authorized System is provided with a print or electronic copy of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
- 2.5 The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

3.0 Alterations to the Municipal Stormwater Management System

- 3.1 For greater certainty, the Alterations authorized under this Approval are limited to Sewage Works comprising the Authorized System which does not include municipally or Privately Owned Stormwater Works:
 - 3.1.1 On industrial, commercial, or institutional land;
 - 3.1.2 Serving a single parcel of land, unless the stormwater management facility is located on a municipally owned park or community center;
 - 3.1.3 That are operated as waste disposal sites defined under the EPA or snow dump / melt facilities; or,
 - 3.1.4 That propose to collect, store, treat, or discharge stormwater containing substances or pollutants (other than Total Suspended Solids, or oil and grease) detrimental to the environment or human health.
- 3.2 Any Schedule C Notice shall provide authority to alter the Authorized System in accordance with the conditions of this Approval.
- 3.3 All Schedule C Notices issued by the Director for the Municipal Stormwater Management System shall form part of this Approval.
- 3.4 The Owner and a Prescribed Person shall ensure that the documentation required through conditions in this Approval and the documentation required in the Design Criteria are prepared for any Alteration of the Authorized System.
- 3.5 The Owner shall notify the Director within thirty (30) calendar days of placing into service or Completion of any Alteration of the Authorized System which had been authorized:
 - 3.5.1 Under Schedule D to this Approval where the Alteration results in a change to Sewage Works specifically described in Schedule B of this Approval;
 - 3.5.2 Through a Schedule C Notice respecting Sewage Works other than Storm Sewers; or
 - 3.5.3 Through another approval that was issued under the EPA prior to the issue date of this Approval.
- 3.6 The notification requirements set out in condition 3.5 do not apply to any Alteration in respect of the Authorized System which:
 - 3.6.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98;

- 3.6.2 Constitutes maintenance or repair of the Authorized System; or
- 3.6.3 Is a Storm Sewer, ditch, or culvert authorized by condition 4.1 of Schedule D of this Approval.
- 3.7 The Owner shall notify the Director within ninety (90) calendar days of:
 - 3.7.1 The discovery of existing Sewage Works not described or depicted in Schedule B, or
 - 3.7.2 Additional or revised information becoming available for any Sewage Works described in Schedule B of this Approval.
- 3.8 The notifications required in condition 3.5 and 3.7 shall be submitted to the Director using the Director Notification Form.
- 3.9 The Owner shall ensure that any chemicals, coagulants, or polymers used in the stormwater management system have obtained written approval from the Director prior to use, unless required for spill control or spill clean-up.
- 3.10 The Owner shall ensure that an ESC plan is prepared, and temporary ESC measures are installed in advance of and maintained during any construction activity on the Authorized System, subject to the following conditions:
 - 3.10.1 Inspections of ESC measures are to be conducted at a frequency specified per the ESC plan, for dry weather periods (active and inactive construction phases), after Significant Storm Events and Significant Snowmelt Events, and after any extreme weather events.
 - 3.10.2 Any deficiencies shall be addressed, and any required maintenance actions(s) shall be undertaken as soon as practicable once they have been identified.
 - 3.10.3 Inspections and maintenance of the temporary ESC measures shall continue until they are no longer required.
- 3.11 The Owner shall ensure that records of inspections required by this Approval during any construction activity, including those required under condition 3.10:
 - 3.11.1 Include the name of the inspector, date of inspection, visual observations, and the remedial measures, if any, undertaken to maintain the temporary ESC measures.

- 3.11.2 Be retained with records relating to the Alteration that the construction relates to, such as the form required in conditions 4.4.1, 5.5.1, and 6.2.1 of Schedule D, or the Schedule C Notice.
- 3.11.3 Be retrievable and made available to the Ministry upon request.
- 3.12 The document(s) or file(s) referenced in Table B1 of Schedule B of this Approval shall:
 - 3.12.1 Be retained by the Owner;
 - 3.12.2 Include at a minimum:
 - a) Identification of Storm Sewers, which shall include the following information:
 - i Location relative to street names or easements; and
 - ii Sewer diameters.
 - b) Identification of existing municipally owned Stormwater Sewage Works, including but not limited to ditches, swales, culverts, outlets, Stormwater Management Facilities, sedimentation MTD (for example oil grit separators), filtration MTD, LID, end of pipe controls, Third Pipe Collection Systems, and pumping stations, including any applicable Asset IDs.
 - c) Identification of the main tributaries and receiving water bodies to that the Sewage Works discharge to.
 - d) Delineation of municipal, watershed, and subwatershed boundaries, as available.
 - e) Identification of the storm sewersheds for each outlet.
 - f) Identification of any source protection Vulnerable Areas.
 - g) Identification of any Sewage Works that receive SSOs or CSOs.
 - 3.12.3 Be updated to include:
 - a) Alterations authorized under Schedule D of this Approval or through a Schedule C Notice within twelve (12) months of the Alteration being placed into service.
 - b) Updates to information contained in the document(s) or files(s) not associated with an Alteration within twelve (12) months of becoming aware of the updated information.

- 3.13 An Alteration is not authorized under Schedule D of this ECA for projects that impact Indigenous treaty rights or asserted rights where:
- 3.13.1 The project is on Crown land or would alter access to Crown land;
 - 3.13.2 The project is in an open or forested area where hunting, trapping or plant gathering occur;
 - 3.13.3 The project involves the clearing of forested land unless the clearing has been authorized by relevant municipal, provincial, or federal authorities, where applicable;
 - 3.13.4 The project alters access to a water body;
 - 3.13.5 The proponent is aware of any concerns from Indigenous communities about the proposed project and these concerns have not been resolved; or,
 - 3.13.6 Conditions respecting Indigenous consultation in relation to the project were placed in another permit or approval and have not been met.
- 3.14 No less than 60 days prior to construction associated with an Alteration the Director may notify the Owner in writing that a project is not authorized through Schedule D of this ECA where:
- 3.14.1 Concerns regarding treaty rights or asserted rights have been raised by one or more Indigenous communities that may be impacted by the Alteration; or
 - 3.14.2 The Director believes that it is in the public interest due to site specific, system specific, or project specific considerations.
- 3.15 Where an Alteration is not authorized under condition 3.13 or 3.14 above:
- 3.15.1 An application respecting the Alteration shall be submitted to the Ministry; and,
 - 3.15.2 The Alteration shall not proceed unless:
 - a) Approval for the Alteration is granted by the Ministry (i.e., a Schedule C Notice); or,
 - b) The Director provides written notice that the Alteration may proceed in accordance with conditions in Schedule D of this ECA.

4.0 Authorizations of Future Alterations to Storm Sewers, Ditches, or Culverts - Additions, Modifications, Replacements and Extensions

4.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending a Storm Sewer, ditch, or culvert within the Authorized System subject to the following conditions and conditions 4.2 and 4.3 below:

4.1.1 The design of the addition, modification, replacement, or extension:

- a) Has been prepared by a Licensed Engineering Practitioner;
- b) Has been designed only to collect and transmit Stormwater;
- c) Has not been designed to collect or treat any sanitary Sewage;
- d) Has not been designed to collect, store, treat, control, or manage groundwater, unless for the purpose of foundation drains, road subdrains, or LIDs;
- e) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;
- f) Satisfies the standards set out in Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD), as applicable to ditches and culverts;
- g) Is consistent with or otherwise addresses the design objectives contained within the Design Guidelines for Sewage Works;
- h) Is planned, designed, and built to be consistent with the Stormwater Management Planning and Design Guidance Manual. If there is a conflict with Appendix A of this Approval, then Appendix A shall prevail; and
- i) Includes design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies.

