Hounslow Holdings Inc.

26– 38 Hounslow Avenue

Stormwater Management Report

March 28, 2024

26– 38 Hounslow Avenue

Stormwater Management Report

Hounslow Holdings Inc.

Rezoning & Official Plan Amendment

Project No.: CA0003234.0568
Date: March 28, 2024

WSP
100 Commerce Valley Drive West
Thornhill, ON, Canada, L3T 0A1

wsp.com

Revision History

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October 23, 2023	Rezoning & Official Plan Amendment (OPA)			
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FINAL				
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Signatures

Prepared by

Malaica Nasir

2024/03/28

Malaica Nasir
Designer, Water Resources

Date

Reviewed[1] by

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Project Engineer, Water Resources

Date

[1] Approval of this document is an administrative function indicating readiness for release and does not impart legal liability on to the Approver for any technical content contained herein. Technical accuracy and fit-for-purpose of this content is obtained through the review process. The Approver shall ensure the applicable review process has occurred prior to signing the document.

Contributors

Client

Client	Hounslow Holdings Inc.

WSP

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1 INTRODUCTION

1.1 Scope

WSP has been retained by Hounslow Holdings Inc. to prepare a Stormwater Management (SWM) Report to support the Rezoning Application (ZBA) and Official Plan Amendment (OPA) for the proposed development at 26 – 38 Hounslow Avenue, in the City of Toronto. This SWM report examines the potential water balance, water quality, and water quantity impacts of the proposed development and summarizes how each will be addressed in accordance with the City of Toronto's Wet Weather Flow Management Guidelines (WWFMG).

1.2 Site Location

The 26 – 38 Hounslow Avenue Development is located on Hounslow Avenue between Yonge Street and Beecroft Road in the City of Toronto. The site falls within the jurisdiction of the City of Toronto and the Wet Weather Flow Management Guidelines (WWFMG). Other agencies relevant to this site include the Toronto and Region Conservation Authority (TRCA), and the Ministry of the Environment, Conservation, and Parks (MECP). The location of the proposed development is illustrated in **Figure 1**.

