Ontario

ENVIRONMENTAL COMPLIANCE APPROVAL
For a Municipal Stormwater Management System

ECA Number: 019-S701
Issue Number: 2

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:

Kitchener, The Corporation of the City of

200 King St P.O. Box 1118
Kitchener, ON N2G 4G7

For the following Sewage Works:

Kitchener's 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 30th day of January, 2023

Signature

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

Schedule A: System Information

System Owner	**Kitchener, The Corporation of the City of**
ECA Number	**019-S701**
System Name	**Kitchener's Stormwater Management System**
ECA Issue Date	**January 30th, 2023**

1.0 ECA Information and Mandatory Review Date

ECA Issue Date	January 30th, 2023
Application for ECA Review Due Date	April 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 Forcemains for Alterations Authorized under Environmental Compliance Approval	v.1.2 (Jan 23, 2023)

3.0 Stormwater Master Plan and Asset Management Plan

Document Title	Version
Stormwater Asset Management Plan	v.1(2020)
Integrated Stormwater Management Master Plan	2016

4.0 Operating Authority

System	Operating Authority
Municipal Stormwater Management System	The Corporation of the City of Kitchener

Schedule B: Municipal Stormwater Management System Description

System Owner	**Kitchener, The Corporation of the City of**
ECA Number	**019-S701**
System Name	**Kitchener's Stormwater Management System**
ECA Issue Date	**January 30th, 2023**

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 Kitchener's drainage area, is a separate system for stormwater (i.e., designed not to convey sanitary sewage, combined sewage) within the Grand River Watersheds. The Municipal SWM System consists of storm sewers, culverts, ditches, Stormwater Management Facilities and outlets.

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

This Municipal SWM System outlets to the Grand River.

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
Storm_Infrastructure_Map_2022_01_05	January 5, 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	47.92	--
Storm Sewers	> 250 - 500	325.54	--
Storm Sewers	> 500 - 1050	218.39	--
Storm Sewers	> 1050	49.11	--
Total Storm Sewers		--	640.96
Ditches / Swales	N/A	--	19.10
Total System Length (km)		--	660.06

Table B3. Summary of Stormwater Management Facilities by Type and Pumping Stations

Facility Type	Basic Treatment for Suspended Solids*	Normal Treatment for Suspended Solids *	Enhanced Treatment for Suspended Solids *	Other Treatment Level for Suspended Solids**	Total Quality Control	Total Quantity Control	Total Number of Facilities
LID Facilities - Retention (infiltration, evapotranspiration, harvest)							120 (right of way)
LID Facilities - Filtration							0
Stormwater Management Ponds – Wet (includes wetlands, hybrids)	12	23	16		51	56	75
Stormwater Management Ponds - Dry	4				7	26	26

Super Pipe / Storage Facility							0
Filtration MTD - Filter Unit							0
Sedimentation MTD - OGS							104
Pumping Stations							0
Other							0
Total Number of Facilities	16	23	16	0	58	82	

* 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.

Table B4. Third Pipe Collection System				
Description	Pipe Diameter (mm)	Length (km)	Quantity	System Totals
Third Pipe Sewer	Up to 250	10.53	N/A	
Third Pipe Sewer	> 250 - 500	3.06	N/A	
Third Pipe Sewer	> 500	0.48	N/A	
Total		--	--	14.07 Km
Other Infrastructure Components (e.g., storage tank)	N/A	N/A	4	4

Table B5. Sewage Works on Private Land that are part of the Municipal Stormwater Treatment Train*		
Description	Location	ECA # (if applicable)
N/A		

* 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:

650027 - Veronica Drive - SWM Facility A - Dry Pond

Location	43.43615, -80.42943: 246 Veronica Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Storm sewer to Idlewood Creek.
Outlet location	43.43957, -80.43343
Catchment Area	6.18 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None

Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	N/A
Reference Sewage Works as part of treatment train	None
Brief Description	Dry stormwater management detention area with a single flow-restricted location for the inlet and outlet that drains to Idlewood Creek.
Receive Emergency Sanitary Overflows	No
Notes	Orifice controlled outlet flows.

650027 - Veronica Drive - SWM Facility A - Dry Pond

Location	43.43615, -80.42943: 246 Veronica Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Storm sewer to Idlewood Creek.
Outlet location	43.43957, -80.43343
Catchment Area	6.18 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	None
Brief Description	Dry stormwater management detention area with a single flow-restricted location for the inlet and outlet that drains to Idlewood Creek.
Receive Emergency Sanitary Overflows	No
Notes	Orifice controlled outlet flows.

650049 – River Rd East - SWM Facility at Old Chicopee Dr – Dry Pond

Location	43.43909, -80.43357: 54 Scenic Wood Cres
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Thaler Ave Storm Sewer to Idlewood Creek
Outlet location	43.439571, -80.43343
Catchment Area	1.98 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0761-84-006
Reference Sewage Works as part of treatment train	None
Brief Description	Dry stormwater detention basin attenuates the 5-year post-development runoff to pre-development levels.
Receive Emergency Sanitary Overflows	No
Notes	ECA 3-0761-84-006 not found

650004 – Old Park Lane SWM Facility at Forest West Park - Dry Pond

Location	43.41456, -80.54729: 43 Old Park Lane
Watershed/Subwatershed	Sandrock Creek
Receiver of discharge	Existing Storm Sewer on Highview Dr to Sandrock Creek
Outlet location	43.41623, -80.52892
Catchment Area	26.54 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1354-81-826
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Pond in Block 225, S.E. of the intersection of Highview Drive and Old Peak Drive and Old Park Lane with minimum holding capacity of approximately 7,300 m^3, capable of attenuating the post development runoff from a design storm with a 100-year return period above an allowable discharge of (1.56 m3/s (55cfs).
Receive Emergency Sanitary Overflows	No
Notes	N/A

650002 – Hoddle Cres SWM Facility at Forest West Park – Wet Pond

Location	43.41333, -80.54558: 79 Sugar Maple St
Watershed/Subwatershed	Sandrock Creek
Receiver of discharge	675mm Storm Sewer to Sugar Maple St. Draining to Sandrock Creek
Outlet location	43.41623, -80.52892
Catchment Area	29 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	0107-84KT6W
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater detention adjacent to Sugar Maple Drive and Hoddle Crescent (Block 143) with permanent pool storage volume of 3,130 m3, an extended detention storage volume of 1,206 m3 and an active storage volume of 6,710 m3 during the 100- year storm event. Discharge rate of 0.04 m3/s to provide quality control and allowing for a maximum discharge rate of 0.44 m3/s during the 100-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2010

650020 – Trussler Rd SWM Facility – Dry Pond

Location	43.41080, -80.54916; 400 Ira Needles Blvd
Watershed/Subwatershed	Alder Creek
Receiver of discharge	From open swale to culvert at HWY 7/8
Outlet location	43.4155, -80.54909 43.40942, -80.54896
Catchment Area	3.8 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm, 100-yr storm
Reference ECA(s)	3-0971-86-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater detention pond located approximately 70 meters southwest of Sugar Maple/Cedar Crest Street (Block 143) with approximate storage capacity 3323 m3 and discharging capacity of 0.363 m3/s.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650059 – Manchester Rd SWM Facility - Dry Pond

Location	43.46405, -80.45205: 643 Manchester Rd
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	From swale to Kolb Creek - KD-3B
Outlet location	43.46425, -80.45161
Catchment Area	11.7 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25mm, 5-yr storm, 25-yr storm
Reference ECA(s)	3382-A8WQUM
Reference Sewage Works as part of treatment train	Three (3) enhanced greased swales along Rothsay Avenue discharging directly to Kolb Creek
Brief Description	Wetland SWM facility located at Manchester Road in Forfar Park and on Rothsay Avenue with a permanent pool storage volume of 611 m3, an extended detention volume of 964 m3, and a total storage volume of approximately 2846 m3. Capable to attenuate post-development peak flows to pre-development levels for all the storm events up to and including the 25-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2017, superseded ECA 3-0495-81-006

650054 – Edenbridge Pl SWM Facility - Wetland

Location	43.44717, -80.43306: 323 Edenbridge Pl
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Idlewood Creek
Outlet location	43.44658, -80.43236
Catchment Area	17.2 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0629-85-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	On-line stormwater detention pond between Bound Brook Crt and Edenbridge with a capacity of 1580 m3
Receive Emergency Sanitary Overflows	No
Notes	N/A

650056 – Roehampton Crt SWM Facility – Wetland

Location	43.44559, -80.43314: 190 Old Chicopee Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Idlewood Creek
Outlet location	43.44586, -80.43335
Catchment Area	4.94 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater detention pond at the northeast corner of Roehampton Court and Old Chicopee Dr with a storage capacity of 388 m3
Receive Emergency Sanitary Overflows	No
Notes	N/A

650053 – Lackner Blvd SWM Facility – Wet Pond

Location	43.44931, -80.42237: 1302 Lackner Blvd
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Storm Sewer/Culvert to Idlewood Creek
Outlet location	43.44719, -80.41687
Catchment Area	52.7 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25mm, 2-yr, 5-yr, 10-yr, 25-yr, 50-yr, 100-yr storm
Reference ECA(s)	2827-BXTMT4
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located at 1000 Lackner Boulevard, bounded by Zeller Drive to the north, Lackner Boulevard to the west and the mature deciduous woodlot to the south and east, related to the SWM Pond 10 retrofit, having a permanent pool volume of 9180 m3, an extended detention volume of 2108 m3, and a total storage volume of approximately 11288 m3 for the 100-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2018

650039 – Springmount Dr SWM Facility - Wetland

Location	43.44693, -80,42768: 27 Springmount Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Idlewood Creek
Outlet location	43.44630, -80.42736
Catchment Area	22.3 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0915-86-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Pond located approximately 210 meters south of Edenbridge Drive/Oldfield Drive. The pond has the storage capacity of 3094 m3 with a controlled overflow capable of discharging 221 L/s to Idlewood Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650003 – North Forest Trail SWM Facility – Dry Pond