4.1.2 The addition, modification, replacement, or extension shall be designed so that it will:

- a) Not adversely affect the ability to maintain a gravity flow in the Authorized System without overflowing or increase surcharging any maintenance holes as per design; and
 - b) Provide smooth flow transition to existing gravity Storm Sewers;
- 4.1.3 The Alteration shall not result in:
 - a) Adverse Effects; or
 - b) A deterioration of the approved effluent quality or quantity of downstream Stormwater Management Facilities which results in not being able to achieve the overall Stormwater performance criteria per Appendix A.
- 4.1.4 The Storm Sewer, ditch or culvert addition, modification, replacement, or extension is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent property owner respecting the Alteration and resulting Sewage Works.
- 4.1.5 The Owner consents in writing to the addition, modification, replacement, or extension.
- 4.1.6 A Licensed Engineering Practitioner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 a) to h), 4.3.9, and 4.3.10.
- 4.1.7 The Owner has verified in writing that the addition, modification, replacement, or extension has complied with inspection and testing requirements in the Design Criteria.
- 4.1.8 The Owner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 i), 4.1.2 to 4.1.6, 4.3.7, and 7.2.
- 4.2 The addition of Storm Sewers or ditches can be constructed but not operated until the Stormwater Management Facilities required to service the new Storm Sewers or ditches are in operation.
- 4.3 The Owner or a Prescribed Person is not authorized to undertake an Alteration described above in condition 4.1 where the Alteration relates to the addition, modification, replacement, or extension of a Storm Sewer that:
 - 4.3.1 Passes under or through a body of surface water, unless trenchless construction methods are used or the local Conservation Authority has authorized an alternative construction method.

- 4.3.2 Has a nominal diameter greater than 2,400 mm, or equivalent sizing.
- 4.3.3 Is a Combined Sewer.
- 4.3.4 Is a concrete channel.
- 4.3.5 Is designed to, at any time, transmit, store, or control sanitary Sewage.
- 4.3.6 Converts rural road cross section ditches to curb, gutter, and Storm Sewers if the Stormwater volume and/or peak flow is increased and no water quality treatment is planned or demonstrated to be achieved, in accordance with this Approval and Appendix A, to offset the increase in Stormwater.
- 4.3.7 Results in new discharges or increased discharges to a Municipal Drain without written approval by the Owner and a signed Municipal Drainage Engineer's Report in accordance with the *Drainage Act* R.S.O. 1990, c. D.17.
- 4.3.8 Establishes a new outlet with direct discharge into the Natural Environment without monitoring in accordance with this Approval and without achieving the requirements set in Appendix A.
- 4.3.9 Increases Stormwater flow of an existing Storm Sewer or ditch without achieving water quality criteria set in Appendix A in accordance with this Approval unless the existing downstream Municipal Stormwater Management System has sufficient residual transmission and treatment capacity to accommodate the additional Stormwater.
- 4.3.10 Increases local hydraulic capacity of an existing Storm Sewer or ditch to accommodate new Stormwater flows unless the existing downstream Municipal Stormwater Management System has sufficient residual hydraulic capacity to accommodate the additional Stormwater.
- 4.3.11 Connects to another Municipal Stormwater Management System, unless:
 - a) Prior to construction, the Owner of the Authorized System obtains written consent from the Owner or Owner's delegate of the Municipal Stormwater System being connected to; and
 - b) The Owner of the Authorized System retains a copy of the written consent from the Owner or Owner's delegate of the Municipal Stormwater Management System being connected

to as part of the record that is recorded and retained under condition 4.4.

4.3.12 Is part of an Undertaking in respect of which:

- a) A request under s.16(6) of the EAA has been made, namely a request that the Minister make an order under s.16;
- b) The Minister has made an order under s.16; or
- c) The Director under that EAA has given notice under s.16.1 (2) that the Minister is considering making an order under s.16.

4.4 The consents and verifications required in conditions 4.1 and 4.3, if applicable, shall be:

4.4.1 Recorded on SW1, prior to the Storm Sewer, ditch, or culvert addition, modification, replacement, or extension being placed into service; and

4.4.2 Retained for a period of at least ten (10) years by the Owner.

4.5 For greater certainty, the verification requirements set out in condition 4.4 do not apply to any Alteration in respect of the Authorized System which:

4.5.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or

4.5.2 Constitutes maintenance or repair of the Authorized System.

5.0 Authorizations of Future Alterations to Stormwater Management Facilities - Additions, Modifications, Replacement, and Extensions

5.1 Subject to conditions 5.2 and 5.3, the Owner or a Prescribed Person may alter the Stormwater Management Facilities in the Authorized System by adding, modifying, replacing, or extending the following components:

5.1.1 Rooftop storage

5.1.2 Parking lot storage

5.1.3 Superpipe storage

5.1.4 Reduced lot grading

5.1.5 Roof leader to ponding area

5.1.6 Roof leader to soakaway pit

- 5.1.7 Infiltration trench
 - 5.1.8 Engineered grassed swales / bioswale
 - 5.1.9 Pervious pipes
 - 5.1.10 Pervious catchbasins
 - 5.1.11 Vegetated filter strips
 - 5.1.12 Natural buffer strips
 - 5.1.13 Green roofs/Rooftop gardens
 - 5.1.14 Wet pond
 - 5.1.15 Engineered wetland
 - 5.1.16 Dry pond
 - 5.1.17 Hybrid Facility
 - 5.1.18 Infiltration basin
 - 5.1.19 Filtration MTD
 - 5.1.20 Sedimentation MTD - OGS
 - 5.1.21 LID that relies on one or more of the following mechanisms to achieve treatment and control:
 - a) Evapotranspiration;
 - b) Infiltration into the ground; or
 - c) Filtration.
 - 5.1.22 Any other Stormwater Management Facilities where the Director has provided authorization in writing to proceed with the Alteration.
- 5.2 Any Alteration to the Authorized System authorized under condition 5.1 is subject to the following conditions:
- 5.2.1 The design of the Alteration shall:
 - a) Be prepared by a Licensed Engineering Practitioner;

- b) Be designed only to collect, receive, treat, or control only Stormwater and has not been designed to collect, receive, treat, or control sanitary Sewage;
- c) Is planned, designed, and built to be consistent with the Stormwater Management Planning and Design Guidance Manual. If there is a conflict Appendix A of this Approval, then Appendix A shall prevail;
- d) Satisfy the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;
- e) Be part of a Stormwater Treatment Train approach that satisfies the requirements outlined in Appendix A, or transmits Stormwater to a Stormwater Management Facility that satisfies the requirements outlined in Appendix A;
- f) Includes an outlet or an emergency overflow for the Sewage Works, with the verification of the location, route, and capacity of the receiving major system to accommodate overflows; and
- g) Include design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works and any applicable local Source Protection Plan policies.

5.2.2 The Alteration shall not result in:

- a) Adverse Effects; or
- b) A deterioration on the approved effluent quality or quantity of downstream Stormwater Management Facilities which results in not being able to achieve the overall Stormwater performance criteria per Appendix A.

