FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT

3575 Kaneff Crescent

City of Mississauga

Prepared for

Kaneff Developments

Project #: 20-632

1st Submission (Zoning) – May 2020
2nd Submission (Zoning) – April 2022
3rd Submission (Zoning) – October 2022
4th Submission (Zoning) – June 2023

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1. INTRODUCTION

1.1 Background

Urbantech has been retained to prepare a Functional Servicing Report / Stormwater Management Report for an official plan and zoning by-law amendment application for 3575 Kaneff Crescent (hereafter referred to as the "subject lands" or "site"). The site is located at southeast corner of Mississauga Valley Drive and Kaneff Crescent in the City of Mississauga.

The legal description of this property Plan of Topography of Peel Condominium Plan 265, Condo Block 19265, Part 6, 7, 8, 9, and part of part 10 (Plan 43R-4627) as shown on the Survey by Tarasick, McMillan, Kubicki Limited dated November 2019.

This report reviews offsite servicing capacities and provides functional servicing design and stormwater management information for the proposed development. The proposed site grading, site servicing and stormwater management designs are in accordance with accepted engineering practices, as well as, both City of Mississauga and Region of Peel standards and specifications.

1.2 Subject Site

The site is approximately 0.27 ha in size and is currently occupied by an existing parking lot space. The site is bounded by Mississauga Valley Boulevard to the north, Obelisk Way to the south, Kaneff Crescent to the east and Elm Drive to the west. The site is in the jurisdiction of the Credit Valley Conservation Authority and is within the Cooksville Creek watershed.

1.3 Proposed Development

The proposed works include redeveloping the subject lands with a 40 storey, 467-unit residential development with underground parking areas and associated water, storm and sanitary servicing. Vehicle access to the building, loading bay and underground parking is proposed as a single two- way access off of Kaneff Crescent.

2. GRADING DESIGN

2.1 Design Standards

The proposed grading design for the site takes into consideration the following requirements and constraints:

1. Conforms to the City of Mississauga design criteria.
2. Match existing boundary lot and road grading conditions to be compatible with adjacent streets.
3. Minimizes the need for retaining walls.
4. Provides appropriate cover on proposed servicing.
5. Ensures compatibility of driveway access to surrounding public streets.

2.2 Grading Design

A grading plan for the subject property has been prepared in conjunction with the storm, sanitary, and water servicing system design for the subject development.

Drawing C201 illustrates the proposed grading plan for the site.

Landscaped areas are proposed around the perimeter of the site and have been graded to collect local drainage with area drains and direct it to the proposed stormwater tank. The site and landscaped area grading have been designed to match the existing perimeter grades to minimize disturbance to the existing boundaries. Please refer to **Drawings C201** and **C202** for Grading Plan and Sections.

3. STORM DRAINAGE AND STORMWATER MANAGEMENT

3.1 Existing Storm Servicing

Underground services on Elm Drive consist of a trunk storm sewer (2550 mm) which conveys flow east to Cooksville Creek. Flows within the site are captured at one internal low point via an existing double catch basin inlet. Flows are then conveyed to a 300 mm diameter storm sewer that connects to a 375 mm storm sewer service connection within the ROW before finally connecting to the Elm Drive Trunk Sewer. Existing landscaped area around site perimeter currently runs off uncontrolled to the street and no external drainage enters the subject property. **Table 3-1** below outlines the area and runoff coefficients for the property under existing conditions.

Table 3-1: Existing Area Breakdown and Runoff Coefficients

	Drainage Area (m^2)	Runoff Coefficient C*	Outlet Location
Parking Lot Paved Area	1348	0.90	Ex STM Sewer Connection
Grass	557	0.25	Ex STM Sewer Connection
Overall Parking Lot Site	**1905**	**0.70**	Ex STM Sewer Connection
Grassed area to ROW	833	0.25	Uncontrolled Runoff to ROW
Total	**2738**		

* Runoff Coefficients per City of Mississauga Guidelines

Refer to **Drawing C301** for the Pre- Development Drainage Plan for the existing site drainage area details.

3.2 Proposed Storm Servicing

The storm drainage concept for the site has been designed to maintain flows and contributing drainage areas to the existing outlets on the site as described in **Section 3.1**. The release rate to the municipal storm system from the existing development is based on the 2-year peak flow rate, applying a maximum runoff coefficient of 0.5 for the pre-development areas. This was found to be 33 L/s. Under proposed conditions, flows from the subject lands will be captured at low points within the site and conveyed to the stormwater tank within underground parking level 1, then through the underground parking lot into EX. MH11. The existing structures within the site will be removed.

A weighted runoff coefficient of 0.77 was used to calculate proposed flows. Refer to **Drawing C302** - Post - Development Drainage Plan for the proposed site for drainage area details and **Drawing C101** - Site Servicing Plan shows details on proposed service connections.

Table 3-2: Proposed Area breakdown and runoff coefficient

	Drainage Area (m^2)	Runoff Coefficient C*	Outlet Location
Impervious Surfaces	2028	0.90	Ex STM Sewer Connection
Landscaped Area	515	0.25	Ex STM Sewer Connection
Overall Site	**2543**	**0.77**	Ex STM Sewer Connection
Impervious Surfaces	123	0.90	Uncontrolled Runoff to Street

*Runoff Coefficients per City of Mississauga Guidelines

Under proposed conditions, additional lands are being dedicated to the ROW along Obelisk Way per discussion with the City which resulted in a decrease in the total proposed area.

3.3 Stormwater Management

3.3.1 Quantity Control

As mentioned in **Section 1.2** the site is located within the Cooksville Creek and City of Mississauga has standards in place where the post-development flow has to be controlled to the 2-year pre- development rates for areas draining to the minor system. A PCSWMM model was developed to determine the flows for the existing and proposed site conditions. The 2-year and 100-year design storm event flows were calculated by running the Chicago 4-hour storm, using the rainfall intensity equation: I (mm / hr) = A / $(T+B)^C$, where T is the Time of Concentration in minutes. The values for the A, B and C for the storms were obtained from the latest Engineering Design Criteria from the City of Mississauga.

The existing condition flows from the subject site using the runoff coefficient for the existing land use and 0.5 per City of Mississauga guidelines are shown in **Table 3-3**.

Table 3-3: Existing Conditions flows

Outlet Point	Drainage Area (ha)	Runoff Coefficient	Description	Existing Condition Flows L/s Return Period (Years) 2	100**
Existing Condition	0.19	0.7	Conveyed to existing STM network via CB's	40	127
Existing Condition	0.08	0.25	Drains to street uncontrolled	8	52
			Total	48	179
Existing Condition	0.19	0.5*	Conveyed to existing STM network via CB's	**25**	102
Existing Condition	0.08	0.25	Drains to street uncontrolled	**8**	52
			Total	**33** (target for post-development conditions)	154

* RC of 0.5 used for target flow calculation per City of Mississauga guidelines

** Per City of Mississauga guidelines, a 1.25 adjustment factor is incorporated in calculating the 100-year flow

A 100.6 m^3 stormwater tank is proposed within the underground parking structure with a 90 mm orifice to provide the quantity control needed to meet the pre-development 2-year target. Refer to **Table 3-4** below for the proposed flow and storage.

Table 3-4: Proposed Conditions Flow and Storage

Outlet Point	Drainage Area (ha)	Runoff Coefficient	Description	Proposed Condition Flows L/s Return Period (Years) Target	100*	Required Storage (m^3)
Proposed Condition	0.2543	0.77	Collected on Site and outlets into EX. MH 11	-	23	94
Proposed Condition	0.0123	0.9	Drains to street uncontrolled	-	8	-
			Total	33	31	94

* Per City of Mississauga guidelines, a 1.25 adjustment factor is incorporated in calculating the 100-year flow

The existing 375 mm storm sewer downstream of MH11 which is to be utilized for the site outlet is laid at 0.67% and has a capacity of 144 L/s. Under proposed conditions, the controlled flow to be discharged to the existing 375 mm is 23 L/s as shown in **Table 3-4**. The existing 375 mm storm sewer has adequate capacity to serve the site.

Comparing the total post development 100-year discharge from the site from 31 L/s in **Table 3-4** to the pre-development discharge of 179 L/s as shown in **Table 3-3** shows an ~83% decrease in flow to the public drainage system.

The PCSWMM model plan for existing and proposed site development is provided in **Appendix A**. Refer to **Drawing's C301** and **C302** for drainage area details

3.3.2 Quality Control

Per City of Mississauga guidelines, the site is required to meet a minimum of 80% TSS removal on site for quality control. To achieve the required TSS removal an Oil Grit Separator (OGS) will be used downstream of the proposed storage tank. The OGS device will provide a minimum of 80% TSS removal. Preliminary sizing for the 0.25 ha draining to the stormwater tank an indicated that an Stormceptor EFO4 OGS would be required and would provide 93% efficiency. Sizing specifications are to be verified by the manufacturer.

Refer to **Appendix A** for the Stormceptor Sizing Report and **Drawing C302** for the location of the OGS.

3.3.3 Water Balance and LID Measures

The City of Mississauga requires retention of the first 5 mm of runoff to promote water balance and erosion control. Based on the 0.22 ha of impervious area (0.05 ha of landscape area is proposed outside of the extent of the parking garage), approximately **11 m^3** is required to be retained on site and re-used. As the majority of the site plan is a full coverage building there are limited/nil opportunities for infiltration on site as landscaped areas not above the parking garage are to close to the building to allow infiltration in accordance with the Ontario building code. Reusing the stormwater onsite is permitted where retention via infiltration is not feasible. **Table 3-5** outlines various measures that could be implemented for the subject development. Details of the design will be provided during site plan approvals.