Location	43.43988, -80.54185: 90 Northforest Trail
Watershed/Subwatershed	Henry Strum Creek
Receiver of discharge	Sewer to Henry Strum Creek
Outlet location	43.43740, -80.53935
Catchment Area	7.6 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	4492-8BVJHX (3-1820-86-006 – Previously)
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Pond located at 90 Northforest Trail, has the available storage volume of 2421 m3, and able to attenuate post-development peak flows to allowable levels with a maximum discharge of 1398 L/s (100-year return storm) to the existing storm sewer network.
Receive Emergency Sanitary Overflows	No
Notes	Pond retrofit in 2010

650019 – Marcon Crt SWM Facility – Dry Pond

Location	43.41373, -80.50361: 16 Marcon Crt
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Sewer to Borden Creek
Outlet location	43.41379, -80.50393
Catchment Area	0.85 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0002-87-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located at 16 Marcon Crt constructed to service the Marcon Court Subdivision, has the available storage volume of 39.35 m3 (1389.8 ft3).
Receive Emergency Sanitary Overflows	No
Notes	N/A

650062 – Biehn Dr SWM Facility – Dry Pond

Location	43.39067, -80.45578: 214 Biehn Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Swale to Strasburg Creek
Outlet location	43.39138, -80.45476
Catchment Area	13.48 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0344-87-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Retention Pond east of Biehn Drive has storage capacity 792.87 m3 and controlled discharge of 0.67 m3/s
Receive Emergency Sanitary Overflows	No
Notes	French drain which drains to groundwater table in pond

650030 – Robertson Cres SWM Facility – Dry Pond

Location	43.38824, -80.45255: 80 Robertson Cres
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.38885, -80.45157
Catchment Area	5.88 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0344-87-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Retention Pond northeast of Robertson Crescent on Block 108 has storage capacity of 495.54 m3 and controlled discharge of 0.25 m3/s.
Receive Emergency Sanitary Overflows	No
Notes	French drain which drains to groundwater table in pond.

650046 – Kilkerran Cre SWM Facility – Dry Pond

Location	43.38734, -80.45752: 93 Kilkerran Cres
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Swale to Strasburg Creek
Outlet location	43.38705, -80.45764
Catchment Area	5.88 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0344-87-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater retention pond southwest of Kilbirnie Court/ Kilkerran Crescent on Block 237 has storge capacity of 359.62 m3.
Receive Emergency Sanitary Overflows	No
Notes	French drain which drains to groundwater table in pond.

650061 – Shirley Dr SWM Facility at Stainley Park – Wet Pond

Location	43.48001, -80.42505: 2500 Shirley Dr
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	Marsh to Grand River
Outlet location	43.48016, -80.42330
Catchment Area	51.37 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	None
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	N/A
Brief Description	The stormwater pond is a water quality facility only with a sediment forebay, draining to a aquatic habitat pond immediately downstream which then drains to the Grand River.
Receive Emergency Sanitary Overflows	Yes, From Shirley Pumping Station to Pond 17.
Notes	Pond originally constructed by aggregate extraction activities on site.

650058 – Sutherland Walk SWM Facility – Wetland

Location	43.38674, -80.45000: 33 Sutherland Walk
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.38757, -80.44928
Catchment Area	6.95 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-2384-88-896
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located at 33 Sutherland Walk has the available capacity of 199 m3 to control the post development runoff to predevelopment levels during the 5-year design storm event.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650037 – Corfield Pl SWM Facility - Dry Pond

Location	43.44339, -80.41905: 69 Corfield Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Swale to Idlewood Creek
Outlet location	43.44281, -80.41874
Catchment Area	10.7 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0371-87-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater pond is located southeast of Corfield Place on Block 129, and approximately 300 meters west of Woolner Drive/Fairway Road with available storage volume of 1500 m3 as well as controlled discharge structure.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650008 – Beechcroft Pl SWM Facility - Wetland

Location	43.43144, -80.54590: 916 Woodhurst Crt
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Culvert under Victoria Street to SWMF93
Outlet location	43.43045, -80.54715
Catchment Area	7.4 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0769-89-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management pond is located at Beechwood Forest West Subdivision. Available storage volume for 5-yr storm is 715 m3 while discharging 0.3 m3/s, and 1100 m3 and 1.0 m3/s for a 100-yr storm event.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650005 – Penelope Dr SWM Facility – Wetland

Location	43.41718, -80.55402: 15 Penelope Dr
Watershed/Subwatershed	Alder Creek
Receiver of discharge	Storm sewer to Ira Needles Blvd Zone 2 SWMF Southwest of the Trussler Rd, Ira Needles Blvd roundabout
Outlet location	43.41409, -80.55419
Catchment Area	30.61 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25mm, 5-yr storm, 100-yr storm
Reference ECA(s)	9852-B9GNSQ
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater detention pond located south of the intersection of Penelope Drive and Ira Needles Boulevard. Available storage volume for a 5-yr storm is 1500 m3 with a controlled discharge capacity of 0.382 m3/s and 4340 m3 and 1.715 m3/s for a 100-year storm.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2018

650007 – Westforest Trail SWM Facility – Wet Pond

Location	43.43694, -80.54502: 146 Westforest Trail
Watershed/Subwatershed	Henry Strum Creek
Receiver of discharge	From 825mm storm pipe to Henry Strum Greenway
Outlet location	43.43730, -80.54531
Catchment Area	37 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	2732-84HK6L
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located north of Westforest Trail, adjacent to Lynnvalley Court. Permanent pool storage volume of 3407 m3 and an extended detention storage volume of 1573 m3 and an active storage volume of 9093m3 during the 100-year storm event. Maximum controlled discharge during the 5-year storm is 0.85 m3/s and 3.7m3/s during the 100-year storm.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2010

650047 – Old Huron Crt SWM Facility – Dry Pond

Location	43.39652, -80.45300: 60 Old Huron Crt
Watershed/Subwatershed	Lower Schneider Creek
Receiver of discharge	Sewer to Schneider Creek
Outlet location	43.39360, -80.43506
Catchment Area	9.71 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0230-93-006/ 3-2042-90-006 (superseded)
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located south east of Old Huron Crt having available storage capacity of 1100 m3 and two (2) 50m3 sedimentation tanks. Capable of attenuating the peak post-development flows to peak predevelopment levels of 0.467 m3/s during a 100-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650149 – Eastforest Trail SWM Facility – Wet Pond

Location	43.43053, -80.53330: 117 Eastforest Trail
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Detweiler Creek
Outlet location	43.43046, -80.53203
Catchment Area	30.1 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm, regional storm
Reference ECA(s)	3-0804-97-006
Reference Sewage Works as part of treatment train	None
Brief Description	An online stormwater detention facility located between Golden Terrace Crt and Eastforest Trail consisting of a spreader swale providing quality control with an available storage volume of 30 m^3
Receive Emergency Sanitary Overflows	No
Notes	N/A

650057 – Hidden Valley Cres SWM Facility - Unknown

Location	43.41079, -80.41935: 2081 Hidden Valley Cres
Watershed/Subwatershed	Grand River / East Side
Receiver of discharge	Swale to Grand River
Outlet location	43.41015, -80.41887
Catchment Area	16 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	None
Brief Description	Outlet channel with gabion drop structures draining to a stormwater management basin which discharges to a 300mm CSP culvert draining to a rip-rap channel to the Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650021 – Sunrise Centre SWM Facility – Wet Pond

Location	43.41722, -80.51593: 1400 Ottawa St S
Watershed/Subwatershed	Voisin Creek
Receiver of discharge	Voisin Creek
Outlet location	43.41914, -80.51575
Catchment Area	43.6 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 25-yr storm, 100-yr storm Regional storm
Reference ECA(s)	3-1423-92-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located on Ottawa 1400 Ottawa St S, consisting of a stormwater detention pond with outlet control structure to attenuate the peak post-development flows to predevelopment levels. Approximate available storage 16000 m3 with a controlled outlet structure that allows a peak post development flow of 7.5 m3/s.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650023 – Tara Cres SWM Facility at Rittenhouse Park – Dry Pond

Location	43.40617, -80.49359: 108 Tara Cres
Watershed/Subwatershed	North Strasburg Creek
Receiver of discharge	Storm Sewer to Strasburg Creek
Outlet location	43.40461, -80.48351
Catchment Area	33.35 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0897-93-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility constructed to service the Glencairn Development. Total available storage volume for a 5-year event is 6200 m3m, 0.45 m3/s of post development controlled peak flow and 4.05 m3/s uncontrolled peak flow. Total available storage for a 100-year event is 11600 m3, 0.60 m3/s post development controlled peak flow and 4.20 m3/s uncontrolled peak flow.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650031 – Inge Crt SWM Facility – Dry Pond

Location	43.47779, -80.47011: 83 Inge Crt
Watershed/Subwatershed	Grand River / Unnamed Catchment 1
Receiver of discharge	Sewer to Grand River Tributary
Outlet location	43.47851, -80.47327
Catchment Area	7.48 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm, 100-yr storm
Reference ECA(s)	3-1823-97-926
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located on the North side of Bridge Street between Tagge Street and Hallinger Crescent. A siltation control cell to control storm flows retaining approximately 500 m3. A detention cell to attenuate post-development flows to the pre-development flows, with a maximum approximate capacity of 2079 m3 for the 100-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650006 – Resurrection Dr SWM Facility – Wet Pond

Location	43.43763, -80.54771: 71 Resurrection Dr
Watershed/Subwatershed	Henry Strum Creek
Receiver of discharge	1050mm diameter Storm Sewer to Henry Sturm Creek
Outlet location	43.43687, -80.54716
Catchment Area	32.9 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	0677-84KRA5
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management system to serve the existing Beechwood Forest North Stage 2 Residential Subdivision, located on Block 116. Detention wet pond having a permanent pool storage volume of 2500 m3, an extended detention storage volume of 1329 m3 and an active storage volume of 13520 m3 during the 100–year storm event. Outlet control structure allowing/maintaining a maximum discharge of 1.6 m3/s during 5-year storm event and 5.0 m3/s during the 100-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2013