5.2.3 The Alteration may incorporate co-benefits, but in doing so shall not diminish functionality or efficiency of any Stormwater Management Facility(ies) that may be impacted by the Alteration.

5.2.4 Any new sedimentation MTD that is part of the Alteration shall meet the following requirements:

- a) Tested in accordance with the TRCA protocol Procedure for Laboratory Testing of OGSs and testing data verified in accordance with the ISO 14034 Environmental Technology Verification (ETV) protocol. The suspended solids removal claimed for the sedimentation MTD in achieving the water

quality criteria in Appendix A, and the sizing methodology used to determine the appropriate sedimentation MTD dimensions for the particular site, shall be based on the verified removal efficiency for all particle size fractions comprising the particle size distribution specified within the testing protocol or a particle size distribution approved by the Director.

- b) Using the verified sediment removal efficiencies for the respective surface loading rates specified in the testing protocol, the sedimentation MTD sizing methodology shall use linear interpolation to calculate sediment removal efficiencies for surface loading rates that lie between the specified surface loading rates. For surface loading rates less than the lowest specified and tested surface loading rate, the sediment removal efficiency shall be assumed to be identical to the verified removal efficiency for the lowest specified and tested surface loading rate. Where available, 15 min rainfall stations shall be used for sizing the sedimentation MTD.
- c) When two or more sedimentation MTD are installed in series, no additional sediment removal credit shall be applied beyond the sediment removal credit of the largest device in the series.
- d) The sediment removal rate at the specified surface loading rates determined for the tested full scale, commercially available MTD may be applied to similar MTDs of smaller or larger size by proper scaling. Scaling the performance results of the tested MTD to other model sizes without completing additional testing is acceptable provided that:
 - i The claimed sediment removal efficiencies for the similar MTD are the same or lower than the tested MTD at identical surface loading rates; and
 - ii The similar MTD is scaled geometrically proportional to the tested unit in all inside dimensions of length and width and a minimum of 85% proportional in depth.
- e) The units must be installed in an off-line configuration if the unit had an effluent concentration greater than 25 mg/L at any of the surface loading rates conducted during the sediment scour and resuspension test as part of the ISO 14034 verification.
- f) The sedimentation MTD should be sized for the highest suspended solids percent removal physically and

economically practicable, and used as a pre-treatment device in a treatment train designed to achieve the water quality criteria in Appendix A.

5.2.5 Any new filtration MTD that is part of the Alteration shall meet the following requirements:

- a) Field tested and verified in accordance with a minimum of one of the following protocols:
 - i Washington State Technology Assessment Protocol - Ecology (TAPE) General Use Level Designation (GULD); and
 - 1. Has ISO 14034 ETV verification to satisfy ETV Canada requirements;
 - 2. The field monitoring data set used to obtain GULD certification should include a minimum of three (3) events that exceed 75th percentile rainfall event with at least one hour with an intensity of 6 mm/h or greater.
 - ii Another testing and verification method, where the Director has communicated acceptability in writing.
- b) Where available, 15 min rainfall stations shall be used for sizing the filtration MTD using the rainfall intensity corresponding to 90% of annual runoff volume;
- c) The SS removal rate determined for the tested full scale, commercially available filtration MTD, or single full-scale commercially available cartridge or filtration module, may be applied to other model sizes of that filtration MTD provided that appropriate scaling principles are applied. Scaling the tested filtration MTD or single full-scale commercially available cartridge or filtration module, to determine other model sizes and performance without completing additional testing is acceptable provided that:
 - i Depth of media, composition of media, and gradation of media remain constant.
 - ii The ratio of the maximum treatment flow rate to effective filtration treatment area (filter surface area) is the same or less than the tested filtration MTD;

- iii The ratio of effective sedimentation treatment area to effective filtration treatment area is the same or greater than the tested filtration MTD; and
 - iv The ratio of wet volume to effective filtration treatment area is the same or greater than the tested filtration MTD.
- 5.2.6 When it is necessary to use Privately Owned Stormwater Works in the Stormwater Treatment Train to achieve Appendix A criteria as part of or as a result of an Alteration, the following conditions apply:
 - a) The Owner shall, through legal instruments or binding agreements, obtain the right to access, operate, and maintain the Privately Owned Sewage Works;
 - b) The Owner shall ensure that the right to access, operate and maintain the Privately Owned Sewage Works described in condition 5.2.6 a) above is maintained at all times that the works are in service and used to achieve Appendix A criteria.
 - c) The Owner ensures on-going operation and maintenance of the Privately Owned Stormwater Works; and
 - d) The Owner shall ensure that the Privately Owned Stormwater Works have obtained separate approval(s) under the EPA, as required.
- 5.2.7 The Alteration is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.
- 5.2.8 The Owner consents in writing to the Alteration authorized under condition 5.1.
- 5.2.9 A Licensed Engineering Practitioner has verified in writing that the Alteration authorized under condition 5.1 meets the design requirements of conditions 5.2.1 a) to f), 5.2.4 and 5.2.5.
- 5.2.10 The Owner has verified in writing that the Alteration authorized under condition 5.1 meets the requirements of conditions 5.2.1 g), 5.2.2, 5.2.6 to 5.2.9, 5.3, 5.4, and 7.2.
- 5.3 The authorization in condition 5.1 does not apply:
 - 5.3.1 To the establishment of a regional end-of-pipe flood control Facility;

- 5.3.2 Where the Alteration will result in new or increased discharges to a Municipal Drain without written approval by the Owner and a signed Municipal Drainage Engineer's Report in accordance with the *Drainage Act* R.S.O. 1990, c. D.17;
- 5.3.3 To the establishment of a new outlet with direct discharge into the Natural Environment without treatment and monitoring in accordance with this Approval;
- 5.3.4 Where the Alteration will service a drainage area greater than 65 ha;
- 5.3.5 Where the Alteration will result in conversion of an existing Stormwater Management Facility into another type of Stormwater Management Facility;
- 5.4 Any Alteration to LID or end-of-pipe Stormwater Management Facilities shall be inspected before operation of the Alteration to confirm construction as per specifications (including depth, as applicable).
- 5.5 The consents and verifications required in conditions 5.2.8 to 5.2.10 if applicable, shall be:
 - 5.5.1 Recorded on Form SW2, prior to undertaking the Alteration;
and
 - 5.5.2 Retained for a period of at least ten (10) years by the Owner.
- 5.6 For greater certainty, the verification requirements set out in condition 5.5 do not apply to any Alteration in respect of the Authorized System which:
 - 5.6.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or
 - 5.6.2 Constitutes maintenance or repair of the Authorized System.