Table 3-5: Potential 5 mm Retention Options

LID Measure	Notes
Landscaped Areas	The planting media (including landscape above parking garage and planting boxes) within the proposed development (732 m^2) will retain the first 5 mm of rainwater and provide the opportunity for evapotranspiration.
Biofiltration Gallery	The landscaped area along the perimeter of the site could designed as a biofiltration gallery with enhanced topsoil, an impermeable liner and an underdrain. Stormwater from both landscaped areas and possibly downspouts from building terraces could be routed through the biofiltration gallery. The benefits of biofiltration could be attenuation, filtration and increased water available for evapotranspiration. This would be an additional element including the stormwater tank and OGS.
Rainwater Harvesting - Irrigation	Rainwater is collected in the sump of the storage tank and used for irrigation for the proposed landscaped areas and planters.
Rainwater Harvesting – Mechanical Uses	Water that is not able to be used for irrigation could be used for other mechanical re-use measures.

4. WASTEWATER SERVICING

4.1 Design Criteria

Wastewater sewers will be designed in accordance with Region of Peel standards and specifications. The following criteria were used:

- 3.1 people/unit for 2 bedroom or larger apartments
- 1.7 people/unit for 1 bedroom apartments
- 0.26 L/s/ha for infiltration
- 290 L/person/day for domestic sewage flow

4.2 Existing Wastewater Infrastructure

The existing 600 mm wastewater sewer along Elm Drive is the designated gravity outlet for wastewater servicing of the subject lands. A 250mm sanitary sewer connection and control MH 8A are available at the southwest corner of Mississauga Valley and Elm Drive.

4.3 Local Wastewater Design

Sanitary drainage will be captured from the site and conveyed to the existing Sanitary MH 8A and 250 mm sanitary sewer that connects into the existing 600 mm wastewater sewer along Elm Drive. **Drawing C101** illustrates the location of the existing services. Wastewater servicing design within the proposed building will be provided by the mechanical engineer at detailed design. For the proposed 467 units based on Region of Peel criteria this corresponds to a population of 1,025 people. The estimated sanitary flow from the subject lands is 13.12 L/s which corresponds to ~12% of the outlet pipes capacity.

Refer to Wastewater Demand Calculations in **Appendix B** for calculations and single use demand table.

5. WATER SERVICING

5.1 Design Criteria

The proposed watermain design will comply with the Region of Peel design criteria as follows:

- Residential Consumption = 280 l/c/day, max day = 2
- Residential and Commercial Peak Hour = 3
- Minimum operating pressure = 40 psi
- Maximum operating pressure = 100 psi

5.2 Existing Conditions

A 400 mm CPP watermain along the south side of Mississauga Valley Boulevard, a 300 mm watermain on in the middle of Mississauga Valley Boulevard and a 400 mm CPP watermain within the east side of the Elm Drive pavement surround the subject site.

5.3 Local Watermains

As shown on **Drawing C101**, the proposed development will be serviced via a domestic service and two fire connections to the 300 mm watermain on Mississauga Valley Boulevard.

The total proposed fire flow from the subject lands is estimated to be 66.7 L/s (1057 USGPM) and the max hourly domestic demand is 10 L/s (158 USGPM).

A hydrant flow was undertaken on Mississauga Valley Boulevard. Results are provided in the table below.

Table 5-1: Hydrant Flow Test

Pressure (psi)	Flow (USGPM)
Mississauga Valley Boulevard	
45	1126
36	2014
20	5198

Refer to **Appendix C** for water demand calculation and hydrant flow test results.

6. EROSION AND SEDIMENT CONTROL

Erosion and sediment controls measures as follows:

1. Installing heavy duty silt control fencing along the perimeter of the site at strategic locations.
2. Installing a temporary mud mat at the construction site entrance.
3. Wrapping the tops of all inlet structures with filter fabric and using install silt sacks.
4. Inspecting all sediment and erosion control controls to maintain them in good repair until such time as the Engineer or the City approves their removal.

Refer to **Drawing C501** for site specific erosion and sediment control plans.

7. CONCLUSIONS

This report has demonstrated that:

- The proposed site will be graded to match to existing elevations at all property lines.
- Building Storm drains will be designed by the project mechanical engineer at the building permit stage.
- Water quality will be provided with an OGS device.
- Storm water quantity control estimated to be 94 m^3 will be required to control flows from the post development 100-year storm to the predevelopment 2-year storm in accordance with Mississauga standards.
- Storage will be provided with a tank located at the north-east corner of the building that will be integrated with the building parking structure.
- The site will utilize an existing 375 mm storm sewer that serves the site and outlets to an existing storm sewer on Elm Drive.
- Water balance objectives will be met by retaining the first 5 mm of rain events onsite in the sump in the storage tank. Retained water will be re-used for irrigation purposes.
- Wastewater servicing to the site will be provided by connecting to the existing 250 mm diameter connection to the 600 mm diameter existing sewer on Elm Drive.
- Water servicing to the site will be provided by the existing 400 mm watermain on Mississauga Valley Boulevard.

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Water Resources Designer

DRAWINGS AND FIGURES

C101 – Servicing Plan
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APPENDIX A
SWM Calculations

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PCSWMM Report

Existing - 0.5 RC - 2-Year Event

Model Existing Model-Green and Ampt - 0.5 RC.inp

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April 6, 2022

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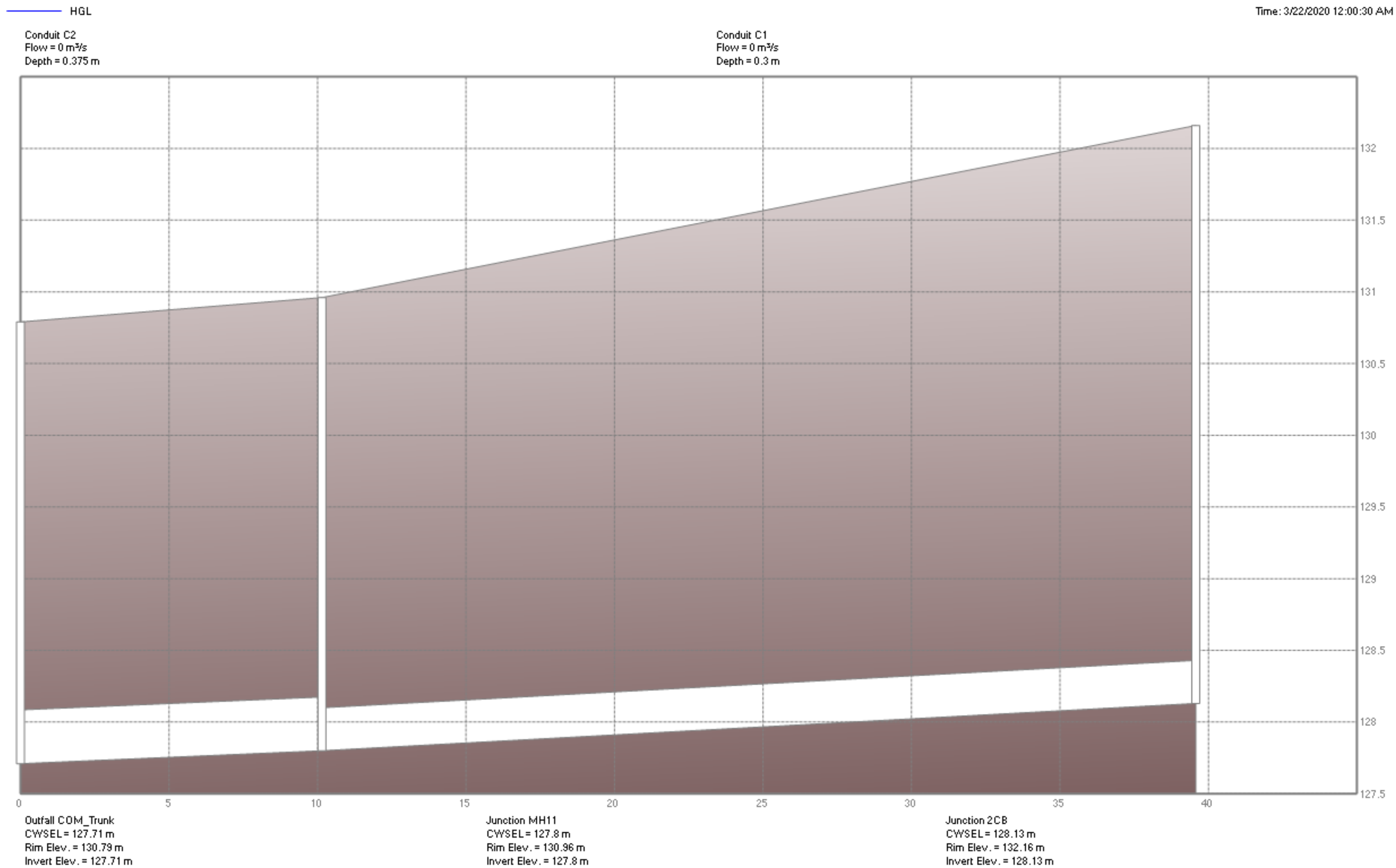