1.3 Stormwater Management Plan Objectives

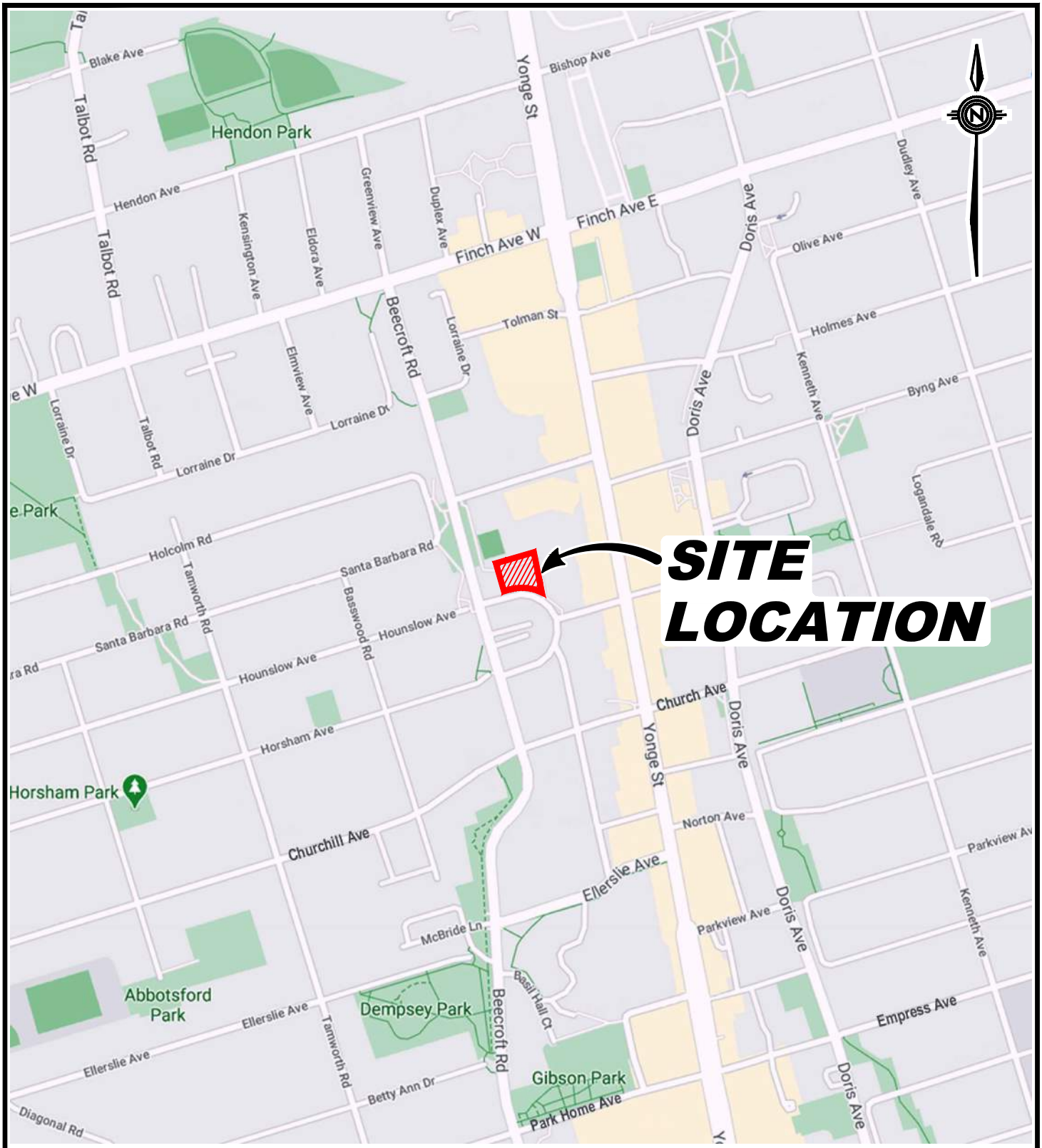
The objectives of the stormwater management plan are as follows:

- Determine site specific stormwater management requirements to ensure that the proposals are in conformance with the City of Toronto WWFMG document;
- Evaluate various stormwater management practices that meet the requirements of the City and recommend a preferred strategy; and
- Prepare a stormwater management report documenting the strategy along with the technical information necessary for the justification and preliminary sizing of the proposed stormwater management facilities.

1.4 Design Criteria

The City of Toronto issued the WWFMG document in November 2006 to provide direction on the management of rainfall and runoff inside the City's jurisdiction. A summary of the stormwater management criteria applicable to this project follows:

- **Erosion Control** – As indicated in WWFMG, 'For small infill/redevelopment sites < 2 ha, erosion control in the form of stormwater detention is normally not required, provided the on-site minimum runoff retention from a small design rainfall event (typically 5 mm) is achieved under the Water Balance Criteria.' During construction, appropriate erosion and sediment controls will be implemented.
- **Water Quality** – Under the WWFMG, the site is required to target a long-term removal of 80% of total suspended solids (TSS) on an annual loading basis.
- **Water Balance** – The WWFMG requires a site to 'retain stormwater on-site, to the extent practicable, to achieve the same level of annual volume of overland runoff allowable from the development site under pre-development conditions'. According to the guidelines, if the allowable annual runoff volume from the development site under post-development conditions is less than the pre-development conditions, then the maximum allowable annual runoff is 50% of the total average annual rainfall depth. Typically, the minimum on-site runoff retention will require the site to retain all runoff from a 5 mm storm event through infiltration, evapotranspiration or rainwater re-use.
- **Water Quantity Control and Discharge to Municipal Infrastructure** – Runoff from the 2-year to 100-year design storms must not exceed the allowable release rate as stated in the WWFMG. The allowable release rate to the municipal storm sewer system from the development site is the 2-year pre-development flow rate based on a maximum runoff coefficient of 0.50 or the capacity of the receiving sewer, whichever is less.