6.0 Authorizations of Future Alterations for Third Pipe Collection System Additions, Modifications, Replacements and Extensions

- 6.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending, and operating works comprising a municipal Third Pipe Collection System to collect foundation drainage and groundwater where:
 - 6.1.1 The design of the Alteration:
 - a) Has been prepared by a Licensed Engineering Practitioner;

- b) Is limited to collection, transmission, reuse and/or treatment of only foundation drainage and groundwater, and is not designed to collect or treat sanitary Sewage;
 - c) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria; and
 - d) Is scoped so that the resulting Sewage Works are intended to:
 - i Primarily function for the non-potable reuse, as deemed acceptable by the Owner and the local health unit, of foundation drainage and/or groundwater, and no discharge to a Storm Sewer or Separate Sewer if there is excess volume that cannot be reused; and/or
 - ii Provide wetland recharge, in which case, collection of rooftop runoff will also be acceptable.
- 6.1.2 The Alteration is not located on a contaminated site, or where natural occurring conditions result in contaminated discharge, or where the site receives contaminated groundwater or foundation drainage from another site, unless the discharge being received has been remediated or treated prior to acceptance by the Third Pipe Collection System.
- 6.1.3 The Owner has undertaken a site assessment for water quantity, water quality, and hydrogeological site conditions regarding the Alteration.
- 6.1.4 The Alteration will not result in Adverse Effects.
- 6.1.5 The Alteration is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent property owner respecting the Alteration and resulting Sewage Works.
- 6.1.6 The Owner consents in writing to the Alteration.
- 6.1.7 A Licensed Engineering Practitioner has verified in writing that the Alteration meets the requirements of condition 6.1.1.
- 6.1.8 The Owner has verified in writing that the Alteration meets the requirements of conditions 6.1.2 to 6.1.7.
- 6.2 The consents, verifications and documentation required in conditions 6.1.7 and 6.1.8 shall be:

- 6.2.1 Recorded on Form SW3 prior to undertaking the Alteration; and
- 6.2.2 Retained for a period of at least ten (10) years by the Owner.
- 6.3 For greater certainty, the verification requirements set out in condition 6.2 do not apply to any Alteration in respect of the Authorized System which:
 - 6.3.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or
 - 6.3.2 Constitutes maintenance or repair of the Authorized System, including changes to software for an existing SCADA system resulting from Alterations authorized in condition 6.1.
- 6.4 The Owner shall update, within twelve (12) months of the Alteration of the Sewage Works being placed into service, any drawings maintained for the Municipal Stormwater Management System to reflect the Alterations of the Sewage Works, where applicable.

7.0 Outlets

- 7.1 Any outlet established or altered as part of an Alteration authorized through conditions 4, 5, or 6 of Schedule D in this Approval shall have regard to the 2012 TRCA Stormwater Management Criteria document, Appendix E, for outlets.
- 7.2 Any outlet established as part of an Alteration authorized through conditions 4, 5, or 6 of Schedule D in this Approval shall not:
 - 7.2.1 Increase discharge or create a new point source discharge to privately owned land unless there is express written consent of the owner(s) of such private land(s).
 - 7.2.2 Result in Adverse Effects.

8.0 Previously Approved Sewage Works

- 8.1 If approval for an Alteration to the Authorized System was issued under the EPA and is revoked by this Approval, the Owner may make the Alteration in accordance with:
 - 8.1.1 The terms of this Approval; or
 - 8.1.2 The terms and conditions of the revoked approval as of the date this approval was issued, provided that the Alteration is commenced within five (5) years of the date that the revoked approval was issued.

9.0 Transition

- 9.1 An Alteration of the Authorized System is exempt from the requirements in clause (e) of condition 4.1.1, clause (d) of condition 5.2.1, and clause (c) of condition 6.1.1 where:
 - 9.1.1 Effort to undertake the Alteration, such as tendering or commencement of construction of the Sewage Works associated with the Alteration, begins on or before May 21, 2023.
 - 9.1.2 The design of the Alteration conforms to the Stormwater Management Planning and Design Manual, and where applicable, Design Guidelines for Sewage Works;
 - 9.1.3 The design of the Alteration was completed on or before the issue date of this Approval or a Class Environmental Assessment was completed for the Alteration and changes to the design result in significant cost increase or significant project delays; and
 - 9.1.4 The Alteration would be otherwise authorized under this Approval.

Schedule E: Operating Conditions

System Owner	Kingston, The Corporation of the City of
ECA Number	018-S701
System Name	City of Kingston Stormwater Management System
ECA Issue Date	August 25th, 2022

1.0 General Operations

- 1.1 The Owner shall ensure that, at all times, the Sewage Works comprising the Authorized System and the related equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.
- 1.2 Prescribed Persons and Operating Authorities shall ensure that, at all times, the Sewage Works under their care and control and the related equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.
- 1.3 In conditions 1.1 and 1.2 “properly operated and maintained” includes effective performance, adequate funding, adequate operator staffing and training, including training in applicable procedures and other requirements of this Approval and the EPA, OWRA, CWA, and regulations, adequate laboratory services, process controls and alarms and the use of process chemicals and other substances used in the Authorized System.
- 1.4 The Owner ensure that Sewage Works are operated with the objective that the effluent from the Sewage Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen, foam, or discoloration on the receiving waters, and shall evaluate the need for maintenance if the objective is not being met.
- 1.5 The Owner shall ensure that any Storm Sewers or ditches authorized under Schedule D of this approval are not placed into operation until the associated Stormwater Management Facilities to provide treatment are constructed and operated.

2.0 Duties of Owners and Operating Authorities

- 2.1 The Owner, Prescribed Persons, and any Operating Authority shall ensure the following:

- 2.1.1 At all times that the Sewage Works within the Authorized System are in service, the Sewage Works are:
 - a) Operated in accordance with the requirements under the EPA and OWRA, and
 - b) Maintained in a state of good repair.
- 2.1.2 The Authorized System is operated by persons that are familiar with the requirements of this Approval.
- 2.1.3 All sampling, testing, monitoring, and reporting requirements under the EPA and this Approval that relate to the Authorized System are complied with.
- 2.1.4 All necessary steps are taken to ensure that operations of the Sewage Works and any associated physical structures do not constitute a safety or health hazard to the general public.
- 2.1.5 Where a Stormwater Management Facility ceases to function as a Stormwater Management Facility, whether by intent, accident, or otherwise (e.g., a CSO or an SSO), a workplan shall be developed that includes local community notification, plans for rehabilitating the Stormwater Management Facility to proper function in a reasonable time, identification of actions that will be taken to prevent reoccurrences, and timelines for implementing the workplan.
- 2.1.6 That operations and maintenance activities are undertaken at the frequency and in conformance with the procedures set out in the O&M Manual.
 - a) A Prescribed Person or Operating Authority shall only undertake operations and maintenance activities where they have been delegated the authority to undertake such activities by the Owner or the Owner has expressly approved the activity(ies).
- 2.2 For clarity, the requirements outlined in the above conditions 2.1 for Prescribed Persons and any Operating Authority only apply to Sewage Works within the Authorized System where they are responsible for the operation.
- 2.3 The Owner, Prescribed Persons, and Operating Authority shall take all reasonable steps to minimize and ameliorate any Adverse Effect on the Natural Environment or impairment of the quality of water of any waters resulting from the operation of the Authorized System, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