Figure 1: Node COM_Trunk to Node 2CB

Table 1: Conduits

Name	Inlet Node	Outlet Node	Length (m)	Roughness	Inlet Elev. (m)	Outlet Elev. (m)	Geom1 (m)	Max. |Flow| (m³/s)	Max. Unit Flow (m³/s/ha)
C1	2CB	MH11	29.425	0.013	128.13	127.8	0.3	0.026	0.136
C2	MH11	COM_Trunk	10.148	0.01	127.8	127.71	0.375	0.025	0.131

Table 2A: Subcatchments

Name	Rain Gage	Outlet	Area (ha)	Width (m)	Flow Length (m)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Groundwater
S1	Chicago_4h_2yr_com	2CB	0.1905	86.591	22	0.5	43	0.011	0.25	NO
S2	Chicago_4h_2yr_com	Major_System	0.0833	75.727	11	14	0	0.011	0.25	NO

Table 2B: Subcatchments

Name	Precipitation (mm)	Runon (mm)	Evaporation (mm)	Infiltration (mm)	Runoff Depth (mm)	Peak Runoff (m³/s)	Runoff Coefficient
S1	33.45	0	0	14.1	18.73	0.03	0.56
S2	33.45	0	0	23.6	9.88	0.01	0.295

Table 3: Junctions

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Depth (m)	Initial Depth (m)	Surcharge Depth (m)	Baseline (m^3/s)	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Max. Total Inflow (m^3/s)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Unit Flow ($m^3/s/ha$)
2CB	NO	128.13	132.16	4.03	0	0	0	0	0.11	128.24	0.026	0.19	0.082	0.136
MH11	NO	127.8	130.96	3.16	0	0	0	0	0.1	127.9	0.026	0.19	0.082	0.136

Table 4: Outfalls

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Fixed Stage (m)	Time Series	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Total Inflow (m^3/s)
COM_Trunk	NO	127.71	130.79	0		0	0.09	127.8	0.19	0.082	0.025
Major_System	NO	130.79	0	0		0	0	130.79	0.083	0	0.008

PCSWMM Report

Existing - 2-Year Event

Model Existing Model-Green and Ampt - Actual IMP.inp

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April 6, 2022

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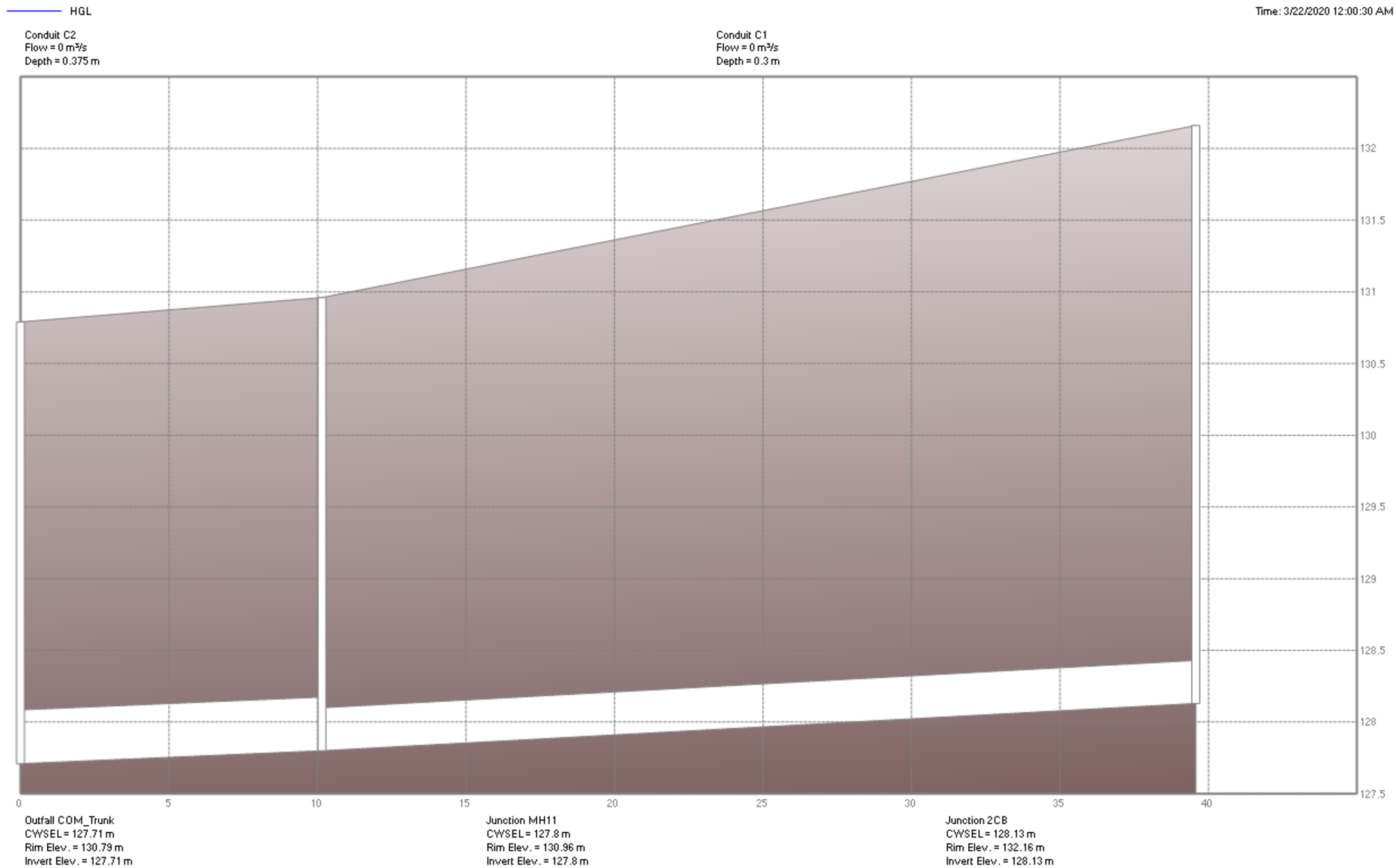

Figure 1: Node COM_Trunk to Node 2CB

Table 1: Conduits

Name	Inlet Node	Outlet Node	Length (m)	Roughness	Inlet Elev. (m)	Outlet Elev. (m)	Geom1 (m)	Max. |Flow| (m^3/s)	Max. Unit Flow ($m^3/s/ha$)
C1	2CB	MH11	29.425	0.013	128.13	127.8	0.3	0.04	0.21
C2	MH11	COM_Trunk	10.148	0.01	127.8	127.71	0.375	0.04	0.21

Table 2A: Subcatchments

Name	Rain Gage	Outlet	Area (ha)	Width (m)	Flow Length (m)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Groundwater
S1	Chicago_4h_2yr_com	2CB	0.1905	86.591	22	0.5	71	0.011	0.25	NO
S2	Chicago_4h_2yr_com	Major_System	0.0833	75.727	11	14	0	0.011	0.25	NO

Table 2B: Subcatchments

Name	Precipitation (mm)	Runon (mm)	Evaporation (mm)	Infiltration (mm)	Runoff Depth (mm)	Peak Runoff (m^3/s)	Runoff Coefficient
S1	33.45	0	0	7	25.42	0.04	0.76
S2	33.45	0	0	23.6	9.88	0.01	0.295

Table 3: Junctions

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Depth (m)	Initial Depth (m)	Surcharge Depth (m)	Baseline (m^3/s)	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Max. Total Inflow (m^3/s)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Unit Flow ($m^3/s/ha$)
2CB	NO	128.13	132.16	4.03	0	0	0	0.01	0.14	128.27	0.041	0.19	0.135	0.215
MH11	NO	127.8	130.96	3.16	0	0	0	0.01	0.13	127.93	0.04	0.19	0.135	0.21

Table 4: Outfalls

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Fixed Stage (m)	Time Series	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Total Inflow (m^3/s)
COM_Trunk	NO	127.71	130.79	0		0.01	0.11	127.82	0.19	0.135	0.04
Major_System	NO	130.79	0	0		0	0	130.79	0.083	0	0.008