650196 – Dawn Ridge Dr Natural Pond – Basin A – Wet Pond

Location	43.42730, -80.54763: 46 Dawn Ridge Dr
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Detweiler Creek
Outlet location	43.42867, -80.54758
Catchment Area	16.7 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr, 25-yr
Reference ECA(s)	3-1215-93-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Online stormwater detention pond servicing Highland Meadows Subdivision located behind a temporary access road between Dawn Ridge Drive and Westmeadow Drive. Available storage volume of 1107 m3 to attenuate post development peak storm flows from design storm of 25-year return frequency and three (3) culverts discharging at max rate of 1360 L/s to Detweiler Greenway.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650084 – Detweiller Park SWM Facility BB at Westforest Trail - Wetland

Location	43.42727, -80.54281: 458 Bankside Dr
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Culvert to Detweiler Creek
Outlet location	43.42758, -80.54169
Catchment Area	9.1 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1215-93-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Water Quality Basin located near the southeast corner of Highland Meadows Subdivision with a storage volume of 780 m3, two (2) inlets of 600mm and 375mm diameter pipes designed to convey a maximum of 411 L/s and 96 L/s respectively, discharging to downstream storm water management basin.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650001 – Detweiller Park SWM Facility CC at Bankside Dr - Dry Pond

Location	43.42719, -80.54140: 356 Bankside Dr
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Swale to Detweiler Creek
Outlet location	43.42746, -80.54093
Catchment Area	4.4 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0463-94-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Water Quality Basin located approximately 120m east of Detweiller Park SWM Facility B with storage volume of 655 m3, discharging though a controlled outlet to the downstream storm facility.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650045 – Fairway Cres SWM Facility – Wet Pond

Location	43.44230, -80.41564: 775 Fairway Rd N
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Idlewood Creek
Outlet location	43.44293, -80.41612
Catchment Area	10 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm
Reference ECA(s)	3-0968-94-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Northeast Detention Pond located on Block 58 adjacent to Fairway Road, with available storage volume of 1537 m3. Allowing/maintaining a maximum discharge of 0.013 m3/s in an event of 2-year storm and 0.084 m3/s in a 5-year storm.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650038 – Idle Creek Dr SWM Facility – Wet Pond

Location	43.44279, -80.42052: 116 Idle Creek Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Idlewood Creek
Outlet location	43.44298, -80.42021
Catchment Area	2.41 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm
Reference ECA(s)	3-0968-94-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Northwest Detention Pod located on Block 39 adjacent to Street Three, with available storage volume of 581 m3. Allowing/maintaining a maximum discharge of 0.003 m3/s in an event of a 2-year and 5-year storm.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650022 – Orchid Cres SWM Facility – Dry Pond

Location	43.41414, -80.51368: 1445 Ottawa St S
Watershed/Subwatershed	Voisin Creek
Receiver of discharge	Culvert to Voisin Creek
Outlet location	43.41921, -80.51564
Catchment Area	6.4 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25-mm storm, 5-yr storm, 25-yr storm, 100-yr storm
Reference ECA(s)	3-0930-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Facility located on east of the intersection of Grove Drive and Ottawa Street, having an available storage volume of 2330 m3 with orifice discharge control to Voisin Greenway. Designed to provide quality control by attenuating the post-development run-off to allowable discharge rates of 0.18 m3/s, 0.44 m3/s and 0.77m3/s, during the 5, 25 and 100-year design storm events.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650018 – Watercress Crt SWM Facility - Wetland

Location	43.41158, -80.51675: 21 Watercress Crt
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Laurentian Wetland
Outlet location	43.41111, -80.51668
Catchment Area	2.5 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	3-1186-97-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility consisting of a sediment forebay and a detention pond with a storage capacity of 397 m3, discharging though a 50mm diameter orifice to an East Laurentian Wetland.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650041 – Brairmeadow Pl SWM Facility – Wet Pond

Location	43.44453, -80.42612: 134 Briarmeadow Pl
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Swale to Idlewood Creek
Outlet location	43.44411, -80.42439
Catchment Area	17.67 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm
Reference ECA(s)	3-0260-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located east of Briarmeadow Place Cul de Sac, consisting of a stormwater extended detention dead/live storage pond having an available storage volume of 1052 m3, capable of attenuate the post-development run-off to less than the pre-development rate of 0.06 m3/s and 0.24 m3/s during the 2 and 5-year design storm events.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650055 – Daimler Dr SWM Facility – Wet Pond

Location	43.44312, -80.42311: 98 Daimler Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Culvert to Idlewood Creek
Outlet location	43.44408, -80.42262
Catchment Area	28.37 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm
Reference ECA(s)	3-0260-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located southeast of the intersection of Daimler Drive and Idle Creek Drive consisting of a stormwater extended detention dead/live storage pond having an available storage volume of 10770 m3, capable of attenuate the post development run-off to less than the pre-development rate of 0.06 m3/s and 0,24 m3/s during the 2 and 5-year design storm events.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650081 – Otterbein Rd SWM Facility – Wet Pond

Location	43.46479, -80.42500: 402 Otterbein Rd
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	Swale to Kolb Creek
Outlet location	43.46503, -80.42400
Catchment Area	12.05 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0668-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located at the rear of residential lots on the west side of Forwell Road, having a maximum available storage volume of 1341 m3, discharging through a 55mm diameter orifice, allowing a maximum discharge of 195 L/s under the 5-year storm event to Kolb Creek located east of the site.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650028 – Glencliffe Crt SWM Facility – Wetland

Location	43.46326, -80.43191: 305 Keewatin Ave
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	Storm sewer to Grand River
Outlet location	43.46204, -80.42264
Catchment Area	3.82 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1039-95-977
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located at the southeast corner of Keewatin Avenue and Glencliffe Court, having an available storage capacity of 733 m3 in an event of 5-year storm and 1729 m3 in an event of a 100-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650040 – Keenwatin Ave SWM Facility at Westchester Park – Dry Pond

Location	43.46383, -80.43426: 905 Keewatin Pl
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	Storm Sewer to Grand River
Outlet location	43.46204, -80.42264
Catchment Area	6.26 ha
Level of Treatment for suspended solids	Level 2 – 70% (normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1039-95-977
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located at the southeast corner of the junction of Keewatin Avenue and Keewatin Place, having an available capacity of 733 m3 in an event of 5-year storm and 1729 m3 in an event of a 100-year storm event.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650060 – Apple Tree Crt SWM Facility – Wetland

Location	43.44322, -80.41648: 235 Apple Tree Crt
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Idlewood Creek
Outlet location	43.44280, -80.41636
Catchment Area	2.53 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm
Reference ECA(s)	3-0490-6-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located on a site at the southwest corner of Apple Tree Court. Stormwater has the available storage volume of approximately 568 m3 including 175 m3 of dead storage, discharging via an orifice and perforated riser structure, attenuating post-development run-off to the pre-development levels of approximately 0.02 m3/s and 0.06 m3/s during the 2 and 5-year design storm events.
Receive Emergency Sanitary Overflows	Yes. From Apple Tree Pumping Station to Pond 46.
Notes	N/A

650016 – Bush Clover Cres SWM Facility – Wet Pond

Location	43.41045, -80.50598: 168 Bush Clover Cres
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Swale to Borden Creek
Outlet location	43.41022, -80.50410
Catchment Area	31 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-1076-96-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located on a site west of Fischer Road and south of Bush Clover Crescent with a combined available storage volume of approximately 3401 m3, discharging through an orifice to Borden Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650016 – Bush Clover Cres S650013 – Hidden Creek Dr SWM Facility – Basin 'DD' at Westforest Trail – Wetland WM Facility – Wet Pond

Location	43.42796, -80.54291: 488 Hidden Creek Dr
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Overland Swale to Detweiler Creek
Outlet location	43.42763, -80.54239
Catchment Area	18.17 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25-mm storm, 2-yr storm, 5-yr storm
Reference ECA(s)	3-0076-98-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located on a site southeast of the intersection of Westforest Trail and Hidden Creek Drive, having an available sediment forebay volume of approximately 578 m3, 350 m3 of usable storage and a wetland cell having 1582 m3 of active detention storage and 430m3 of permanent pool storage. Discharging through an orifice to Detweiler Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650015 – Dinson Pl SWM Facility – Dry Pond

Location	43.41076, -80.50434: 1084 Fischer Hallman Rd
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Borden Creek
Outlet location	43.41083, -80.50391
Catchment Area	1.07 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0573-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Pond located south of Dinison Place on Block 8 with a storage capacity of 276.38 m3 and a control discharge outlet to the Broden Greenway Watercourse.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650014 – Highbrook Cres SWM Facility – Wetland

Location	43.41035, -80.50348: 280 Highbrook Cres
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Borden Creek
Outlet location	43.41072, -80.50352
Catchment Area	21.7 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25mm-storm, 5-yr storm, 25-yr storm, 100-yr storm
Reference ECA(s)	3-0573-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Pond located south of Ristau Crescent on Block 7 with a storage capacity of 298.39 m3 and a control discharge outlet to the Borden Greenway Watercourse.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650029 – Thomas Slee Dr SWM Facility – Wetland

Location	43.37842, -80.41452: 870 Thomas Slee Dr
Watershed/Subwatershed	Blair Creek
Receiver of discharge	Storm Sewer to Swale
Outlet location	43.37629, -80.41271
Catchment Area	11.07 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	No
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-0380-98-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility to service the Wyldwood Subdivision with a permanent pool storage of approximately 450 m3 and extended detention storage of approximately 480 m3, discharging through a control outlet with an orifice.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650064 – Pioneer Tower Rd SWM Facility - Wetland

Location	43.40304, -80.42405: 6 Black Maple Cres
Watershed/Subwatershed	Grand River / East Side
Receiver of discharge	Swale to Grand River
Outlet location	43.40166, -80.42436
Catchment Area	39 ha
Level of Treatment for suspended solids	Level 2 – 70% (normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	3-0656-98-006
Reference Sewage Works as part of treatment train	None
Brief Description	Stormwater Management Facility located on Part of Lots 12 and 12 of Beasleys Broken Front Concession, having a total available capacity of 4464 m3, capable of attenuating the post development peak discharge rates from the 5-year and 100-year design storm events, discharging 1.3 m3/s and 6.3 m3/s to the Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650042 – Candle Cres SWM Facility (Krisanderson)- Wetland