3.0 Operations and Maintenance

3.1 Inspection

- 3.1.1 The Owner shall ensure that all Sewage Works within the Authorized System are inspected at the frequency and in accordance with procedures set out in their O&M Manual.
- 3.1.2 The owner shall ensure that:
 - a) Any Stormwater Management Facilities, pumping stations, and any outlets that discharge to a receiver, are inspected at least once before December 31, 2026, if these have not been inspected since January 1, 2018 and thereafter as required by the O&M Manual; and
 - b) Any Stormwater Management Facilities, pumping stations, and any outlets that discharge to a receiver, established, or replaced within the Authorized System after the date of issuance of this Approval, are inspected within one year of being placed into service and thereafter as required by the O&M Manual.
- 3.1.3 The Owner shall clean and maintain Sewage Works within the Authorized System to ensure the Sewage Works perform as designed.
- 3.1.4 The Owner shall inspect the Stormwater Management Facilities in the Authorized System after significant flooding events as defined in, and in accordance with procedures documented in, the O&M Manual.
- 3.1.5 The Owner shall maintain records of the results of the inspections required in condition 3.1.1, 3.1.2 and 3.1.4 and any cleaning and maintenance operations undertaken, and shall make available the records for inspection by the Ministry upon request. The records shall include the following:
 - a) Asset ID and name of the Sewage Works;
 - b) Date and results of each inspection, maintenance, or cleaning;
 - c) Name of person who conducted the inspection, maintenance, or the name of the inspecting official, where applicable, and
 - d) As applicable to the type of works, observations resulting from the inspection including, at a minimum:

- i Hydraulic operation of the works (e.g., length of occurrence since the last rainfall event, evidence or occurrence of overflows).
- ii Condition of vegetation in and around the works.
- iii Occurrence of obstructions at the inlet and outlet of the works.
- iv Evidence of spills and/or oil/grease contamination.
- v Presence of trash build-up, and
- vi Measurements of other parameters as required in the Monitoring Plan.

3.2 Operations & Maintenance (O&M) Manual

3.2.1 The Owner shall prepare and implement an operations and maintenance manual for Sewage Works within the Authorized System on or before May 21, 2024, that includes or references, but is not necessarily limited to, the following information:

- a) Procedures for the routine operation of the Sewage Works;
- b) Inspection programs, including the frequency of inspection, and the methods or tests employed to detect when maintenance is necessary, including:
 - i Presence of algae and/or invasive species impairing the Works (e.g., phragmites, goldfish);
 - ii Measurements of sediment depth, manual water levels (staff gauge) and/or visual observations, as appropriate to the Stormwater Management Facilities.
- c) Maintenance and repair programs, including:
 - i The frequency of maintenance and repair for the Sewage Works;
 - ii Stormwater pond sediment cleanout, dewatering, and management;

- iii Excavation, modification, replacement of LID soil/media/aggregate/geotextile, such as bioretention cells, green roof, permeable pavement; and
 - iv The frequency of maintenance for any other Stormwater Management Facilities identified in Schedule B that collect sediment.
 - d) Operational and maintenance requirements to protect sources of drinking water, such as those included in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies;
 - e) Procedures for routine physical inspection and calibration of monitoring equipment or components in accordance with the Monitoring Plan;
 - f) Emergency Response, Spill Reporting and Contingency Plans and Procedures for dealing with equipment breakdowns, potential spills, and any other abnormal situations, including notification to the Spills Action Centre, the Medical Officer of Health, and the District Manager, as applicable;
 - g) Procedures for receiving, responding, and recording public complaints, including recording any follow-up actions taken; and
 - h) As-built drawings or record drawings of the Sewage Works for stormwater works constructed after 2010 and where available, for stormwater works constructed before 2010.
- 3.2.2 The Owner shall review and update the O&M Manual and ensure that access to a copy is readily available for each Stormwater Management Facility for the operational life of the works.
- 3.2.3 The Owner shall provide a copy of the O&M Manual to Ministry staff, upon request.
- 3.2.4 The Owner shall revise the O&M Manual to include procedures necessary for the operation and maintenance of any Sewage Works within the Authorized System that are established, altered, extended, replaced, or enlarged after the date of issuance of this approval prior to placing into service those Sewage Works.
- 3.2.5 For greater certainty, the O&M Manual may be a single document or a collection of documents that, when considered together, apply to all parts of the Authorized System.

- 3.3 On or before May 21, 2025, the Owner shall establish signage to notify the public at any Stormwater Management Facility identified in Schedule B that is a wet pond, dry pond, hybrid Facility, or engineered wetland. The signage shall include the following minimum information:
- 3.3.1 Identification that the site contains a Stormwater Management Facility;
 - 3.3.2 Identification of potential hazards and limitations of water use, as applicable;
 - 3.3.3 Identification of the purpose of the Facility;
 - 3.3.4 ECA approval number and/or asset ID; and
 - 3.3.5 Owner's contact information.
- 3.4 Prior to any maintenance of Sewage Works comprising the Authorized System, the Owner shall ensure that all applicable permits or authorizations have been obtained from Federal or Provincial agencies having legislative mandates relating to species at risk or water resources.

4.0 Monitoring Plan

- 4.1 On or before May 31, 2025 or within twenty-four (24) months of the date of the publication of the Ministry's monitoring guidance, whichever is later, the Owner shall develop and implement a monitoring plan for the Authorized System. The monitoring plan shall be:
- 4.1.1 Signed and approved by management with the authority delegated by the Owner to do so;
 - 4.1.2 Peer-reviewed by a third-party Qualified Person (QP), external to the development of the Monitoring Plan, to verify the adequacy of the Monitoring Plan in complying with conditions 4.4 and 4.5 of Schedule E. The results of the peer review shall include:
 - a) Written confirmation from the QP that they have the experience and qualifications to carry out the work; and
 - b) Written confirmation from the QP of the adequacy of the Monitoring Plan.
- 4.2 The Owner, or a QP designated by the Owner, may jointly develop the Monitoring Plan in partnership with Owner(s) of other Municipal Stormwater Management Systems as long as the Municipal Stormwater Management Systems are within the same watershed.

- 4.3 The Owner shall ensure the Monitoring Plan is implemented and any resulting monitoring data is recorded in an electronic database.
- 4.4 The Monitoring Plan shall include:
- 4.4.1 Procedures to verify that the operational performance of the Authorized System is as designed/planned;
 - 4.4.2 Procedures to assess the environmental impact of the Municipal Stormwater Management System; and
 - 4.4.3 Procedures for any corrective action that may be required to address any performance deficiencies or environmental impacts identified from above conditions 4.4.1 or 4.4.2.
- 4.5 The Monitoring Plan shall also include, but not be limited to:
- 4.5.1 Identification of the Sewage Works to be monitored, including outlets and any works that provide quality and/or quantity control;
 - 4.5.2 Identification of the key receivers to be monitored within the Owner's municipal boundaries and the monitoring locations;
 - 4.5.3 Consideration of relevant municipal land use and environmental planning documents (e.g., Stormwater Management Master Plan, Class Environmental Assessment Project, asset management plan, subwatershed studies, and planned development);
 - 4.5.4 Characterization of water quality and quantity conditions and identification of water users to be protected, based on conditions 4.5.2 and 4.5.3;
 - 4.5.5 Identification of water quality and quantity goals, as it relates to Stormwater management, using the information collected in condition 4.5.4;
 - 4.5.6 Identification of locations of rainfall gauges to be used;
 - 4.5.7 Identification of inspections, measurements, sampling, analysis and/or other monitoring activities that were used as the basis for or will inform future updates to the procedures identified in condition 4.4.
 - 4.5.8 Details respecting a monitoring program for the works and the receivers, that includes, at a minimum:
 - a) Hydrological, chemical, physical, and biological parameters, as appropriate, in alignment with the goals;

- b) Ensures water level of the Stormwater Measurement Facilities, excluding MTDs, are measured at regular intervals with a water level gauge;
 - c) Monitoring methodology, including the frequency and protocols for sampling, analysis, and recording, with consideration of dry and wet weather events and timing of sampling during wet weather events.
 - d) Ensures that the time of all samples or measurements are recorded.
- 4.5.9 An implementation plan for the monitoring program that identifies timelines and, if the monitoring occurs on a rotational basis, provides a description of the rotational schedule and associated works.
- 4.5.10 Includes a summary of all monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations, and
- 4.5.11 Consideration of adaptive management practices (e.g., evidence-based decision making).
- 4.6 The Owner shall ensure that the Monitoring Plan is updated where necessary within twelve (12) months of any Alteration to the Authorized System, or more frequently as required by the Monitoring Plan.
- 4.7 The Owner shall, on request and without charge, provide a copy of the Monitoring Plan and any resulting monitoring data to members of the public.