PCSWMM Report

Existing - 0.5 RC - 100-Year Event

Model Existing Model-Green and Ampt - 0.5 RC - 100-year.inp

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April 6, 2022

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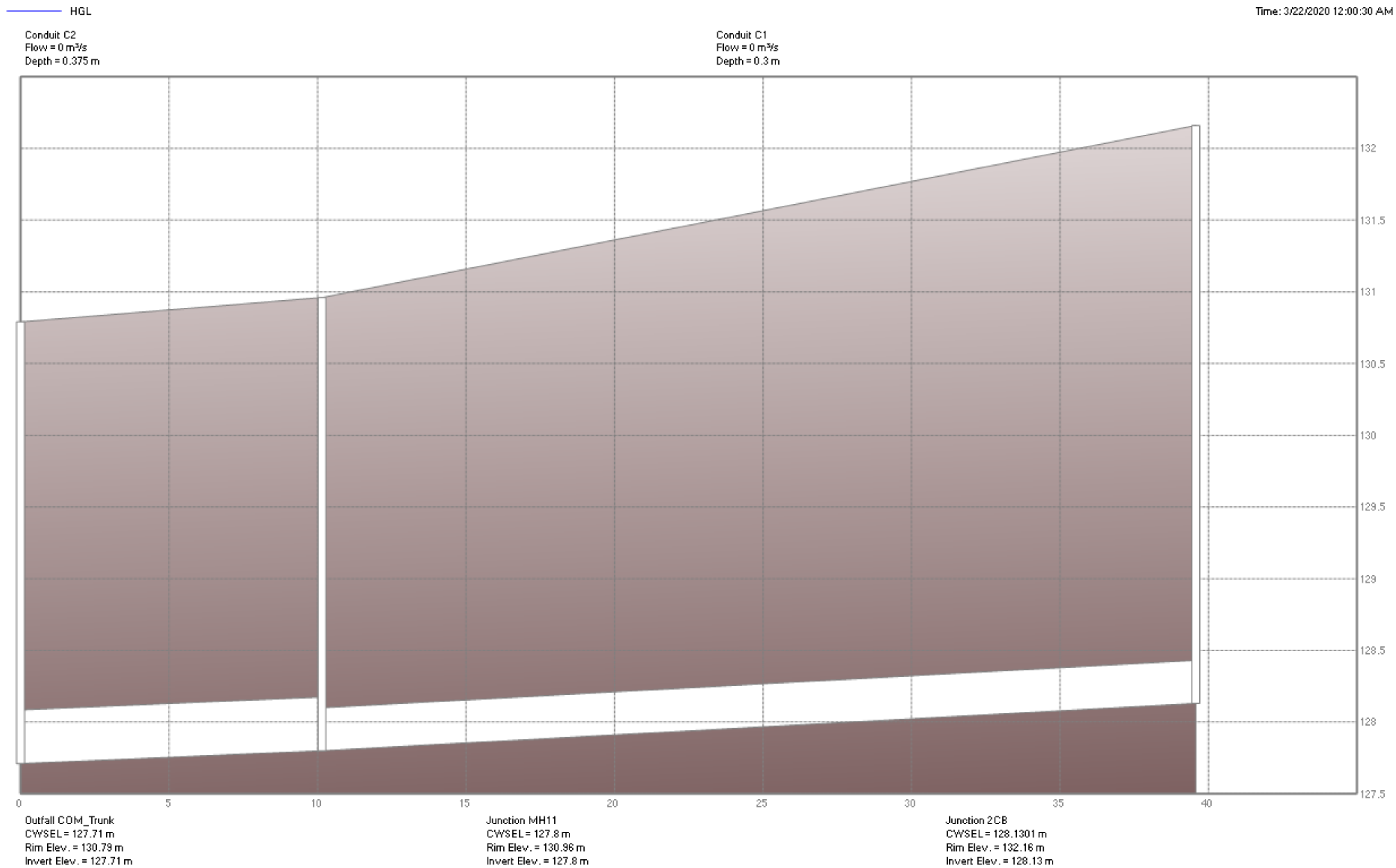

Figure 1: Node COM_Trunk to Node 2CB

Table 1: Conduits

Name	Inlet Node	Outlet Node	Length (m)	Roughness	Inlet Elev. (m)	Outlet Elev. (m)	Geom1 (m)	Max. |Flow| (m^3/s)	Max. Unit Flow ($m^3/s/ha$)
C1	2CB	MH11	29.425	0.013	128.13	127.8	0.3	0.102	0.535
C2	MH11	COM_Trunk	10.148	0.01	127.8	127.71	0.375	0.102	0.535

Table 2A: Subcatchments

Name	Rain Gage	Outlet	Area (ha)	Width (m)	Flow Length (m)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Groundwater
S1	Chicago_4h_100yr_com	2CB	0.1905	86.591	22	0.5	61	0.011	0.25	NO
S2	Chicago_4h_100yr_com	Major_System	0.0833	75.727	11	14	16	0.011	0.25	NO

Table 2B: Subcatchments

Name	Precipitation (mm)	Runon (mm)	Evaporation (mm)	Infiltration (mm)	Runoff Depth (mm)	Peak Runoff (m^3/s)	Runoff Coefficient
S1	79.44	0	0	11.31	67.3	0.1	0.847
S2	79.44	0	0	23.7	55.6	0.05	0.7

Table 3: Junctions

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Depth (m)	Initial Depth (m)	Surcharge Depth (m)	Baseline (m^3/s)	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Max. Total Inflow (m^3/s)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Unit Flow ($m^3/s/ha$)
2CB	NO	128.13	132.16	4.03	0	0	0	0.01	0.29	128.42	0.104	0.19	0.116	0.546
MH11	NO	127.8	130.96	3.16	0	0	0	0.01	0.22	128.02	0.102	0.19	0.116	0.535

Table 4: Outfalls

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Fixed Stage (m)	Time Series	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Total Inflow (m^3/s)
COM_Trunk	NO	127.71	130.79	0		0.01	0.18	127.89	0.19	0.116	0.102
Major_System	NO	130.79	0	0		0	0	130.79	0.083	0.013	0.052

PCSWMM Report

Existing - 100-Year Event

Model Existing Model-Green and Ampt - Actual IMP - 100-year.inp

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March 25, 2022

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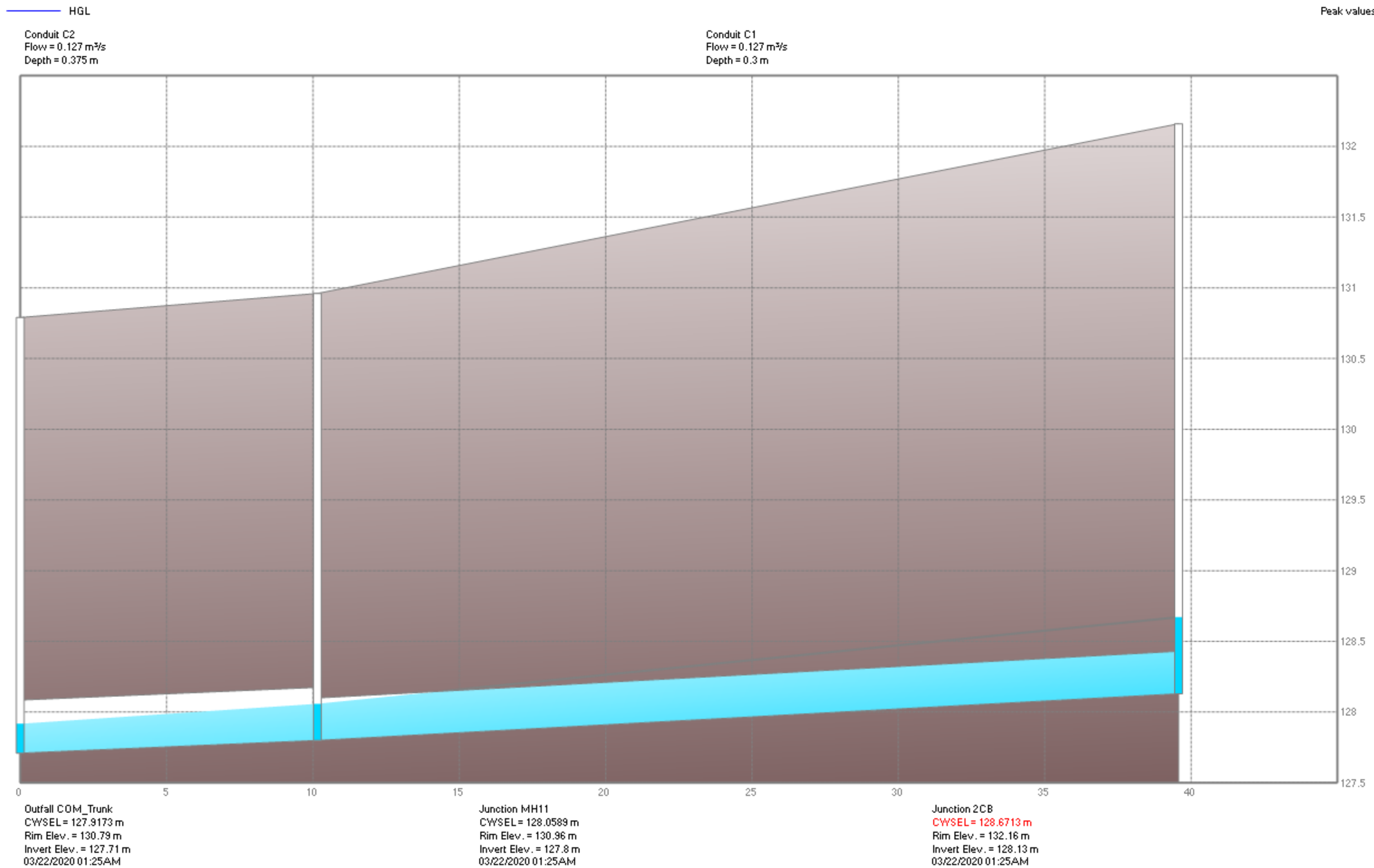

Figure 1: Node COM_Trunk to Node 2CB

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C1	2CB	MH11	29.425	0.013	128.13	127.8	0.3	0.127	0.668
C2	MH11	COM_Trunk	10.148	0.01	127.8	127.71	0.375	0.127	0.668

Table 2A: Subcatchments

Name	Rain Gage	Outlet	Area (ha)	Width (m)	Flow Length (m)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Groundwater
S1	Chicago_4h_100yr_com	2CB	0.19	86.364	22	0.5	96	0.011	0.25	NO
S2	Chicago_4h_100yr_com	Major_System	0.0833	75.727	11	14	16	0.011	0.25	NO