Location	43.40715, -80.40272: 150 Pioneer Tower Rd
Watershed/Subwatershed	Grand River / Unnamed Catchment 3
Receiver of discharge	Swale to Grand River
Outlet location	43.40608, -80.40522
Catchment Area	51.4 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	2416-7V4KCP
Reference Sewage Works as part of treatment train	None
Brief Description	Stormwater Management Facility located on Block 67, having a main pond of 7158 m3 permanent, 2270 m3 extended detention and approximately 11000 m3 of available storage volume to attenuate the post-development runoff to predevelopment levels for all storm events up to and including the 100-year design storm event. Discharging via an 100mm orifice eventually to Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650151 – Trillium Dr SWM Facility B - Wetland

Location	43.40079, -80.48156: 810 Trillium Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	SWMF 63: Trillium Dr – North SWM Wetland
Outlet location	43.40249, -80.48089
Catchment Area	6.4 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-1775-97-986
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located in the Huron Business Park on Lot 11, having a total storage of 1475 m3, collecting up to 100-year storm event runoff, discharging to Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650184 – Trillium Dr SWM Facility C – Wet Pond

Location	43.39894, -80.48063: 820 Trillium Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	SWMF63: Trillium Dr – North SWM Wetland
Outlet location	43.39824, -80.48015
Catchment Area	1.65 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-1775-97-986
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located in the Huron Business Park on Lot 11, having a total storage of 320 m3, collecting up to 100-year storm event runoff. Control outlet allowing a maximum discharge of 5.25 L/s to the storm sewer on Trillium Drive.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650012 – Maxwell Dr SWM Facility – Dry Pond

Location	43.39569, -80.45865: 31 Maxwell Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.39589, -80.45935
Catchment Area	2.53 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0833-85-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Pond located approximately 100 meters south of Maxwell Drive and to the west of Biehn Drive, having a storage capacity of 67.3 m3 with a controlled discharge outlet to Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650063 – Biehn Rd SWM Facility at Black Walnut Dr – Dry Pond

Location	43.39347, -80.45660: 125 Biehn Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.39267, -80.45693
Catchment Area	2.49 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3-0833-85-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Pond located approximately 100 meters south of Westerly of Maxwell Drive/Calvert Close, with storage capacity of 97 m3 with a controlled discharge outlet to Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650048 – Doon South Dr SWM Facility A at Doon Village Dr – Dry Pond

Location	43.38740, -80.42246: 50 Doon South Dr
Watershed/Subwatershed	School Creek
Receiver of discharge	School Creek
Outlet location	43.38782, -80.42321
Catchment Area	30.62 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	None
Brief Description	Stormwater management detention pond along School Creek including an outlet control structure concrete weir and gabion sediment traps upstream of the outlet
Receive Emergency Sanitary Overflows	No
Notes	N/A

650000 – Jaqueline Pl SWM Facility – Wet Pond

Location	43.42914, -80.54709: 45 Westmeadow Dr
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Storm pipe to Detweiler Creek
Outlet location	43.42907, -80.54624
Catchment Area	2.83 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25-mm storm, 2-yr storm
Reference ECA(s)	3-0240-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Pond located to the south of Westmeadow Drive opposite to Jacqueline Place, having a 25 m3 permanent pool volume and 191 m3 of storage volume. Discharging through a controlled outlet to Detweiler Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650011 – Battler Rd SWM Facility – Wet Pond

Location	43.39907, -80.46565: 1591 Strasburg Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.39907, -80.46509
Catchment Area	48.71 ha
Level of Treatment for suspended solids	None
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm, Regional storm
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	None
Brief Description	On-line flood control facility north of Battler Rd, approximately 100m east of Strasburg Rd.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650009 – Strasburg Rd SWM Facility at Mcintyre Dr – Wet Pond

Location	43.40335, -80.47334: 1400 Strasburg Rd
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.40271, -80.47185
Catchment Area	45.3 ha
Level of Treatment for suspended solids	Enhanced
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm, Regional storm
Reference ECA(s)	3213-BGSP9F
Reference Sewage Works as part of treatment train	Cooling Facility, Perforated bypass Pipe, OGS – Stormceptor EF8, CB Shields along Strasburg Road
Brief Description	Stormwater Management Facility located adjacent to McIntyre Road and Strasburg Road, having a detention volume of 1350 m3 and an overall permanent pool of approximately 12236 m3, discharging to Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2019, taken from on-line pond to off-line.

650010 – Trillium Dr SWM Facility D – Wet Pond

Location	43.39869, -80.47038: 535 Trillium Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Storm sewer to Strasburg Creek SB-13A
Outlet location	43.40008, -80.47081
Catchment Area	38.41 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm, Regional storm
Reference ECA(s)	4380-BXWTXJ
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management facility located southeast of the intersection of Trillium Drive and McBrine Drive, having a permanent pool storage volume of approximately 3830 m3, an extended detention storage volume of approximately 4496 m3, and a total storage volume of approximately 14099 m3 during 100-year storm event and 56947 m3 for the Regional event.
Receive Emergency Sanitary Overflows	No
Notes	Retrofit in 2017

650117 – Zeller Drive SWM Facility – Wetland

Location	43.44455, -80.40313: 129 Woolner Trail
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Storm pipe to Grand River
Outlet location	43.44449, -80.40292
Catchment Area	14.58 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm
Reference ECA(s)	3-0042-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located south-west of Zeller Drive, having a permanent storage volume of 473 m3, an extended detention volume of 591 m3 and a total storage volume of 4018 m3, discharging, controlled discharge outlet allowing a maximum discharge of 0.227 m3/s for the 5-year storm event, through an existing storm sewer on Zeller Drive, to Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650043 – Winding Wood Cres SWM Facility – Wetland

Location	43.38486, -80.42528: 190 Doon South Dr
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Wetland upstream of Doon Creek
Outlet location	43.38684, -80.42567
Catchment Area	12.55 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	Cooling trench at outlet
Brief Description	Wetland type stormwater detention facility sized to accommodate extended detention volumes as recommended by the Doon South Creek Subwatershed Management Plan with permanent pool volumes providing Level 2 treatment of the runoff.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650217 – Huck Cres SWM Facility – Dry Pond

Location	43.43356, -80.55270: 76 Keller Cres
Watershed/Subwatershed	Henry Strum Creek
Receiver of discharge	Henry Strum Creek
Outlet location	43.43391, -80.55303
Catchment Area	13.83 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1202-97-006
Reference Sewage Works as part of treatment train	None
Brief Description	Stormwater Management Facility located on Block 95 at 190 Doon South Dr, having a dry detention pond with a total storage volume of 7445 m3 providing attenuation to of post-development runoff to predevelopment levels during storm event up to 100-year design storm event. Controlled discharge outlet allowing to discharge 60 L/s and 392 L/s during the 5-year and 100-year design storm events.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650205 – Robert Ferrie Dr SWM Facility at Doon South Dr – Wetland

Location	43.37950, -80.43488: 553 Robert Ferrie Dr
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Doon South Creek
Outlet location	43.38024, -80.43440
Catchment Area	22.83 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	4319-5X7LBH
Reference Sewage Works as part of treatment train	Cooling Trench
Brief Description	Stormwater Management system located on Block 121 of the Doon Mills Subdivision, having a permanent storage volume of 690.5 m3, an active storage volume 2641 m3 and an additional flood storage volume of approximately 4164 m3. Controlled discharge outlet allowing a maximum discharge rate of 0.050 m3/s to Doon Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650101 – Doon South Dr SWM Facility C – Wetland

Location	43.38101, -80.43098: 404 Doon South Dr
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Doon South Creek
Outlet location	43.38215, -80.43182
Catchment Area	2.88 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	4319-5X7LBH
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management system located on Block 122 of Doon Mills Subdivision, having a permanent storage volume of 111.6 m3, an active storage volume of 387 m3 and flood storage volume of 589 m3. Controlled discharge outlet allowing a maximum discharge rate of 0.010 m3/s to a tributary of Doon Creek located northeast of this facility.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650167 – Cotton Grass St SWM Facility B – Wetland

Location	43.40733, -80.50374: 350 Cotton Grass St
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Borden Wetlands to Borden Creek
Outlet location	43.40963, -80.50405
Catchment Area	5.76 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	0072-5C6RY2
Reference Sewage Works as part of treatment train	One (1) manhole oil/grit separator – MH26 – having a sediment capacity of 23445 liter, an oil capacity of 4150 liters and a total holding capacity of 31210 liters and a maximum treated flow rate of 70 L/s, discharging to a storm sewer. One (1) manhole oil/grit separator – MH29 – having a sediment capacity of 10415 liters, an oil capacity of 2945 liters and a total holding capacity of 15195 liters and a maximum treated flow rate of 30 L/s, discharging to a storm sewer. One (1) manhole oil/grit separator – MH31 – having a sediment capacity of 6150 liters, an oil capacity of 2945 liters and a total holding capacity of 10925 liters and a maximum treated flow rate of 30 L/s, discharging to a storm sewer. Perforated pipes discharging to micropool
Brief Description	Stormwater Management Facilities located on Cotton Grass Street, having an open ditch complete with manhole outlet structure and infiltration piping discharging to Borden Wetland.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650183 – Ivy Lane Crt SWM Facility - Wetland

Location	43.42726, -80.54884: 33 Ivy Lane Crt
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Detweiler Greenway to Detweiler Creek
Outlet location	43.42772, -80.54819
Catchment Area	2.99 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	Stormceptor upstream of pond inlet (STMOGSID 3008765, 3047530)
Brief Description	Stormwater quality control provided by a combination of a Stormceptor unit and a hybrid grass swale/pond
Receive Emergency Sanitary Overflows	No
Notes	N/A

650088 – Buerkle Crt. SWM Facility – Wetland

Location	43.38693, -80.43030: 26 Buerkle Crt
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Up-welling trench to Doon South Creek
Outlet location	43.38653, -80.42918
Catchment Area	14.08 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	7412-59AP5S
Reference Sewage Works as part of treatment train	Cooling trench, perforated outfall pipe
Brief Description	Stormwater Management Pond located on Block 104 of the Doon Mills Subdivision, having a permanent storage volume of 370 m3, an active storage volume of 1,660 m3, and a total storage volume of 2,740 m3. Controlled outlet structure allows a maximum discharge rate of 0.072 m3 via perforated outfall pipe, a “cooling trench” and “up-welling trench” into an existing ditch leading to a tributary of Doon Creek South.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650091 – Doon Mills Dr SWM Facility – Wetland