5.0 Reporting

- 5.1 The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.
- 5.2 The Owner shall prepare an annual performance report for the Authorized System that:
 - 5.2.1 Is submitted to the Director on or before April 30th of each year and covers the period from January 1st to December 31st of the preceding calendar year.
 - a) For clarity, the first report shall cover the period of January 1, 2023 to December 31st, 2023 and be submitted to the Director on or before April 30th, 2024.

- 5.2.2 Includes 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;
- 5.2.3 Includes a summary and interpretation of environmental trends based on all monitoring information and data for the previous five (5) years;
- 5.2.4 Includes a summary of any operating problems encountered and corrective actions taken;
- 5.2.5 Includes 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;
- 5.2.6 Includes a summary of the calibration and maintenance carried out on all monitoring equipment;
- 5.2.7 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints;
- 5.2.8 Includes 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;
- 5.2.9 Includes a summary of all spills or abnormal discharge events;
- 5.2.10 Includes a summary of actions taken, including timelines, to improve or correct performance of any aspect of the Authorized System; and
- 5.2.11 Includes a summary of the status of actions for the previous reporting year.
- 5.3 The report described in condition 5.2 shall be:
 - 5.3.1 Made available, on request and without charge, to members of the public who are served by the Authorized System; and
 - 5.3.2 Made available, by June 1st of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

6.0 Record Keeping

- 6.1 The Owner shall retain for a minimum of ten (10) years from the date of their creation:
 - 6.1.1 All records, reports and information required by this Approval and related to or resulting Alterations to the Authorized System, and
 - 6.1.2 All records, report and information related to the operation, maintenance and monitoring activities required by this Approval.
- 6.2 The Owner shall update, within twelve (12) months of any Alteration to the Authorized System being placed into service, any drawings maintained for the Municipal Stormwater Management System to reflect the Alteration of the Sewage Works, where applicable.

7.0 Review of this Approval

- 7.1 No later than the date specified in Condition 1 of Schedule A of this Approval, the Owner shall submit to the Director an application to have the Approval reviewed. The application shall, at minimum:
 - 7.1.1 Include an updated description of the Sewage Works within the Authorized System, including any Alterations to the Sewage Works that were made since the Approval was last issued; and
 - 7.1.2 Be submitted in the manner specified by Director and include any other information requested by the Director.

8.0 Source Water Protection

- 8.1 The Owner shall ensure that any Alteration in the Authorized System is designed, constructed, and operated in such a way as to be protective of sources of drinking water in Vulnerable Areas as identified in the Source Protection Plan, if available.
- 8.2 The Owner shall prepare a “Significant Drinking Water Threat Assessment Report for Proposed Alterations” for the Authorized System on or before May 31, 2024 that includes, but is not necessarily limited to:
 - 8.2.1 An outline of the circumstances under which proposed Alterations could pose a Significant Drinking Water Threat based on the Director’s Technical Rules established under the CWA.
 - 8.2.2 An outline of how the Owner assesses the proposed Alterations to identify drinking water threats under the CWA.
 - 8.2.3 For any proposed Alteration a list of components, equipment, or Sewage Works that are being altered and have been identified as a Significant Drinking Water Threat.

- 8.2.4 A summary of design considerations and other measures that have been put into place to mitigate risks resulting from construction or operation of the components, equipment, or Sewage Works identified in condition 8.2.3, such as those included in the Standard Operating Policy for Sewage Works.
- 8.3 The Owner shall make any necessary updates to the report required in condition 8.2 at least once every twelve (12) months.
- 8.4 Any components, equipment, or Sewage Works added to the report required in condition 8.2 shall be include in the report for the operational life of the Sewage Works.
- 8.5 Upon request, the Owner shall make a copy of the report required in condition 8.2 available to the Ministry or Source Protection Authority staff.

9.0 Storm Sewer Catchment Asset Inventory

- 9.1 The Owner shall prepare and submit to the Director an inventory of the storm sewersheds and classify in accordance with Tables E1 and E2, on or before May 31, 2025. Minimum classification of the level of Stormwater management is as follows:
- 9.1.1 Level A – Stormwater receives treatment for water quality and quantity prior to discharge to the environment;
- 9.1.2 Level B – Stormwater receives treatment for water quality but no water quantity prior to discharge to the environment; and
- 9.1.3 Level C – Stormwater receives no treatment for water quality prior to discharge to the environment.

Table E1. Storm Sewershed and Associated Treatment

Outlet Asset ID	Sewershed Catchment Area (ha)	Tributary or Receiver	Subwatershed/ Watershed	Stormwater Management Level (A, B or C)	Treatment provided by other municipality (if applicable)

Table E2. Summary of Storm Sewersheds

Stormwater Management Level	Total Number of Outlets to Environment	Total Sewershed Catchment Area (ha)
Level A		
Level B		
Level C		

- 9.2 Within 12 (twelve) months of the date that the inventory required in condition 9.1 is submitted to the Director, the document(s) or file(s) referenced in Table B1 of Schedule B of this Approval shall be updated to identify the storm sewersheds for each outlet and their level of Stormwater management.

Schedule F: Residue Management

System Owner	Kingston, The Corporation of the City of
ECA Number	018-S701
System Name	City of Kingston Stormwater Management System
ECA Issue Date	August 25th, 2022

1.0 Residue Management System

1.1 Not Applicable.

Appendix A – Stormwater Management Criteria

1.0 Applicability of Criteria

- 1.1
- The criteria listed under Table A1 of this Appendix applies to all drainage areas greater than 0.1 ha, with the construction erosion and sediment control criteria applying also to sites <0.1 ha;
- 1.2
- Despite condition 1.1 of Appendix A, if some or all of the criteria listed under Table A1 of this Appendix have been assessed for and addressed in other adjacent developed lands to the project site through a subwatershed plan or equivalent study, then those criteria may not be applicable to the project site.