Table 2B: Subcatchments

Name	Precipitation (mm)	Runon (mm)	Evaporation (mm)	Infiltration (mm)	Runoff Depth (mm)	Peak Runoff (m^3/s)	Runoff Coefficient
S1	79.44	0	0	1.12	76.98	0.13	0.969
S2	79.44	0	0	23.7	55.6	0.05	0.7

Table 3: Junctions

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Depth (m)	Initial Depth (m)	Surcharge Depth (m)	Baseline (m^3/s)	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Max. Total Inflow (m^3/s)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Unit Flow ($m^3/s/ha$)
2CB	NO	128.13	132.16	4.03	0	0	0	0.01	0.54	128.67	0.127	0.19	0.182	0.668
MH11	NO	127.8	130.96	3.16	0	0	0	0.01	0.26	128.06	0.127	0.19	0.182	0.668

Table 4: Outfalls

Name	Inflows	Invert Elev. (m)	Rim Elev. (m)	Fixed Stage (m)	Time Series	Avg. Depth (m)	Max. Depth (m)	Max. HGL (m)	Contributing Area (ha)	Contributing Imp. Area (ha)	Max. Total Inflow (m³/s)
COM_Trunk	NO	127.71	130.79	0		0.01	0.21	127.92	0.19	0.182	0.127
Major_System	NO	130.79	0	0		0	0	130.79	0.083	0.013	0.052

PCSWMM Report

Proposed Model - 100-Year

Model Proposed Model-Green and Ampt - Reservoir - 100-year.inp

October 13, 2022

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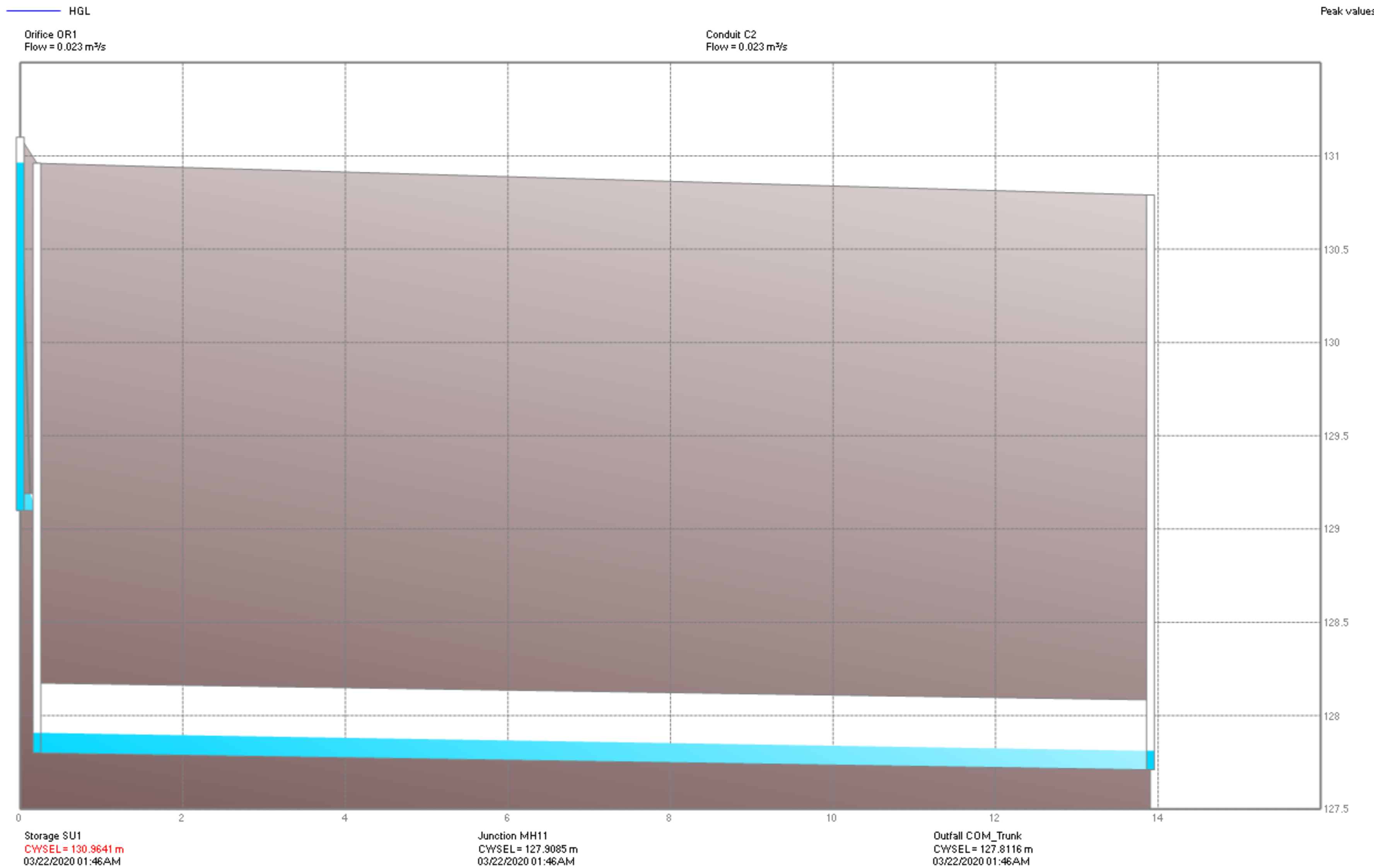


Figure 1: Node SU1 to Node COM_Trunk

Table 1A: Storages

Name	X-Coordinate	Y-Coordinate	Invert Elev. (m)	Rim Elev. (m)	Depth (m)	Curve Name	Baseline (m³/s)	Time Series	Max. Depth (m)	Max. HGL (m)	Max. Total Inflow (m³/s)	Flow Error (%)	Contributing Area (ha)	Contributing Imp. Area (ha)
SU1	1024.093	4948.036	129.1	131.1	2	Storage2mDepth	0		1.86	130.96	0.162	0	0.254	0.252

Table 1B: Storages

Name	Max. Unit Flow (m³/s/ha)
SU1	0.637

STORMCEPTOR®
ESTIMATED NET ANNUAL SEDIMENT (TSS) LOAD REDUCTION

10/14/2022

Province:	Ontario
City:	Mississauga
Nearest Rainfall Station:	TORONTO INTL AP
Climate Station Id:	6158731
Years of Rainfall Data:	20
Site Name:	
Drainage Area (ha):	0.25
Runoff Coefficient 'c':	0.77
Particle Size Distribution:	Fine
Target TSS Removal (%):	80.0
Required Water Quality Runoff Volume Capture (%):	90.00
Estimated Water Quality Flow Rate (L/s):	5.99
Oil / Fuel Spill Risk Site?	Yes
Upstream Flow Control?	Yes
Upstream Orifice Control Flow Rate to Stormceptor (L/s):	23.00
Peak Conveyance (maximum) Flow Rate (L/s):	
Site Sediment Transport Rate (kg/ha/yr):	

Project Name:	3575 Kaneff Crescent
Project Number:	20-632
Designer Name:	Janna Ormond
Designer Company:	Urbantech
Designer Email:	jannaormond@urbantech.com
Designer Phone:	289-887-3057
EOR Name:	
EOR Company:	
EOR Email:	
EOR Phone:	

Net Annual Sediment (TSS) Load Reduction Sizing Summary

Stormceptor Model	TSS Removal Provided (%)
EFO4	93
EFO6	98
EFO8	99
EFO10	100
EFO12	100

Recommended Stormceptor EFO Model: EFO4

Estimated Net Annual Sediment (TSS) Load Reduction (%): 93

Water Quality Runoff Volume Capture (%): > 90

THIRD-PARTY TESTING AND VERIFICATION

►**Stormceptor® EF and Stormceptor® EFO** are the latest evolutions in the Stormceptor® oil-grit separator (OGS) technology series, and are designed to remove a wide variety of pollutants from stormwater and snowmelt runoff. These technologies have been third-party tested in accordance with the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators** and performance has been third-party verified in accordance with the **ISO 14034 Environmental Technology Verification (ETV)** protocol.

PERFORMANCE

►**Stormceptor® EF and EFO** remove stormwater pollutants through gravity separation and floatation, and feature a patent-pending design that generates positive removal of total suspended solids (TSS) throughout each storm event, including high-intensity storms. Captured pollutants include sediment, free oils, and sediment-bound pollutants such as nutrients, heavy metals, and petroleum hydrocarbons. Stormceptor is sized to remove a high level of TSS from the frequent rainfall events that contribute the vast majority of annual runoff volume and pollutant load. The technology incorporates an internal bypass to convey excessive stormwater flows from high-intensity storms through the device without resuspension and washout (scour) of previously captured pollutants. Proper routine maintenance ensures high pollutant removal performance and protection of downstream waterways.

PARTICLE SIZE DISTRIBUTION (PSD)

►The **Canadian ETV PSD** shown in the table below was used, or in part, for this sizing. This is the identical PSD that is referenced in the Canadian ETV ***Procedure for Laboratory Testing of Oil-Grit Separators*** for both sediment removal testing and scour testing. The Canadian ETV PSD contains a wide range of particle sizes in the sand and silt fractions, and is considered reasonably representative of the particle size fractions found in typical urban stormwater runoff.