Location	43.38443, -80.43053: 111 Doon Mills Dr
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Doon South Creek
Outlet location	43.38545, -80.43108
Catchment Area	4.01 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	7412-59AP5S
Reference Sewage Works as part of treatment train	Perforated Pipe, Cooling trench
Brief Description	Stormwater Management Pond located on block 105 of the Doon Mills Subdivision, having a permanent storage volume of 201 m3, an active storage volume of 1,005 m3, and a total storage volume of 2,189 m3. Controlled outlet structure allows a maximum discharge rate of 0.022 m3/s via perforated outfall pipe, a “cooling trench” into an existing swale leading to Doon Creek South.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650094 – Doon South Dr SWM Facility B at Woodsmere Dr – Wetland

Location	43.38132, -80.43021: 360 Doon South Dr
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Tributary of Doon South Creek
Outlet location	43.38216, -80.43180
Catchment Area	4.42 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	7412-59AP5S
Reference Sewage Works as part of treatment train	Perforated Pipe, Cooling trench
Brief Description	Stormwater Management Pond located on block 106 of the Doon Mills Subdivision, having a permanent storage volume of 327 m3, an active storage volume of 1,011 m3, and a total storage volume of 1796 m3. Controlled outlet structure allows a maximum discharge rate of 0.02 m3/s via perforated outfall pipe, a “cooling trench” into an existing swale leading to tributary of Doon Creek South.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650097 – Topper Woods Cres SWM Facility – Wetland

Location	43.37847, -80.43118: 471 Robert Ferrie Dr
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Topper Swamp
Outlet location	43.37940, -80.43055
Catchment Area	21.4 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	Perforated pipe, cooling trench outlet
Brief Description	“West Pond” wetland providing Normal water quality treatment prior to discharging to Topper Swamp and Doon South Creek. Receives diverted flows from the “East Pond” SWMF146 and outletting via a cooling trench.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650073 – Ottawa St S SWM Facility at David Bergey Dr – Wet Pond

Location	43.41070, -80.52410: 1720 Ottawa St S
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Storm Pipe to Laurentian Wetland
Outlet location	43.40898, -80.52015
Catchment Area	14.11 ha
Level of Treatment for suspended solids	Unknown
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm,10-yr storm; 25-yr storm, 50-yr storm, 100-yr storm, Regional storm
Reference ECA(s)	5425-52FJNT
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility serving Laurentian Village Subdivision, having a permanent pool storage of approximately 2,220 m3. and an extended storage volume of approximately 1,780 m3. Controlled outlet structure allows a maximum discharge rate of 0.70 m3/s into the West Laurentian Wetland.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650033 – David Bergey Dr SWM Facility – Basin 3 – Wet Pond

Location	43.40719, -80.51837: 180 David Bergey Dr
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Upwelling trench in Laurentian Wetland
Outlet location	43.40821, -80.51921
Catchment Area	17.8 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	3-0709-99-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Pond located on a site east of David Bergey Drive approximately 210 m north of Activa Avenue having a 2550 m3 of detention active storage, 390 m3 of permanent pool storage and a combined available storage capacity of 2940 m3. Control outlet structure allows a maximum discharge rate of 0.008 m3/s to an upwelling trench in Laurentian Wetland.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650034 – Activa Ave SWM Facility – Basin 2 – Wet Pond

Location	43.40761, -80.51504: 225 Activa Ave
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Upwelling Trench in Laurentian Wetland
Outlet location	43.40928, -80.51599
Catchment Area	32.9 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	3-0709-99-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Pond located approximately 175m north of Activa Avenue, approximately 130m west of Max Becker Boulevard having 3373 m3 of detention storage including extended detention storage and 855 m3 of permanent pool storage with a combined available storage volume of approximately 4228 m3. Control outlet structure allows a maximum discharge rate of 0.0115 m3/s to an upwelling trench in Laurentian Wetland.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650035 - Cooper Leaf St SWM Facility – Basin 1 – Wet Pond

Location	43.40709, -80.50878: 60 Copper Leaf St
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Pipe engineered channel then to Borden Wetlands
Outlet location	43.40994, -80.50386
Catchment Area	51.6 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	3-0709-99-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Pond located east of Copper Leaf Street, approximately 70m south of Wisteria Court having 7059 m3 of detention storage and 1244 m3 of permanent pool storage with a combined available storage volume of 8303 m3. Control outlet structure allows a maximum discharge rate of 0.0155 m3/s to an existing swale which discharges to the Borden Wetlands.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650051 – Old Huron Rd SWM Facility – Wetland

Location	43.39653, -80.46071: 225 Old Huron Rd
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek North Branch
Outlet location	43.39500, -80.46040
Catchment Area	25.5 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25-yr storm, 100-yr storm
Reference ECA(s)	5423-4LZHQA
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Detention Pond located between Huron Road (Old), Huron Road (New) and Battler Road, having an available storage volume of approximately 7033 m3. Control outlet structure allows a maximum discharge rate of 0.255 m3/s to the existing box culvert in the east channel of north tributary of Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650052 – Rush Meadow St SWM Facility – Wet Pond

Location	43.38940, -80.46197: 40 Rush Meadow St
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.38935, -80.45959
Catchment Area	24.5 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	Temperature
Level of Volume control	See information below
Design Storm	25-mm storm, 5-yr storm
Reference ECA(s)	2151-4RQJZE
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located on site east of the intersection of Rush Meadow Street and Anson Court, having a combined available storage volume of approximately 5402 m3. Capable to attenuate post-development runoff to pre-development levels for the 5-year design storm event. Control outlet structure allows a maximum discharge rate of 0.323 m3/s to Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650050 – Bankroft St SWM Facility – Wetland

Location	43.43968, -80.43216: 69 Bancroft St
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Storm pipe to 10m wide upwelling trench to Idlewood Creek
Outlet location	43.44109, -80.43596
Catchment Area	3.95 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1073-99-006
Reference Sewage Works as part of treatment train	N/A (OGS but located at another site)
Brief Description	Stormwater Management Facility located on Block 40, having 300 m3 of permanent pool volume and 2300 m3 total storage volume. Control outlet structure allows a maximum discharge rate of 0.016 m3/s and 0.169 m3/s for a 5-year and 100-year storm event to an upwelling trench located west of Chicopee Drive prior to discharge to Idlewood Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650044 – Centennial Crt SWM Facility – Wet Pond

Location	43.47538, -80.42603: 225 Centennial Crt
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	Grand River
Outlet location	43.47511, -80.42540
Catchment Area	9.47 ha
Level of Treatment for suspended solids	Unknown
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	Unknown
Reference Sewage Works as part of treatment train	None
Brief Description	Large sediment control pond receiving flows from Centennial Crt prior to the Grand River
Receive Emergency Sanitary Overflows	No
Notes	N/A

650032 – Riverbend SWM Facility at HWY 85 – Wet Pond

Location	43.47540, -80.48210: 498 Lancaster St W
Watershed/Subwatershed	Laurel Creek
Receiver of discharge	Storm pipe to Laurel Creek
Outlet location	43.47688, -80.48225
Catchment Area	162 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Unknown
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	3-1616-89-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located in the Lancaster Business Park on the east side of Lancaster Street and Bridgeport Road intersection, having an approximate storage capacity of 40000 m3. Control outlet structure allows a maximum discharge rate of 7.1 m3/s to storm sewer, eventually to Laurel Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650024 – Thistledown Rd SWM Facility – Wet Pond

Location	43.40504, -80.48464: 90 Erinbrook Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Culvert under Bleams Road to Strasburg Creek
Outlet location	43.40471, -80.48329
Catchment Area	70.1 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Unknown
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	6687-5PBJW5
Reference Sewage Works as part of treatment train	None
Brief Description	Wet pond with a permanent pool capacity of 3,864 m3 at a depth of 1.45m, outletting to an extended detention outlet riser and double ditch inlet catchbasin
Receive Emergency Sanitary Overflows	No
Notes	N/A

3002431 – Strasburg Rd SWM Facility B – Wetland

Location	43.39637, -80.46650: 1735 Strasburg Rd
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.39598, -80.46625
Catchment Area	34.3 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Unknown
Level of Volume control	See information below
Design Storm	25-yr storm, 100-yr storm
Reference ECA(s)	5423-4LZHQA
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located between Huron Road (New), Strasburg Road and Battler Road, having an available storage volume of approximately 24500 m3. Control outlet structure allows a maximum discharge rate of 0.343 m3/s to the west channel of north tributary of Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3002443 – Trillium Dr SWM Facility A at Washburn Dr – Wet Pond

Location	43.40196, -80.48558: 888 Trillium Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	SWMF 62 - Huron Natural Area
Outlet location	43.40228, -80.48222
Catchment Area	25.6 ha
Level of Treatment for suspended solids	Unknown
Treatment for other Contaminants, as required	Unknown
Level of Volume control	See information below
Design Storm	Unknown
Reference ECA(s)	7191-5PHNKY
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management System located at 888 Trillium Dr, having a drop structure, sedimentation pool and vegetate buffer strip, prior to discharge of stormwater into Pond No. 1A.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3002440 – Charleston Pl SWM Facility – Wetland

Location	43.44788, -80.42771: 24 Charleston Pl
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Idlewood Creek channel via 250mm pipe outlet
Outlet location	43.44632, -80.42722
Catchment Area	3.1 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	Unknown
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm
Reference ECA(s)	7714-4K5JPL
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located at 24 Charleston Pl, having 221 m3 sedimentation pond, permanent pool volume of 230 m3 and extended detention volume of 748 m3. Control outlet structure allows a maximum discharge rate of 0.035 m3/s into the manhole.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3002445 – Hearthwood Dr SWM Facility – Wet Pond

Location	43.38429, -80.45822: 372 Hearthwood Dr
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Spreader Swale to Natural Wetland then piped to Strasburg Creek
Outlet location	43.38732, -80.46081
Catchment Area	37.75 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm, 25-yr storm, 100-yr storm
Reference ECA(s)	3-1232-99-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located at 372 Hearthwood Dr, having a 2828 m3 permanent pool volume, and extended detention storage volume of 9242 m3. Discharging to wetland via two catch basins, gabion basket in upwelling trench and a spreader swale, to Strasburg Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650218 – Windale Cr SWM Facility – Dry Pond