CLIENT

HOUNSLOW HOLDINGS INC.

TITLE

26–38 HOUNSLOW AVENUE

SITE LOCATION

Checked I.S.	Drawn AutoCAD/B.K.B.
Date MARCH 2024	Proj. No. CA0003234.0568
Scale AS SHOWN	Figure No. 1

FIGURE 1.dwg - 26-36 Hounslow Ave - Site Location C:\Users\CAMN013525\DC\ACCDocs\WSP Canada projects (AMER)\LDO\Files\CA0003234.0568-26 HOUNSLOW AVE\SWM\CAD\FIGURES\ Mar 28, 2024 - 11:11am

2 PRE-DEVELOPMENT CONDITIONS

2.1 General

The overall site area analysed in this report is 0.22 hectares, comprised mostly of soft landscaping, impervious roof areas, and at-grade impervious surfaces. The existing runoff coefficient on site is estimated at 0.45 as shown in **Table 2.1** below.

Table 2.1 Existing Land Use Area Breakdown

Land Use	Area (m^2)	% Coverage	Runoff Coefficient, C
Impervious Roof Area	532	25%	0.90
Soft Landscaping	1,486	69%	0.25
At-Grade Impervious	142	6%	0.90
Total	2,160	100%	0.45

The existing condition of the site is shown in **Figure 2**.

2.2 Rainfall Information

The rainfall intensity for the site was calculated using the following equation:

$$I = AT^C$$

Where;

I = rainfall intensity in mm/hour

T = time of concentration in hours

A and C = constant parameters (see below)

The parameters (A, C) recommended for use by the City of Toronto (per Section 3.1 of the Wet Weather Flow Management Guidelines) are summarized in **Table 2.2.**

Table 2.2 Rainfall Parameters

Return Period (years)	2	5	10	25	50	100
A	21.8	32.0	38.7	45.2	53.5	59.7
C	-0.78	-0.79	-0.80	-0.80	-0.80	-0.80

Source: City of Toronto Wet Weather Flow Management Guidelines (November 2006)

An initial time of concentration, T_C, of 10 minutes (or 0.167 hours) is recommended in the WWFMG document.

2.3 Allowable Flow Rates

The site is located in an area of urban development. As noted in Section 1.4, relevant policies from the WWFMG require the discharge rate from this site to be controlled to the allowable rate for discharge to municipal sewers. The allowable release rate is the 2-year pre-development flow rate to the municipal storm sewer system using a maximum runoff coefficient of 0.50. Based on topography, the existing 0.22 ha site area drains to the storm sewer on Hounslow Ave.

The pre-development peak flow rates from the site are summarized in **Table 2.3**. Detailed calculations are contained within **Appendix A**.

Table 2.3 Allowable Flow Rate Calculations

Return Period (Years)	Rainfall Intensity (mm/hour)	Existing Flow Rate (L/s)	WWFMG Allowable Flow Rate (L/s)
2	88.2	24.0	24.0
5	131.8	35.8	
10	162.3	44.1	
25	189.5	51.5	
50	224.3	61.0	
100	250.3	68.1	

Note: Rational method calculations are based on the 2-year storm event, a run-off co-efficient of 0.45, a site area of 0.22 ha, and a time of concentration of 10 minutes.

TENNNIS COURTS

"SKYVIEW"