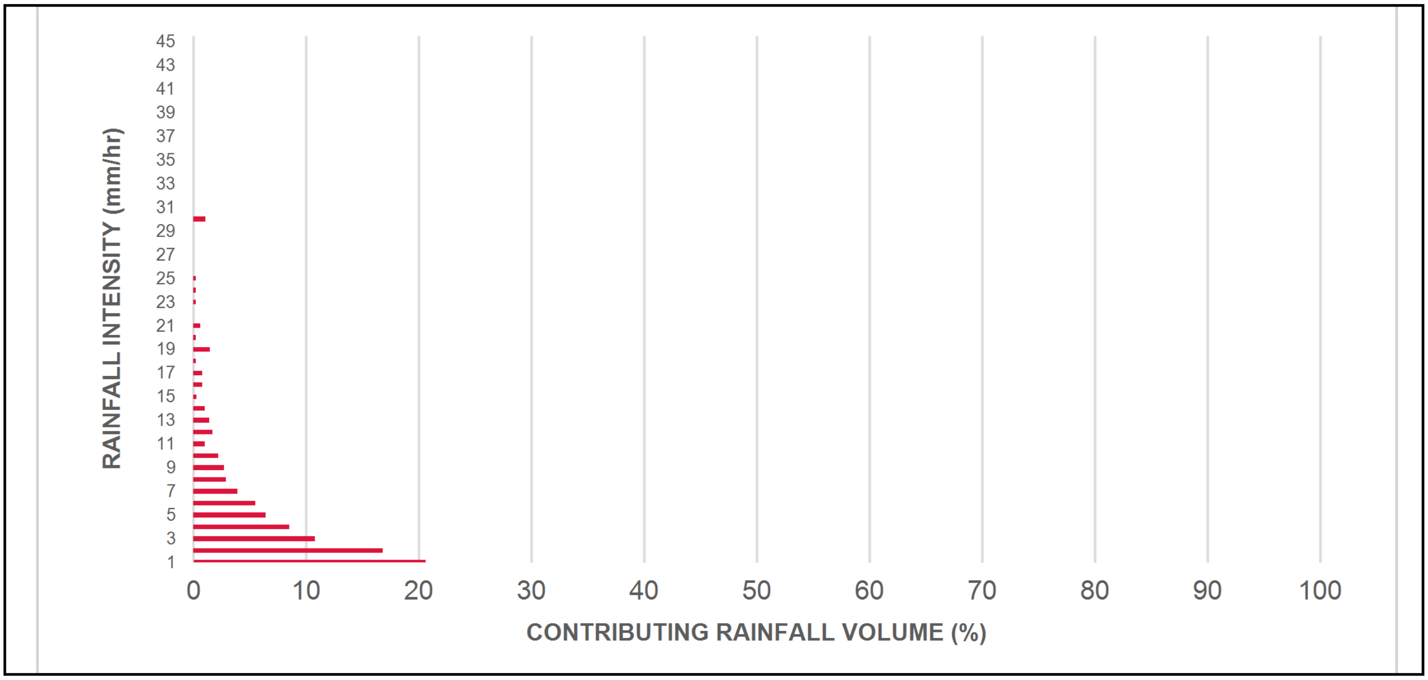
Particle Size (μm)	Percent Less Than	Particle Size Fraction (μm)	Percent
1000	100	500-1000	5
500	95	250-500	5
250	90	150-250	15
150	75	100-150	15
100	60	75-100	10
75	50	50-75	5
50	45	20-50	10
20	35	8-20	15
8	20	5-8	10
5	10	2-5	5
2	5	<2	5

Upstream Flow Controlled Results

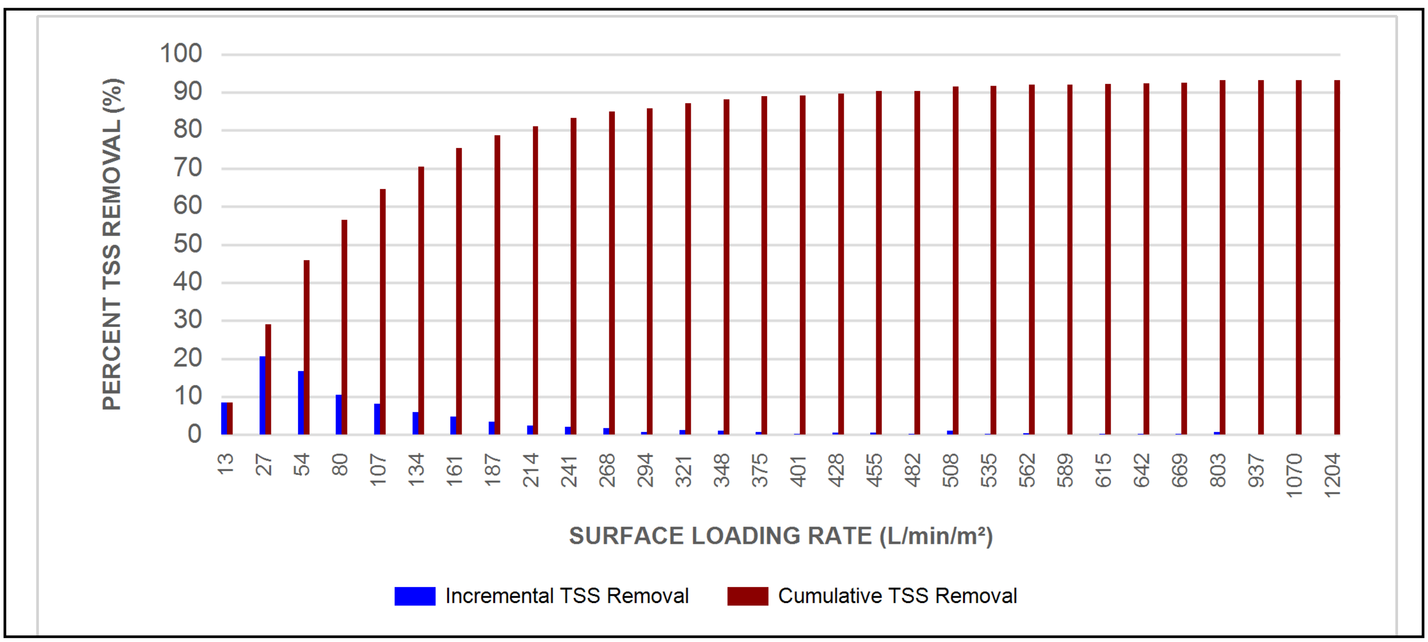
Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m²)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
0.5	8.5	8.5	0.27	16.0	13.0	100	8.5	8.5
1	20.6	29.1	0.54	32.0	27.0	100	20.6	29.1
2	16.8	45.9	1.07	64.0	54.0	100	16.8	45.9
3	10.8	56.7	1.61	96.0	80.0	98	10.6	56.5
4	8.5	65.2	2.14	128.0	107.0	96	8.1	64.6
5	6.4	71.6	2.68	161.0	134.0	92	5.9	70.5
6	5.5	77.0	3.21	193.0	161.0	88	4.8	75.4
7	3.9	81.0	3.75	225.0	187.0	86	3.4	78.7
8	2.9	83.9	4.28	257.0	214.0	83	2.4	81.1
9	2.7	86.5	4.82	289.0	241.0	81	2.2	83.3
10	2.2	88.7	5.35	321.0	268.0	80	1.7	85.0
11	1.0	89.7	5.89	353.0	294.0	79	0.8	85.8
12	1.7	91.3	6.42	385.0	321.0	78	1.3	87.1
13	1.4	92.8	6.96	417.0	348.0	77	1.1	88.2
14	1.0	93.7	7.49	450.0	375.0	75	0.7	88.9
15	0.3	94.0	8.03	482.0	401.0	74	0.2	89.1
16	0.8	94.8	8.56	514.0	428.0	73	0.6	89.7
17	0.8	95.7	9.10	546.0	455.0	72	0.6	90.3
18	0.2	95.8	9.63	578.0	482.0	70	0.1	90.4
19	1.5	97.3	10.17	610.0	508.0	69	1.0	91.5
20	0.2	97.5	10.70	642.0	535.0	68	0.1	91.6
21	0.6	98.2	11.24	674.0	562.0	66	0.4	92.0
22	1.8	100.0	11.77	706.0	589.0	66	1.2	93.2
23	0.2	100.2	12.31	739.0	615.0	65	0.1	93.4
24	0.2	100.5	12.84	771.0	642.0	64	0.2	93.5
25	0.2	100.7	13.38	803.0	669.0	64	0.2	93.7
30	1.1	101.8	16.05	963.0	803.0	63	0.7	94.4
35	-1.8	100.0	18.73	1124.0	937.0	62	N/A	93.3
40	0.0	100.0	21.41	1284.0	1070.0	60	0.0	93.3
45	0.0	100.0	23.00	1380.0	1150.0	58	0.0	93.3
Estimated Net Annual Sediment (TSS) Load Reduction =								**93 %**

Climate Station ID: 6158731 *Years of Rainfall Data*: 20

RAINFALL DATA FROM TORONTO INTL AP RAINFALL STATION



INCREMENTAL AND CUMULATIVE TSS REMOVAL FOR THE RECOMMENDED STORMCEPTOR® MODEL



Maximum Pipe Diameter / Peak Conveyance

Stormceptor EF / EFO	Model Diameter		Min Angle Inlet / Outlet Pipes	Max Inlet Pipe Diameter		Max Outlet Pipe Diameter		Peak Conveyance Flow Rate	
	(m)	(ft)		(mm)	(in)	(mm)	(in)	(L/s)	(cfs)
EF4 / EFO4	1.2	4	90	609	24	609	24	425	15
EF6 / EFO6	1.8	6	90	914	36	914	36	990	35
EF8 / EFO8	2.4	8	90	1219	48	1219	48	1700	60
EF10 / EFO10	3.0	10	90	1828	72	1828	72	2830	100
EF12 / EFO12	3.6	12	90	1828	72	1828	72	2830	100

SCOUR PREVENTION AND ONLINE CONFIGURATION

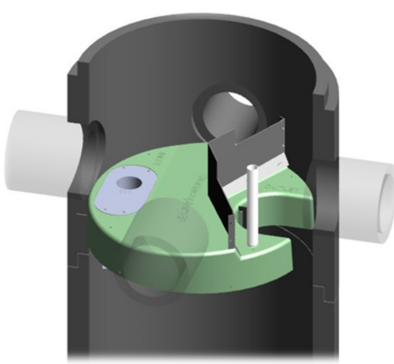
►**Stormceptor® EF and EFO** feature an internal bypass and superior scour prevention technology that have been demonstrated in third-party testing according to the scour testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**, and the exceptional scour test performance has been third-party verified in accordance with the ISO 14034 ETV protocol. As a result, Stormceptor EF and EFO are approved for online installation, eliminating the need for costly additional bypass structures, piping, and installation expense.