Table A1. Performance Criteria

Water Balance ^[1]	<div>FOR DEVELOPMENT SCENARIOS ^[2] Assessment Studies:<div>i) Control ^[3] as per the criteria identified in the water balance assessment completed in one or more of the following studies ^[15], if undertaken: a watershed/subwatershed plan; Source Protection Plan (Assessment Report component); Master Stormwater Management Plan, Master Environmental Servicing Plan; Class EA, or similar approach that transparently considers social, environmental and financial impacts; or local site study including natural heritage, Ecologically significant Groundwater Recharge Areas (EGRA), inflow and infiltration strategies. The assessment should include sufficient detail to be used at a local site level and consistent with the various level of studies; OR</div>IF Assessment Studies in i) NOT completed:<div>ii) Control ^[3] the recharge ^[4] to meet Pre-development ^[5] conditions on property; OR iii) Control ^[3] the runoff from the 90th percentile storm event.</div>Lake Simcoe Watershed Municipalities:<div>iv) Control ^[3] as per the evaluation of anticipated changes in water balance between Pre-development and post-development assessed through a Stormwater management plan in support of an application for Major Development ^[6]. The assessment should include sufficient detail to be used at a local site level. If it is demonstrated, using the approved water balance estimation methods ^[7], that the site’s post to Pre-development water balance cannot be met, and Maximum Extent Possible ^[8] has been attained, the proponent may use Lake Simcoe and Region Conservation Authority’s (LSRCA) Recharge Compensation Program ^[9].</div></div> FOR RETROFIT SCENARIOS ^[10] Assessment Studies: <div>i) Control as per criteria identified in the water balance assessment completed in one or more of the following studies: a watershed/subwatershed plan, Source Protection Plan (Assessment Report component), Master Stormwater Management Plan, Master Environmental Servicing Plan,</div>
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	<p>Class EA, or local site study including natural heritage, EGRA, inflow and infiltration strategies, if undertaken. The assessment should include sufficient detail to be used at a local site level and consistent with the various level of studies; OR</p> <p>ii) If constraints ^[11] identified in i), then control ^[3] as per Maximum Extent Possible ^[8] based on environmental site feasibility studies or address local needs^[14].</p> <p>IF Assessment Studies in i) NOT completed:</p> <p>iii) Control ^[3] the recharge ^[4] to meet Pre-development ^[5] conditions on property; OR</p> <p>iv) Control ^[3] the runoff from the 90th percentile storm event.</p>
Water Quality ^[1]	<p>FOR DEVELOPMENT SCENARIOS ^[2]</p> <p>All of the following criteria must be met for development scenarios:</p> <p>General:</p> <p>i) Characterize the water quality to be protected and Stormwater Contaminants (e.g., suspended solids, nutrients, bacteria, water temperature) for potential impact on the Natural Environment, and control as necessary, OR</p> <p>ii) As per the watershed/subwatershed plan, similar area-wide Stormwater study, or Stormwater management plan to minimize, or where possible, prevent increases in Contaminant loads and impacts to receiving waters.</p> <p>Suspended Solids:</p> <p>i) Control ^[3] 90th percentile storm event and if conventional methods are necessary, then enhanced, normal, or basic levels of protection (80%, 70%, or 60% respectively) for suspended solids removal (based on the receiver).</p> <p>Phosphorus:</p> <p>i) Minimize existing phosphorus loadings to Lake Erie and its tributaries, as compared to 2018 or conditions prior to the proposed development, OR</p> <p>ii) Minimize phosphorus loadings to Lake Simcoe and its tributaries. Proponents with development sites located in the Lake Simcoe watershed shall evaluate anticipated changes in phosphorus loadings between Pre-development and post-development through a Stormwater management plan in support of an application for Major Development ^[6]. The assessment should include sufficient detail to be used at a local site level. If, using the approved phosphorus budget tool ^[12], it is demonstrated that the site's post to Pre-development phosphorus budget cannot be met, and Maximum Extent Possible ^[8] has been attained, the proponent may use LSRCA's Phosphorus Offsetting Policy ^[9].</p> <p>FOR RETROFIT SCENARIOS ^[10]</p> <p>i) Improve the level of water quality control currently provided on site; AND</p> <p>ii) As per the 'Development' criteria for Suspended Solids, OR</p> <p>iii) If 'Development' criteria for Suspended Solids cannot be met, Works are designed as a multi-year retrofit project, in accordance with a rehabilitation study or similar area-wide Stormwater study, such that the completed treatment train will achieve the 'Development' criteria for Suspended Solids or local needs^[14], within ten (10) years; OR</p>

	iv) If constraints ^[11] identified in ii) and iii), then control ^[3] as per Maximum Extent Possible ^[8] based on environmental site feasibility studies.
Erosion Control (Watershed) ^[1]	FOR DEVELOPMENT SCENARIOS ^[8] i) As per erosion assessment completed in watershed/subwatershed plan, Master Stormwater Management Plan, Master Environmental Servicing Plan, Drainage Plan, Class EA, local site study, geomorphologic study, or erosion analysis; OR ii) As per the Detailed Design Approach or Simplified Design Approach methods described in the Stormwater Management Planning and Design Manual: a. The Detailed Design Approach may be selected by the proponent for any development regardless of size and location within the watershed provided technical specialists are available for the completion of the technical assessments; or considered more appropriate than the simplified approach given the size and location of the development within the watershed and the sensitivity of the receiving waters in terms of morphology and habitat function. b. The Simplified Design Approach may be adopted for watersheds whose development area is generally less than twenty hectares AND either one of the following two conditions apply: 1) The catchment area of the receiving channel at the point-of-entry of Stormwater drainage from the development is equal to or greater than twenty-five square kilometres; or 2) Meets the following conditions: <ul style="list-style-type: none">• The channel bankfull depth is less than three quarters of a metre;• The channel is a headwater stream;• The receiving channel is not designated as an Environmentally Sensitive Area (ESA) or Area of Natural or Scientific Interest (ANSI) and does not provide habitat for a sensitive aquatic species;• The channel is stable to transitional; and• The channel is slightly entrenched; OR iii) In the absence of a guiding study, detain at minimum, the runoff volume generated from a 25 mm storm event over 24 to 48 hours. FOR RETROFIT SCENARIOS ^[10] i) If approaches i-iii) under ‘Development Scenarios’ are not feasible as per identified constraints ^[11] , then improve the level of erosion control ^[3] currently provided on site to Maximum Extent Possible ^[8] based on environmental site feasibility studies or address local needs ^[14] .
Water Quantity (Minor and Major System) ^[1]	i) As per municipal standards, Master Stormwater Management Plan, Class EA, Individual EA and/or ECA, as appropriate for the type of project ^[13]
Flood Control (Watershed Hydrology) ^[1]	FOR DEVELOPMENT SCENARIOS ^[2] i) Manage peak flow control as per watershed/subwatershed plans, municipal criteria being a minimum 100 year return storm (except for site-specific considerations and proximity to receiving water bodies), municipal guidelines and standards, Individual/Class EA, ECA, Master Plan, as appropriate for the type of project ^[13] .