Location	43.42041, -80.50630: 178 Windale Cres
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Storm pipe to Borden Creek
Outlet location	43.42158, -80.50294
Catchment Area	1.97 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3769-BLBSW2
Reference Sewage Works as part of treatment train	One (1) manhole oil/grit separator – having a sediment capacity of 28530 liters, an oil capacity of 10555 liters and a total holding capacity of 43538 liters and a maximum treated flow rate of 100 L/s, discharging to the Borden Greenway.
Brief Description	Stormwater Management Facility located at 178 Windale Cres, having a total active storage volume of 331 m3. Control outlet structure allows a maximum discharge rate of 0.094 m3/s for a 5-year design storm event. Discharging to storm sewer on Howe Drive to Borden Greenway.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3002236 – Ferdinand Ave SWM Facility – Wet Pond

Location	43.46200, -80.50401: 242 Waterloo St
Watershed/Subwatershed	Laurel Creek
Receiver of discharge	Storm trunk sewer
Outlet location	43.46182, -80.50452
Catchment Area	20.51 ha
Level of Treatment for suspended solids	Unknown
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	3099-7A2SN7
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located along Regional Land located north of Guelph Street, having an active storage volume of 3358 m3. Control outlet structure allows a maximum discharge of 0.15 m3/s for a 5-year design storm event. Discharging to storm sewer located north of Guelph Street.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650219 – Highgate Rd SWM Facility – Wet Pond

Location	43.43020, -80.54965: 3 Highgate Rd
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Pipe to Detweiler Creek
Outlet location	43.43045, -80.54714
Catchment Area	4.2 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1202-97-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located 3 Highgate Rd, having a wet pond with a sediment forebay providing 286 m3 of storage, extended detention volume of 687 m3. Discharging to Detweiler Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3006229 – Paige St SWM Facility – Wetland

Location	43.47544, -80.46451: 76 Paige St
Watershed/Subwatershed	Grand River / Unnamed Catchment 1
Receiver of discharge	Grand River
Outlet location	43.47118, -80.46403
Catchment Area	4.67 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25-mm storm, 5-yr storm
Reference ECA(s)	1148-6M9PWS
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located at the southeast corner of the development at the east end of Paige Street on Block 61, having a permanent pool volume of 1132 m3, extended detention volume of 1503 m3 and a total storage volume of 5395 m3. Control outlet structure discharges to Grand River Regional Floodplain.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3006822 – Veronica Dr SWM Facility B – Wetland

Location	43.44003, -80.42842: 460 Veronica Dr
Watershed/Subwatershed	Idlewood Creek
Receiver of discharge	Cooling trench to Idlewood ESPA
Outlet location	43.43995, -80.42869
Catchment Area	2.8 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1073-99-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located at 460 Veronica Drive, having 170 m3 of permanent pool volume and approximately 1400 m3 of total storage volume. Control outlet facility attenuates up to 100-year design storm event allowing a maximum discharge rate of 0.007 m3/s and 0.278 m3/s for a 5-year and 100-year design storm, respectively.
Receive Emergency Sanitary Overflows	Yes. From Bancroft Pumping Station system overflows from station to Pond 127.
Notes	N/A

3010361 – Bingeman Park SWM Facility – Wet Pond

Location	43.47596, -80.44918: 425 Bingemans Center Dr
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	Grand River
Outlet location	43.47641, -80.44973
Catchment Area	17.37 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Unknown
Level of Volume control	See information below
Design Storm	None
Reference ECA(s)	7169-586MD6
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located approximately 1.4 kilometers of municipal roadway at 1380 Veronica Street North, having permanent pool volume of 2029 m3 and an extended detention volume of 2203 m3. Control outlet structure attenuates up to 25-mm storm discharging to Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3011453 – Ridgemere St SWM Facility – Wetland

Location	43.38229, -80.43615: 247 Pine Valley Rd
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Cooling trench to Doon South Creek
Outlet location	43.38118, -80.43399
Catchment Area	4.17 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	5768-5HVSFD
Reference Sewage Works as part of treatment train	Cooling trench outlet
Brief Description	A stormwater management pond located on Block 18 of the Doon Mills Subdivision, collecting up to 5-year storm event runoff from an area of 4.17 ha conveyed to the stormwater management pond via a channel, having a permanent storage volume of 137.3 m3, and an active storage volume of 1,361 m3 complete with overflow weir, sediment forebay and outlet structure including a 200 mm diameter Hickenbottom riser complete with a 100 mm diameter orifice plate allowing a maximum discharge of 0.018 m3/s via a 200mm diameter perforated pipe in a "cooling trench" discharging laterally through clear stone to the wetland located south of this facility;
Receive Emergency Sanitary Overflows	No
Notes	N/A

3011454 – Maple Manor Crt SWM Facility – Wet Pond

Location	43.40595, -80.40438: 1 Maple Manor Crt
Watershed/Subwatershed	Grand River / Unnamed Catchment 3
Receiver of discharge	Storm pipe to unnamed intermittent creek to Grand River
Outlet location	43.40578, -80.40605
Catchment Area	3.2 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	None
Reference ECA(s)	0527-4HVHV6
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located on 1 Maple Manor Crt, having a permanent pool volume of 64 m3 and extended detention volume of 128 m3 for a 5-year storm and maximum total storage capacity of 806 m3 for a 100-year storm. Control outlet structure allows a maximum discharge rate of 0.012 m3/s for a 5-year storm and 0.455 m3/s for a 100-year storm. Discharging to adjacent watercourse and then to the Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3011593 – Pine Valley Dr SWM Facility A – Wetland

Location	43.38293, -80.43173: 125 Pine Valley Dr
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Cooling trench to Doon South Creek
Outlet location	43.38284, -80.43136
Catchment Area	6.19 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	9482-5X7L8U
Reference Sewage Works as part of treatment train	Cooling Trench
Brief Description	Stormwater Management Facility located on Block 154A of the Doon Mills Subdivision, having a permanent storage volume of 168 m3, 771 m3 active storage volume and a total peak flow storage of 1340 m3. Control outlet structure allows a maximum discharge rate of 0.016 m3/s and 0.015 m3/s to the main channel of Doon South Creek located east of this facility.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3016013 – Knox Crt SWM Faciltiy – Wetland

Location	43.38067, -80.43485: 53 Knox Crt
Watershed/Subwatershed	Doon South Creek
Receiver of discharge	Cooling trench to Doon South Creek
Outlet location	43.38102, -80.43417
Catchment Area	9.06 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	9482-5X7L8U
Reference Sewage Works as part of treatment train	Cooling Trench
Brief Description	Stormwater Management Facility located on Block 152 A of the Doon Mills Subdivision, having a permanent pools storage volume of 323 m3 and peak flow storage of 2090 m3 which include an active storage volume of 1324 m3. Control outlet structure allows a maximum discharge rate of 0.055 m3/s to the main channel of Doon South Creek located southeast of this facility.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3020373 – Cotton Grass St SWM Facility A – Wetland

Location	43.40680, -80.50523: 224 Cotton Grass St
Watershed/Subwatershed	Borden Creek
Receiver of discharge	Borden Wetlands to Borden Creek
Outlet location	43.41007, -80.50373
Catchment Area	5.76 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	Water temperature
Level of Volume control	See information below
Design Storm	5-yr storm
Reference ECA(s)	0072-5C6RY2
Reference Sewage Works as part of treatment train	Two (2) manhole oil/grit separators – MH9, MH17 – each having a sediment capacity of 10415 liters, an oil capacity of 2945 liters and a total holding capacity of 15195 liters and a maximum treated flow rate of 30 L/s, discharging to a storm sewer on Walkway between lots 16 and 17. One (1) manhole oil/grit separator – MH26 – having a sediment capacity of 23445 liter, an oil capacity of 4150 liters and a total holding capacity of 31210 liters and a maximum treated flow rate of 70 L/s, discharging to a storm sewer.
Brief Description	Stormwater Management Facilities located on Cotton Grass Street, having an open ditch complete with manhole outlet structure and infiltration piping discharging to Borden Wetland.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3023561 – Farrier Pl SWM Facility – Wet Pond

Location	43.39792, -80.43627: 58 Farrier Pl
Watershed/Subwatershed	Schneider Creek
Receiver of discharge	Schneider Creek
Outlet location	43.39779, -80.43584
Catchment Area	Not found
Level of Treatment for suspended solids	Not found
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	Not found
Reference ECA(s)	3-1632-95-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located east of Schneider Creek, having a storage volume of approximately 700 m3, discharging to Schneider Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3024161 – Wabanaki Dr North SWM Facility – Wet Pond

Location	43.41785, -80.43385: 975 Wabanaki Dr
Watershed/Subwatershed	East Side
Receiver of discharge	Hidden Valley Creek
Outlet location	43.41876, -80.43398
Catchment Area	2.4 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm, 100-yr storm
Reference ECA(s)	7280-59VMZ2
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater management Facility located in the city land adjacent to Wabanaki Drive, having a permanent pool of 335 m3, 1206 m3 of extended storage and 637 m3 flood attenuation storage volume with approximately 2178 m3 total storage volume. Control outlet structure discharges into the stilling basin that outlets into the existing drainage ditch.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3024162 – Wabanaki Dr South SWM Facility – Wet Pond

Location	43.41210, -80.43352: 875 Wabanaki Dr
Watershed/Subwatershed	East Side
Receiver of discharge	Storm pipe to Hidden Valley Creek
Outlet location	43.41876, -80.43398
Catchment Area	23.32 ha
Level of Treatment for suspended solids	Level 1 – 80% (Enhanced)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	2-yr storm, 5-yr storm, 100-yr storm
Reference ECA(s)	4696-8BSLAU
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located on the east side of the Wabanaki Drive Stage 2 extension and approximately 360 m south of Goodrich Drive, having a permanent storage volume of 4945 m3, an extended detention storage volume of 2426 m3 and a total active storage volume of 7469 m3. Control outlet structure allows a maximum discharge of 0.44 m3/s for a 100-year design storm event. Discharging to Hidden Valley Wetland and ultimately to the Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3027234 – Sabrina Cres SWM Facility – Dry Pond