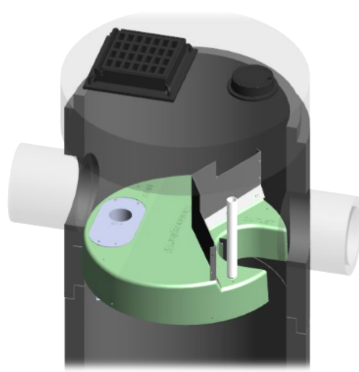
DESIGN FLEXIBILITY

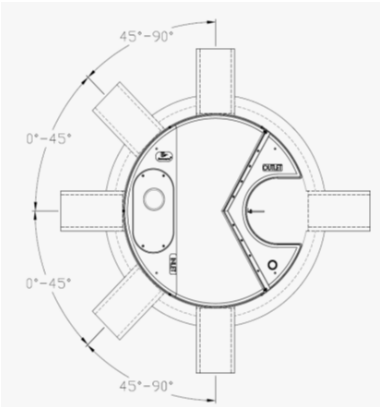
►**Stormceptor® EF** and **EFO** offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe or multiple inlet pipes, and/or surface runoff through an inlet grate. The device can also serve as a junction structure, accommodate a 90-degree inlet-to-outlet bend angle, and can be modified to ensure performance in submerged conditions.

OIL CAPTURE AND RETENTION

►While Stormceptor® EF will capture and retain oil from dry weather spills and low intensity runoff, **Stormceptor® EFO** has demonstrated superior oil capture and greater than 99% oil retention in third-party testing according to the light liquid re-entrainment testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**. Stormceptor EFO is recommended for sites where oil capture and retention is a requirement.







INLET-TO-OUTLET DROP

Elevation differential between inlet and outlet pipe inverts is dictated by the angle at which the inlet pipe(s) enters the unit.

0° - 45° : The inlet pipe is 1-inch (25mm) higher than the outlet pipe.

45° - 90° : The inlet pipe is 2-inches (50mm) higher than the outlet pipe.

HEAD LOSS

The head loss through Stormceptor EF is similar to that of a 60-degree bend structure. The applicable K value for calculating minor losses through the unit is 1.1. For submerged conditions the applicable K value is 3.0.

Pollutant Capacity

Stormceptor EF / EFO	Model Diameter		Depth (Outlet Pipe Invert to Sump Floor)		Oil Volume		Recommended Sediment Maintenance Depth *		Maximum Sediment Volume *		Maximum Sediment Mass **	
	(m)	(ft)	(m)	(ft)	(L)	(Gal)	(mm)	(in)	(L)	(ft³)	(kg)	(lb)
EF4 / EFO4	1.2	4	1.52	5.0	265	70	203	8	1190	42	1904	5250
EF6 / EFO6	1.8	6	1.93	6.3	610	160	305	12	3470	123	5552	15375
EF8 / EFO8	2.4	8	2.59	8.5	1070	280	610	24	8780	310	14048	38750
EF10 / EFO10	3.0	10	3.25	10.7	1670	440	610	24	17790	628	28464	78500
EF12 / EFO12	3.6	12	3.89	12.8	2475	655	610	24	31220	1103	49952	137875

*Increased sump depth may be added to increase sediment storage capacity

** Average density of wet packed sediment in sump = 1.6 kg/L (100 lb/ft³)

Feature	Benefit	Feature Appeals To
Patent-pending enhanced flow treatment and scour prevention technology	Superior, verified third-party performance	Regulator, Specifying & Design Engineer
Third-party verified light liquid capture and retention for EFO version	Proven performance for fuel/oil hotspot locations	Regulator, Specifying & Design Engineer, Site Owner
Functions as bend, junction or inlet structure	Design flexibility	Specifying & Design Engineer
Minimal drop between inlet and outlet	Site installation ease	Contractor
Large diameter outlet riser for inspection and maintenance	Easy maintenance access from grade	Maintenance Contractor & Site Owner

STANDARD STORMCEPTOR EF/EFO DRAWINGS

For standard details, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

STANDARD STORMCEPTOR EF/EFO SPECIFICATION

For specifications, please visit http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef

STANDARD PERFORMANCE SPECIFICATION FOR
"OIL GRIT SEPARATOR" (OGS) STORMWATER QUALITY TREATMENT DEVICE

PART 1 – GENERAL

1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, and designing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, with third-party testing results and a Statement of Verification in accordance with ISO 14034 Environmental Management – Environmental Technology Verification (ETV).

1.2 REFERENCE STANDARDS & PROCEDURES

ISO 14034:2016 Environmental management – Environmental technology verification (ETV)

Canadian Environmental Technology Verification (ETV) Program's **Procedure for Laboratory Testing of Oil-Grit Separators**

1.3 SUBMITTALS

1.3.1 All submittals, including sizing reports & shop drawings, shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail all OGS components, elevations, and sequence of construction.

1.3.2 Alternative devices shall have features identical to or greater than the specified device, including: treatment chamber diameter, treatment chamber wet volume, sediment storage volume, and oil storage volume.

1.3.3 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be signed and sealed by a local registered Professional Engineer, based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record.

PART 2 – PRODUCTS

2.1 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a protected volume for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The minimum sediment & petroleum hydrocarbon storage capacity shall be as follows:

2.1.1	4 ft (1219 mm) Diameter OGS Units:	1.19 m^3 sediment / 265 L oil
	6 ft (1829 mm) Diameter OGS Units:	3.48 m^3 sediment / 609 L oil
	8 ft (2438 mm) Diameter OGS Units:	8.78 m^3 sediment / 1,071 L oil
	10 ft (3048 mm) Diameter OGS Units:	17.78 m^3 sediment / 1,673 L oil
	12 ft (3657 mm) Diameter OGS Units:	31.23 m^3 sediment / 2,476 L oil

PART 3 – PERFORMANCE & DESIGN

3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality treatment device shall remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing of the OGS shall be determined by use of a minimum ten (10) years of local historical rainfall data provided by Environment Canada. Sizing shall also be determined by use of the sediment removal performance data derived from the ISO 14034 ETV third-party verified laboratory testing data from testing conducted in accordance with the Canadian ETV protocol Procedure for Laboratory Testing of Oil-Grit Separators, as follows:

3.2.1 Sediment removal efficiency for a given surface loading rate and its associated flow rate shall be based on sediment removal efficiency demonstrated at the seven (7) tested surface loading rates specified in the protocol, ranging 40 L/min/m^2 to 1400 L/min/m^2, and as stated in the ISO 14034 ETV Verification Statement for the OGS device.

3.2.2 Sediment removal efficiency for surface loading rates between 40 L/min/m^2 and 1400 L/min/m^2 shall be based on linear interpolation of data between consecutive tested surface loading rates.

3.2.3 Sediment removal efficiency for surface loading rates less than the lowest tested surface loading rate of 40 L/min/m^2 shall be assumed to be identical to the sediment removal efficiency at 40 L/min/m^2. No extrapolation shall be allowed that results in a sediment removal efficiency that is greater than that demonstrated at 40 L/min/m^2.

3.2.4 Sediment removal efficiency for surface loading rates greater than the highest tested surface loading rate of 1400 L/min/m^2 shall assume zero sediment removal for the portion of flow that exceeds 1400 L/min/m^2, and shall be calculated using a simple proportioning formula, with 1400 L/min/m^2 in the numerator and the higher surface loading rate in the denominator, and multiplying the resulting fraction times the sediment removal efficiency at 1400 L/min/m^2.

The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.**

3.3.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m^2.

3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid Re-entrainment Simulation Testing in accordance with the Canadian ETV **Program's Procedure for Laboratory Testing of Oil-Grit Separators,** with results reported within the Canadian ETV or ISO 14034 ETV verification. This re-entrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to assess whether light liquids captured after a spill are effectively retained at high flow rates.

3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m^2 to 2600 L/min/m^2) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators.** However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.