	<p>FOR RETROFIT SCENARIOS ^[10]</p> <p>i) If approaches i) under ‘Development Scenarios’ are not feasible as per identified constraints ^[11], then improve the level of flood control ^[3] currently provided on site to Maximum Extent Possible ^[8] based on environmental site feasibility studies.</p>
<p>Construction Erosion and Sediment Control</p>	<p>i) Manage construction erosion and sediment control through development and implementation of an erosion and sediment control (ESC) plan. The ESC plan shall:</p> <p>a. Have regard to Canadian Standards Association (CSA) W202 Erosion and Sediment Control Inspection and Monitoring Standard (as amended); OR</p> <p>b. Have regard to Erosion and Sediment Control Guideline for Urban Construction 2019 by TRCA (as amended).</p> <p>ii) Be prepared by a QP for sites with drainage areas greater than 5 ha or if specified by the Owner for a drainage lower than 5 ha.</p> <p>iii) Installation and maintenance of the ESC measures specified in the ESC plan shall have regard to CSA W208:20 Erosion and Sediment Control Installation and Maintenance (as amended).</p> <p>iv) For sites with drainage areas greater than 5 ha, a QP shall inspect the construction ESC measures, as specified in the ESC plan.</p>
<p>Footnote</p>	<p>1. Where the opportunity exists on your project site or the same subwatershed, reallocation of development elements may be optimal for management as described in footnote ^[3].</p> <p>2. Development includes new development, redevelopment, infill development, or conversion of a rural cross-section into an urban cross-section.</p> <p>3. Stormwater volumes generated from the geographically specific 90th percentile rainfall event on an annual average basis from all surfaces on the entire site are targeted for control. Control is in the following hierarchical order, with each step exhausted before proceeding to the next: 1) retention (infiltration, reuse, or evapotranspiration), 2) LID filtration, and 3) conventional Stormwater management. Step 3, conventional Stormwater management, should proceed only once Maximum Extent Possible ^[8] has been attained for Steps 1 and 2 for retention and filtration.</p> <p>4. Recharge is the infiltration and movement of surface water into the soil, past the vegetation root zone, to the zone of saturation, or water table.</p> <p>5. Pre-development is defined as the more stringent of the two following scenarios: 1) a site’s existing condition, or 2) as defined by the local municipality.</p> <p>6. Major Development has the same meaning as in the Lake Simcoe Protection Plan, 2009.</p> <p>7. Currently, the approved tool by LSRCA for calculating the water balance is the Thornthwaite-Mather Method. Other tools agreed upon by relevant approval agencies (e.g., LSRCA, municipality, or Ministry) may also be acceptable, subject to written acceptance by the Director.</p> <p>8. Maximum Extent Possible means maximum achievable Stormwater volume control through retention and LID filtration engineered/landscaped/technical Stormwater practices, given the site constraints ^[11].</p> <p>9. Information pertaining to LSRCA’s Recharge Compensation Program and Phosphorus Offsetting Policy is available on LSRCA’s website (lsrca.on.ca), or in “Water Balance Recharge Policy for the Lake Simcoe Protection Plan”, dated July 2021, and prepared by Lake Simcoe Region Conservation Authority and “Phosphorus Offsetting Policy”, dated July 2021, and prepared by Lake Simcoe Region Conservation Authority.</p>

	<div>10. Retrofit means: 1) a modification to the management of the existing infrastructure, 2) changes to major and minor systems, or 3) adding Stormwater infrastructure, in an existing area on municipal right-of-way, municipal block, or easement. It does not include conversion of a rural cross-section into an urban cross-section.</div> <div>11. Site constraints must be documented. A list of site constraints can be found in Table A2.</div> <div>12. Tools for calculating phosphorus budgets may include the Ministry’s Phosphorus Tool, the Low Impact Development Treatment Train Tool developed in partnership by TRCA, LSRCA, and Credit Valley Conservation (CVC), or other tools agreed upon by the LSRCA and other relevant approval agencies including the municipality.</div> <div>13. Possible to look at combined grey infrastructure and LID system capacity jointly.</div> <div>14. Local needs include requirements for water quality, erosion, and/or water balance retrofits identified by the owner through ongoing operation and maintenance of the stormwater system, including inspection of local receiving systems and the characterization of issues requiring remediation through retrofit controls.</div> <div>15. All studies shall conform with Ministry policies. If any conclusions in the studies negate policy, then the project will require a direct submission to the Ministry for review through an application pertaining to a Schedule C Notice.</div>
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Table A2. Stormwater Management Practices Site Constraints

Site Constraints	
a)	Shallow bedrock ^[1] , areas of blasted bedrock ^[2] , and Karst;
b)	High groundwater ^[1] or areas where increased infiltration will result in elevated groundwater levels which can be shown through an appropriate area specific study to impact critical utilities or property (e.g., susceptible to flooding);
c)	Swelling clays ^[3] or unstable sub-soils;
d)	Contaminated soils (e.g., brownfields);
e)	High Risk Site Activities including spill prone areas;
f)	Prohibitions and or restrictions per the approved Source Protection Plans and where impacts to private drinking water wells and /or Vulnerable Domestic Well Supply Areas cannot be appropriately mitigated;
g)	Flood risk prone areas or structures and/ or areas of high inflow and infiltration (I/I) where wastewater systems (storm and sanitary) have been shown through technical studies to be sensitive to groundwater conditions that contribute to extraneous flow rates that cause property flooding / Sewer back-ups;
h)	For existing municipal rights-of-way infrastructure (e.g., roads, sidewalks, utility corridor, Sewers, LID, and trails) where reconstruction is proposed and where surface and subsurface areas are not available based on a site-specific assessment completed by a QP;
i)	For developments within partially separated wastewater systems where reconstruction is proposed and where, based on a site-specific assessment completed by a QP, can be shown to: <div>i Increase private property flood risk liabilities that cannot be mitigated through design;</div>

ii Impact pumping and treatment cost that cannot be mitigated through design; or	
iii Increase risks of structural collapse of Sewer and ground systems due to infiltration and the loss of pipe and/or pavement support that cannot be mitigated through design.	
j)	Surface water dominated or dependent features including but not limited to marshes and/or riparian forest wetlands which derive all or a majority of their water from surface water, including streams, runoff, and overbank flooding. Surface water dominated or dependent features which are identified through approved site specific hydrologic or hydrogeologic studies, and/or Environmental Impact Statements (EIS) may be considered for a reduced volume control target. Pre-consultation with the MECP and local agencies is encouraged;
k)	Existing urban areas where risk to water distribution systems has been identified through assessments to meet applicable drinking water requirements, including Procedures F-6 and F-6-1, and substantiated by a QP through an appropriate area specific study and where the risk cannot be reasonably mitigated per the relevant design guidelines;
l)	Existing urban areas where risk to life, human health, property, or infrastructure has been identified and substantiated by a QP through an appropriate area specific study and where the risk cannot be reasonably mitigated per the relevant design guidelines;
m)	Water reuse feasibility study has been completed to determine non-potable reuse of Stormwater for onsite or shared use;
n)	Economic considerations set by infrastructure feasibility and prioritization studies undertaken at either the local/site or municipal/system level ^[4] .
Footnote:	
1. May limit infiltration capabilities if bedrock and groundwater is within 1m of the proposed Facility invert per Table 3.4.1 of the LID Stormwater Planning and Design Guide (2010, V1.0 or most recent by TRCA/CVC). Detailed assessment or studies are required to demonstrate infiltration effects and results may permit relaxation of the minimum 1m offset.	
2. Where blasting is more localized, this constraint may not be an issue elsewhere on the property. While infiltration-based practices may be limited in blasted rock areas, other forms of LID, such as filtration, evapotranspiration, etc., are still viable options that should be pursued.	
3. Swelling clays are clay soils that is prone to large volume changes (swelling and shrinking) that are directly related to changes in water content.	
4. Infrastructure feasibility and prioritization studies should comprehensively assess Stormwater site opportunities and constraints to improve cost effectiveness, environmental performance, and overall benefit to the receivers and the community. The studies include assessing and prioritizing municipal infrastructure for upgrades in a prudent and economically feasible manner.	