Location	43.38836, -80.44535: 31 Sabrina Cres
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Tilt's Bush to Strasburg Creek
Outlet location	43.38739, -80.44493
Catchment Area	Not found
Level of Treatment for suspended solids	Not found
Treatment for other Contaminants, as required	Not found
Level of Volume control	See information below
Design Storm	Not found
Reference ECA(s)	Not found
Reference Sewage Works as part of treatment train	None
Brief Description	Stormwater detention area south of Sabrina Cres receiving drainage from a 750mm inlet pipe and dissipates through 5, 375mm culverts discharging to Tilt's Bush and eventually to Schneider Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3027241 – Anvil St SWM Facility – Dry Pond

Location	43.38884, -80.44286: 117 Anvil St
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Tilt's Bush to Strasburg Creek
Outlet location	43.38782, -80.44205
Catchment Area	Not found
Level of Treatment for suspended solids	Not found
Treatment for other Contaminants, as required	Not found
Level of Volume control	See information below
Design Storm	Not found
Reference ECA(s)	Not found
Reference Sewage Works as part of treatment train	None
Brief Description	Stormwater detention area south of Anvil St receiving drainage from a 1200mm inlet pipe and dissipates through 7, 375mm culverts discharging to Tilt's Bush and eventually to Schneider Creek.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3028234 – Winfred St SWM Facility – Wetland

Location	43.41066, -80.40709: 48 Winfred St
Watershed/Subwatershed	East Side
Receiver of discharge	Bermed Wetland
Outlet location	43.41066, -80.40757
Catchment Area	3.88 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25-mm storm, 2-yr storm, 5-yr storm, 100-yr storm
Reference ECA(s)	5622-5BJJQV
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located on 48 Winifred St, having a permanent pool volume of 99 m3, an extended detention volume of approximately 419 m3 and a maximum storage capacity of 1092 m3 for a 100-year design storm event. Control outlet structure allows a maximum discharge rate of 2.2 L/s to the ditch inlet catch basin, eventually to Bermed Wetland.
Receive Emergency Sanitary Overflows	No
Notes	N/A

650036 – Victoria St. S. SWM Facility A – Wetland

Location	43.43054, -80.54664
Watershed/Subwatershed	Detweiler Creek
Receiver of discharge	Detweiler Creek
Outlet location	43.429296, -80.545608
Catchment Area	4.54 ha
Level of Treatment for suspended solids	Level 3 – 60% (Basic)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1371-97-006
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility located on the south side of Victoria St. S Stage 2 extension and approximately 150 m east of Highgate Rd, having a permanent storage volume of 90.8 m3, an extended detention storage volume of 182 m3 and a total active storage volume of 278 m3. Control outlet structure allows a maximum discharge of 1.594 m3/s for a 100-year design storm event. Discharging to Detweiler Creek and ultimately to the Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3016066 – Lookout Lane SWM Facility– Wetland

Location	43.39925, -80.41464
Watershed/Subwatershed	Grand River
Receiver of discharge	Grand River
Outlet location	43.398811, -80.415150
Catchment Area	27.4 ha
Level of Treatment for suspended solids	Level 2 – 70% (Normal)
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	25-mm storm
Reference ECA(s)	4209-5VTS4H
Reference Sewage Works as part of treatment train	N/A
Brief Description	Stormwater Management Facility for the Vista Ridge Subdivision located 125 m south of the end of Lookout Ln, and east of the Walter Bean Trail, having a permanent storage volume of 822 m3, an extended detention storage volume of 1096 m3 and a total active storage volume of 1918 m3. Discharging to the Grand River.
Receive Emergency Sanitary Overflows	No
Notes	N/A

3042994 – Huntington Pl SWM Facility - Dry Pond

Location	43.44383, -80.53359: 19 Huntington Pl
Watershed/Subwatershed	Henry Strum Creek
Receiver of discharge	Storm pipe to Westmount Creek
Outlet location	43.44779, -80.51290
Catchment Area	3.513 ha
Level of Treatment for suspended solids	Not Found
Treatment for other Contaminants, as required	None
Level of Volume control	See information below
Design Storm	5-yr storm, 100-yr storm
Reference ECA(s)	3-1015-99-006
Reference Sewage Works as part of treatment train	Exfiltration Trench (STMSUBSURFACEFACILITYID – 3042996)
Brief Description	Stormwater Management Facility located on Block 24, having a maximum storage volume of 340 m3 during the 100-year storm event. Control outlet structure allows a maximum discharge of 0.094 m3/s and 0,395 m3/s for a 5-year and 100-year design storm events respectively. Discharging to the existing storm sewer located on Westwood Drive.
Receive Emergency Sanitary Overflows	No
Notes	N/A

Stormwater Pumping Stations

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

[Stormwater Pumping Station Name]

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.

Brigadoon

Asset ID and Name	Brigadoon
Location	43.3893197529689, -80.46262080573347
Watershed/Subwatershed	South Strasburg / Middle Strasburg
Receiver of discharge	Strasburg Creek
Outlet location	43.389847, -80.460720
Catchment Area	24.5 ha
Treatment, if applicable	Basic – Rush Meadow SWMF
Reference ECA(s), if applicable	4979-6F6LAL
Brief Description	Groundwater collection system connected to residences by service lines
Notes	2005

Williamsburg South

Asset ID and Name	Strasburg – Middle Strasburg
Location	43.401521, -80.500386
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Ditch on Bleams Road
Outlet location	43.400872, -80.499925
Catchment Area	35.84 ha
Treatment, if applicable	Level 1 Enhanced – SWMF 74, Helena Feasby
Reference ECA(s), if applicable	3569-6HDNMU, 7182-6HGJRU
Brief Description	Groundwater collection system connected to residences by service lines
Notes	2005

Strasburg – South Strasburg Direct

Asset ID and Name	Strasburg – South Strasburg direct
Location	43.388283, -80.461240
Watershed/Subwatershed	Strasburg Creek
Receiver of discharge	Strasburg Creek
Outlet location	43.388283, -80.461240
Catchment Area	24.5 ha
Treatment, if applicable	No Treatment
Reference ECA(s), if applicable	N/A
Brief Description	Groundwater collection system connected to residences by service lines
Notes	2001-2016

Doon Creek Subdivision

Asset ID and Name	Doon Creek
Location	43.379349, -80.440313
Watershed/Subwatershed	Doon Creek
Receiver of discharge	Doon South Creek
Outlet location	43.379646, -80.440048
Catchment Area	21.63ha
Treatment, if applicable	Level 1 Enhanced – SWMF 122, Forest Creek Dr
Reference ECA(s), if applicable	2691-7VPL23
Brief Description	Stormwater collection system connected to residences by service lines
Notes	2005

Chalon Estates

Asset ID and Name	Chalon Estates
Location	43.385900, -80.450763
Watershed/Subwatershed	Doon South
Receiver of discharge	N/A
Outlet location	Re-infiltrated, 43.386308, -80.449496
Catchment Area	4.41ha
Treatment, if applicable	Level 1 – Enhanced, Evenstone SWMF 187
Reference ECA(s), if applicable	Permit to take water # 1782-9EHSDJ 9264-8V6L6M 8527-8VNKMH
Brief Description	Stormwater collection system connected to residences by service lines
Notes	2012

Chalon Estates South Subdivision

Asset ID and Name	None
Location	43.378613, -80.449885
Watershed/Subwatershed	Doon Creek
Receiver of discharge	Doon Creek
Outlet location	43.379571, -80.448555
Catchment Area	17.9 ha
Treatment, if applicable	Level 1 Enhanced – SWMF 166, Chapel Hill SWMF
Reference ECA(s), if applicable	5964-B4WQ8C
Brief Description	Stormwater collection system connected to residences by service lines
Notes	2018

Sandra Springs Subdivision (block 93)

Asset ID and Name	Sandra Springs Subdivision (block 93)
Location	43.46882032 -80.4335209 Located on Block 93 within the stormwater management facility
Watershed/Subwatershed	Kolb Creek
Receiver of discharge	Kolb Creek
Outlet location	43.46907328361809, -80.43430195275917
Catchment Area	22.08ha
Treatment, if applicable	Level 1 - Enhanced, Sandra Spring SWMF
Reference ECA(s), if applicable	3164-BF8QNK
Brief Description	ROW groundwater collection system on Otterbein Road and around the SWM pond

Notes	2019

Grand River Slope Stabilization GWCS

Asset ID and Name	Grand River Slope Stabilization
Location	43.432975, -80.409807
Watershed/Subwatershed	Grand River
Receiver of discharge	Grand River
Outlet location	43.433828, -80.409946
Catchment Area	N/A
Treatment, if applicable	No treatment
Reference ECA(s), if applicable	0604-8HGFWE
Brief Description	Groundwater collection system installed during the Grand River Slope Stabilization project
Notes	2011

Grand River South – Lyndale Estates

Asset ID and Name	Grand River South
Location	43.449278, -80.407864
Watershed/Subwatershed	Idlewood Creek/Grand River
Receiver of discharge	Grand River
Outlet location	43.444051, -80.401518
Catchment Area	36.28 ha
Treatment, if applicable	Level 1 – Enhanced, Colton SWMF 118
Reference ECA(s), if applicable	Not Found
Brief Description	Stormwater collection system connected to residences by service lines
Notes	2005

Grand River South – Grand River Flats Subdivision

Asset ID and Name	Grand River Flats
Location	43.450761, -80.400957
Watershed/Subwatershed	Idlewood Creek/Grand River
Receiver of discharge	Grand River
Outlet location	43.447170, -80.393991
Catchment Area	Not found
Treatment, if applicable	Grand River Flats SWMF 180, No SWM report found
Reference ECA(s), if applicable	6540-9BVQSD, 3478-AA5L78

Brief Description	Stormwater collection system connected to residences by service lines
Notes	2005

Trillium Community

Asset ID and Name	None
Location	43.385392, -80.499932
Watershed/Subwatershed	Alder Creek/Strasburg Creek
Receiver of discharge	Re-infiltration into groundwater
Outlet location	43.384535, -80.500404
Catchment Area	25.5 ha
Treatment, if applicable	Level 1 Enhanced – Amand Drive SWMF 161
Reference ECA(s), if applicable	Not found
Brief Description	Stormwater collection system connected to residences by service lines
Notes	2016

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

Pond #	Asset ID	Type of Facility	Location	ECA Number	Developer Name
068	650173	Wetland	43.43492, -80.55283	1764-66VKB6	Sunvest Development Corp.
071	650137	Wetland	43.42663, -80.55142	UNKNOWN	1071745 Ontario Ltd.
074	650077	Wet Pond	43.40154, -80.50037	4434-5NTHQW	2014707 Ontario Inc.
077	650178	Wetland	43.42635, -80.54763	6171-5V9KZM	Sunvest Development Corp.
079	650122	Wetland	43.38565, -80.46950	1705-8GWQ5P	Primeland Developments (2003) Ltd.
084	650157	Wet Pond	43.45532, -80.40285	2724-8H7QTY	Hallman Construction Ltd.
085	650162	Wet Pond	43.45564, -80.40954	2883-6TJNFT	Hallman Construction Ltd.
086	650106	Wetland	43.49331, -80.47609	8452-4WCHTZ	Roadway Operations and Maintenance Corporation of Ontario Inc. (formerly Southstation Holdings Ltd.)