APPENDIX B
Wastewater Servicing

Urbantech® Consulting, A Division of Leighton-Zec West Ltd. | 2030 Bristol Circle, Suite 105 · Oakville · ON · L6H 0H2 | 905.829.8818

urbantech.com

URBANTECH®

WASTEWATER DEMAND CALCULATIONS

Project Name: 3575 Kaneff Crescent
Municipality: City of Mississauga
Project No.: 20-632

Prepared by: JPO
Checked by: SH
Last Revised: 13-Jun-23

Site Area	0.270	ha

Proposed Conditions

Residential

	# of Units	PPU
Apartment (2+ Bedroom)	165	3.1
Apartment (1 Bedroom)	302	1.7

Total Units =	467	
Population =	1025	persons
Harmon Peak Factor for Site, Me =	$(1+14/(4+P^{0.5})$	
	3.79	
Unit Sewage Flow =	290	L/person/day
Domestic Sewage Flow =	13.05	L/s
Site Area =	0.27	ha
Infiltration Allowance =	0.26	L/s/ha
Total Infiltration =	0.07	L/s

Total wastewater flow =	13.12	L/s

URBANTECH®

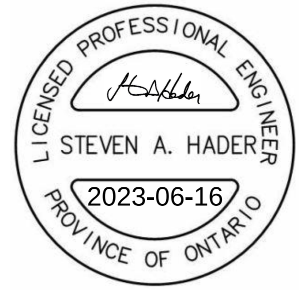
WASTEWATER DEMAND CALCULATIONS

Project Name: 3575 Kaneff Crescent
Municipality: City of Mississauga
Project No.: 20-632

Prepared by: JPO
Checked by: SH
Last Revised: 13-Jun-23

Proposed Service Connection

Capacity					
Diameter (mm)	Slope (%)	Velocity (m/s)	Capacity (L/s)	Spare Capacity (L/s)	Percent Full
250	3.30	2.20	108.03	94.91	12.14%



Connection Single Use Demand Table

WATER CONNECTION

Connection point [3]			
Mississauga Valley Boulevard - West of Elm Drive			
Pressure zone of connection point		Zone 2	
Total equivalent population to be serviced [1]		1025	
Total lands to be serviced		0.27 ha	
Hydrant flow test			
Hydrant flow test location		Mississauga Valley Drive	
	Pressure (kPa)	Flow (in l/s)	Time
Minimum water pressure	248	127	10 am
Maximum water pressure	310	71	10 am

No.	Water demands		
	Demand type	**Demand**	**Units**
1	Average day flow	3.3	l/s
2	Maximum day flow	6.6	l/s
3	Peak hour flow	10	l/s
4	Fire flow [2]	66.7	l/s
Analysis			
5	Maximum day plus fire flow	73.3	l/s

WASTEWATER CONNECTION

Connection point [4]		Elm Drive
Total equivalent population to be serviced [1]		1025
Total lands to be serviced		0.27 ha
6	Wastewater sewer effluent (in l/s)	13.12 L/s

[1] The calculations should be based on the development estimated population (employment or residential).

[2] Please reference the Fire Underwriters Survey Document

[3] Please specify the connection point ID

[4] Please specify the connection point (wastewater line or manhole ID)
Also, the "total equivalent popopulation to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

Please include the graphs associated with the hydrant flow test information table
Please provide Professional Engineer's signature and stamp on the demand table
All required calculations must be submitted with the demand table submission.

APPENDIX C
Water Servicing

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URBANTECH®

WATER DEMAND CALCULATIONS

Project Name: 3575 Kaneff Crescent
Municipality: City of Mississauga
Project No.: 20-632
Date: 13-Jun-23

Fire Flow Calculations

Based on the *Water Supply for Public Fire Protection, 2020* by Fire Underwriters Survey

1 Estimate of Fire Flow

F = 220 C (A)1/2

F = Fire Flow (L/min)
C = Construction Type Coefficient
= 0.6 ,for fire-resistive construction (fully protected frame, floors, roof)
A = Total flow area (m^2)
= If vertical openings and exterior vertical communications are properly protected (one hour rating),
Largest Floor + 25% of two immediately adjoining floors

Floor	Area (m^2)	%
Level 1	1,407	25%
Level 2	1,419	100%
Level 3	117	25%

= 1800 m^2

F = 5600 L/min
= 6000 L/min, rounded to the nearest 1000 L/min

URBANTECH®

WATER DEMAND CALCULATIONS

Project Name: 3575 Kaneff Crescent
Municipality: City of Mississauga
Project No.: 20-632
Date: 13-Jun-23

2 Occupancy Reduction

15% for low hazard occupancies (apartments)

F = 5100 L/min

3 Sprinkler Reduction

30% for adequately designed sprinkler protection conforming to NFPA 13 and other NFPA sprinkler standards

F = 3570 L/min

4 Separation Charge

Direction	Separation (m)	Charge
North	30.0	10%
West		
South		
East		

Total Charge = 10%
F = 510 L/min

Required Fire Flow

F = 4080 L/min
= 4000 L/min, rounded to the nearest 1000 L/min

Fire Flow Demand =	66.7 L/s
=	1057 USGPM

WATER DEMAND CALCULATIONS

Project Name: 3575 Kaneff Crescent
Municipality: City of Mississauga
Project No.: 20-632
Date: 13-Jun-23

Domestic Flow Calculations

Residential Population =	1025	persons, from Sanitary Calculations
Residential Average Day Demand =	280	L/person/day
=	3.3	L/s

Use Peaking Factor the Greater of

Residential Max Daily Demand PF =	2	, from Region of Peel design criteria
Max Daily Demand =	6.6	L/s

or

Max Peak Hour PF =	3	, from Region of Peel design criteria
Max Peak Hour Demand =	10.0	L/s

Domestic Flow Demand =	10.0	L/s
=	158	USGPM

Hydrant Flow Test Report

SITE NAME:

SITE ADDRESS / MUNICIPALITY: **3575 Kaneff Crescent Mississauga, On**

TEST HYDRANT LOCATION : **1st Fire Hydrant North Of Elm Drive East on Mississauga Valley Blvd,**

BASE HYDRANT LOCATION: **1st Fire Hydrant South Of Arista Way on Mississauga Valley Blvd,**

TEST BY: Luzia Wood

TEST DATE: April 28 2022

TEST TIME: 10:00AM

TEST DATA

FLOW HYDRANT — Pipe Diam. (in / mm): 400mm

	PITOT 1	PITOT 2
SIZE OPENING (inches):	2.5	2.5
COEFFICIENT (**note 1**):	0.90	0.90
PITOT READING (psi):	45	36 / 36
FLOW (usgpm):	**1126**	**2014**

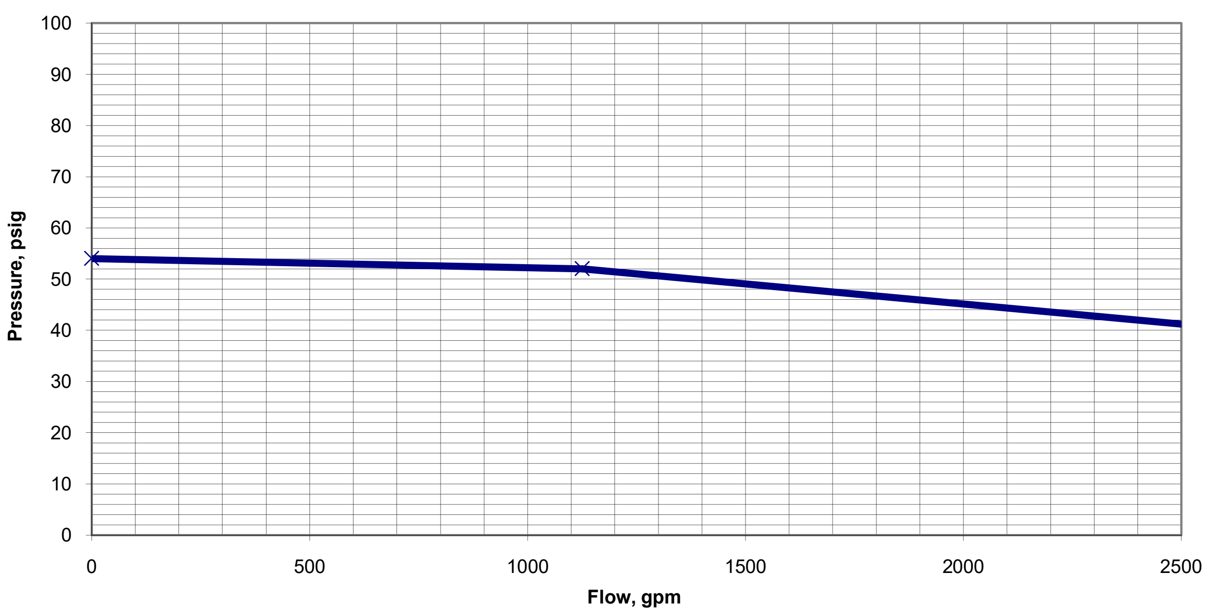
THEORETICAL FLOW @ 20 PSI 5198

BASE HYDRANT — Pipe Diam. (in / mm): 400mm

STATIC READING (psi): 54 RESIDUAL 1 (psi): 52 RESIDUAL 2 (psi): 50

REMARKS: Test Fire Hydrant ID# 2020312 and Base Fire Hydrant ID#2020311

NOTE 1: Conversion factor of .90 used for flow calculation based on rounded and flush internal nozzle configuration. No appreciable difference in pipe invert between flow and base hydrants.



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