087	650111	Wetland	43.49758, -80.47021	8452-4WCHTZ	Roadway Operations and Maintenance Corporation of Ontario Inc. (formerly Southstation Holdings Ltd.)
088	650142	Wetland	43.41656, -80.46043	9560-5T9JZW	Drewlo Holdings Inc.
099	650216	Wetland	43.38734, -80.48189	3390-5Z5JXU	Activa Holdings Inc.
115	650221	Wet Pond	43.40431, -80.52232	7200-762KT3	970722 Ontario Inc.
117	650215	Wetland	43.38960, -80.47623	8436-6SVPZ2	Activa Holdings Inc.
118	3001659	Wet Pond	43.44827, -80.40580	4177-5J9K6F	Lyndale Estates Inc.
121	650214	Wetland	43.42030, -80.46344	5107-8H6RGM	Drewlo Holdings Ltd.
122	3006162	Wet Pond	43.37932, -80.44042	2691-7VPL23	LVH Developments (DC) Inc.
123	650068	Wetland	43.43913, -80.41269	0451-76CJBY	Valley View Heights (St.Jacobs) Ltd.
124	650132	Unknown	43.43220, -80.55727	3683-7FZMFN	INCC Corp (The Boardwalk)
131	3006818	Wet Pond	43.41177, -80.42855	0887-6RNHBX	Hidden Valley Kitchener Ltd.
133	3002784	Wetland	43.41695, -80.45950	9560-5T9JZW	Drewlo Holdings Ltd.
134	3001479	Wetland	43.39109, -80.47550	4473-7HPJFK	Activa Holding Inc.
135	3003466	Wetland	43.38550, -80.43266	9482-5X7L8U	Mattamy Homes Ltd.
136	3002768	Wetland	43.41444, -80.46068	3285-5THHXR	Drewlo Holdings Inc.
139	3008457	Wetland	43.37606, -80.43832	8503-88NRKN	Hallman Construction Ltd.

146	3011455	Wet Pond	43.37781, -80.42384	8567-C89PSH	Mattamy Homes Ltd.
149	3013493	Dry Pond	43.37396, -80.42174	6849-8TUQZ2	Mattamy Homes Ltd.
154	3017177	Wetland	43.38338, -80.46805	3553-98JK4L	Primeland Developments (2003) Ltd.
155	3017613	Wetland	43.37500, -80.43977	8338-8P9RTQ	Activa Holdings Inc.
156	3019681	Wet Pond	43.38599, -80.49070	0328-98RLS8; 6710-A2TPBM	Mattamy Homes Ltd.
158	3046875	Wet Pond	43.38122, -80.47309	3553-98JK4L	Primeland Developments (2003) Ltd.
160	3023144	Unknown	43.37511, -80.41803	5800-AFCPJ2	Activa Holdings Inc.
161	3047530	Wet Pond	43.38561, -80.50075	9296-ACBL7Y	Mattamy Homes Ltd.
162	3023148	Unknown	43.36997, -80.44027	2642-9VLNPR	Activa Holdings Inc.
163	3023146	Unknown	43.36754, -80.44222	2642-9VLNPR	Activa Holdings Inc.
165	3023149	Unknown	43.37161, -80.43071	4904-AKBQCW	Mattamy Homes Ltd.
166	3055761	Wetland	43.37941, -80.44813	9280-AR4HD9; 5964-B4WQ8C	Chalon Estates Inc.
167	3061267	Wet Pond	43.37986, -80.47921	5116-AYELUQ	Schlegel Urban Developments Corp.
172	3023302	Unknown	43.38172, -80.49896	2830-9NSSUQ	2040796 Ontario Ltd. & Tru-Villa Inc.
173	3060953	Unknown	43.37059, -80.43305	6110-98BPHV	Hallman Construction Ltd.
180	3028355	Wet Pond	43.44948, -80.39679	5019-9G4S3T	Grand River Conservation Authority & Rockway Holdings Ltd.
181	3060197	Wet Pond	43.46873, -80.43479	3164-BF8QNK	Wm. J. Gies Construction Ltd.
182	3031994	Unknown	43.41514, -80.46216	UNKNOWN	Drewlo Holdings Inc.

184	3032396	Unknown	43.38383, -80.44399	UNKNOWN	Hallman Construction Ltd.
185	3042186	Dry Pond	43.37276, -80.42598	5108-9J3VM8	Mattamy Homes Ltd.
187	3059348	Wetland	43.38582, -80.44959	UNKNOWN	Chalon Estates Inc.
188	3049012	Wet Pond	43.40519, -80.45382	9519-AHJNA3	1869071 Ontario Ltd.
189	3049973	Wetland	43.49274, -80.47982	0416-955JJG	Activa Holdings Inc.
198	3062287	Wet Pond	43.40191, -80.53941	UNKNOWN	Activa Holdings Inc.
199	3056121	Unknown	43.40435, -80.54221	UNKNOWN	Activa Holdings Inc.
200	3058421	Wet Pond	43.42728, -80.55407	UNKNOWN	Region of Waterloo

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	**Kitchener, The Corporation of the City of**
ECA Number	**019-S701**
System Name	**Kitchener's Stormwater Management System**
ECA Issue Date	**January 30th, 2023**

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	**Kitchener, The Corporation of the City of**
ECA Number	**019-S701**
System Name	**Kitchener's Stormwater Management System**
ECA Issue Date	**January 30th, 2023**

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 Forcemains 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 Separators;

“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 Kitchener, 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 notices 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; or

3.1.2 Serving a single parcel of land, unless the stormwater management facility is located on a municipally owned park or community center.

3.2 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 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.

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 shall ensure on-going operation and maintenance of the Privately Owned Stormwater Works;

d) The Owner ensures on-going operation and maintenance of the Privately Owned Stormwater Works; and

e) 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 Stormwater management 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 condition 4.1.7, 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 January 31, 2024.

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	**Kitchener, The Corporation of the City of**
ECA Number	**019-S701**
System Name	**Kitchener's Stormwater Management System**
ECA Issue Date	**January 30th, 2023**

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.

vi Presence of algae and/or invasive species impairing the Works (e.g., phragmites, goldfish).

vii Measurements of sediment depth, manual water levels (staff gauge) and/or visual observations, and

viii 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 20, 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 criteria, the frequency of inspection, and the methods or tests employed to detect when maintenance is necessary;

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 SAC, 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.

3.2.2 The Owner shall review and update the O&M Manual and ensure that access to a copy is available at 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 20, 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 20, 2024 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 November 20, 2023 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 20, 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	**Kitchener, The Corporation of the City of**
ECA Number	**019-S701**
System Name	**Kitchener's Stormwater Management System**
ECA Issue Date	**January 30th, 2023**

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]	**FOR DEVELOPMENT SCENARIOS** [2] **Assessment Studies:** 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 **IF Assessment Studies in i) NOT completed:** 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. **Lake Simcoe Watershed Municipalities:** 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]. **FOR RETROFIT SCENARIOS** [10] **Assessment Studies:** 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,

	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** 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]. **IF Assessment Studies in i) NOT completed:** iii) Control [3] the recharge [4] to meet Pre-development [5] conditions on property; **OR** iv) Control [3] the runoff from the 90th percentile storm event.
Water Quality [1]	**FOR DEVELOPMENT SCENARIOS** [2] All of the following criteria must be met for development scenarios: **General:** 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** 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. **Suspended Solids:** 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). **Phosphorus:** i) Minimize existing phosphorus loadings to Lake Erie and its tributaries, as compared to 2018 or conditions prior to the proposed development, **OR** 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]. **FOR RETROFIT SCENARIOS** [10] i) Improve the level of water quality control currently provided on site; **AND** ii) As per the 'Development' criteria for Suspended Solids, **OR** 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**

	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: • 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].

	FOR RETROFIT SCENARIOS [10] 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.
Construction Erosion and Sediment Control	i) Manage construction erosion and sediment control through development and implementation of an erosion and sediment control (ESC) plan. The ESC plan shall: a. Have regard to Canadian Standards Association (CSA) W202 Erosion and Sediment Control Inspection and Monitoring Standard (as amended); OR b. Have regard to Erosion and Sediment Control Guideline for Urban Construction 2019 by TRCA (as amended). 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. 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). iv) For sites with drainage areas greater than 5 ha, a QP shall inspect the construction ESC measures, as specified in the ESC plan.
Footnote	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]. 2. Development includes new development, redevelopment, infill development, or conversion of a rural cross-section into an urban cross-section. 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. 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. 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. 6. Major Development has the same meaning as in the Lake Simcoe Protection Plan, 2009. 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. 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]. 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.

	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. 11. Site constraints must be documented. A list of site constraints can be found in Table A2. 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. 13. Possible to look at combined grey infrastructure and LID system capacity jointly. 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. 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.

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: i Increase private property flood risk liabilities that cannot be mitigated through design; 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 is 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: 16. 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. 17. 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. 18. Swelling clays are clay soils that is prone to large volume changes (swelling and shrinking) that are directly related to changes in water content. 19. 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.