CHAINLINK FENCE

IRON FENCE

PARKING

CONCRETE WALL

ASPHALT SIDEWALK

BOARD FENCE

BOARD FENCE

BOARD FENCE

CHAINLINK FENCE

CHAINLINK FENCE

BOARD FENCE

101
0.22
0.45

1 1/2 STOREY
STONE DWELLING
No. 38
FFE=185.69

2 STOREY
STUCCO DWELLING
No. 36
FFE=185.49

2 STOREY
STUCCO DWELLING
No. 28
FFE=185.19

2 STOREY
STUCCO DWELLING
No. 26
FFE=185.12

PORCH

RETAINING WALL

RETAINING WALL

RETAINING WALL

RETAINING WALL

RETAINING WALL

TOP OF BANK

BOTTOM OF BANK

DRIVEWAY
ASPHALT

DRIVEWAY
INTERLOCK

STAIRS

DRIVEWAY
INTERLOCK

DRIVEWAY
INTERLOCK

CHAINLINK FENCE

CURB CUT

CURB CUT

CURB CUT

W INV. 178.77±

E INV. 178.92±

CROWN

CROWN

CURB

CONCRETE SIDEWALK

CONCRETE SIDEWALK

HOUNSLOW AVENUE

32.6m–600ø CONC. STM @ 0.92% ±

STONE WALL

STONE WALL

CONCRETE WALL

CONCRETE SIDEWALK

20.5m–600ø CONC. STM

43.9m–600ø CONC. STM

S INV. 179.94±

N INV. 180.±

S INV. 179.82±

NE INV. 179.44±

NW INV. 179.22±

7.9m–600ø CONC. STM @ 5.00% ±

SE INV. -

MH

LEGEND

- PROPERTY BOUNDARY
- IMPERVIOUS ROOF
- PERVIOUS LANDSCAPE
- AT-GRADE IMPERVIOUS

101 — SUB-CATCHMENT ID.
0.20 — DRAINAGE AREA (ha)
0.83 — RUNOFF COEFFICIENT
OVERLAND DRAINAGE

0 2 4 6 8 10m

No. 23 | No. 21 | No. 19

CLIENT
HOUNSLOW HOLDINGS INC.

TITLE
26–38 HOUNSLOW AVENUE

EXISTING CONDITIONS

wsp

Checked I.S.	Drawn AutoCAD/B.K.B./M.N
Date MARCH 2024	Proj. No. CA0003234.0568
Scale AS SHOWN	Figure No. 2

3 POST-DEVELOPMENT CONDITIONS

3.1 General

The residential development will consist of residential and amenity spaces. The development includes an underground parking garage which spans the majority of the developable site and is connected to the residential building. An area breakdown of the proposed development is provided below in **Table 3.1**. Please refer to **Figure 3** for details of the post-development conditions.

Table 3.1 Proposed Land Use Area Breakdown

Land Use	Area (m^2)	% Coverage	Runoff Coefficient, C
Impervious Roof Area	1,361	63%	0.90
Green Roof Area	306	14%	0.45
Soft Landscaping	135	6%	0.25
At-Grade Impervious	358	17%	0.90
Total	2,160	100%	0.80

3.2 Erosion Control

As mentioned in Section 1.4, this development is an overall small footprint development. According to the WWFMG, 'For small infill/redevelopment sites <2 ha, erosion control in the form of stormwater detention is normally not required, provided the on-site minimum runoff retention from a small design rainfall event (typically 5 mm) is achieved under the Water Balance Criteria.'

The site area for this application is 0.22 ha, which is well below the 2.0 ha guideline. Given that the 5 mm water balance requirement shall be addressed, additional measures for erosion control are not recommended.

3.3 Water Quality Control

The proposed 0.18 ha of roof area, 0.006 ha of soft landscaping, are not prone to sediment generation and may be considered clean for the purposes of water quality control. The remaining 0.030 ha of impervious surfaces are primarily paved walkways and will produce negligible TSS in runoff. Additional quality control measures are not recommended.

3.4 Water Balance

As noted in section 1.4, the WWFMG states that the proponent should target the retention of 5 mm of stormwater runoff from all surfaces, in order to ensure to the extent practical that 50% of the total average rainfall volume is retained on site. Due to the underground parking lot structure, infiltration is not feasible for this project; therefore, water stored for reuse on site is the mechanism proposed to address the water balance requirements.

A stormwater cistern located in the P1 level of underground parking is the mechanism proposed to capture water on site. The runoff from roof and at-grade areas will be directed to the cistern via mechanical and civil systems. The sump of the cistern has been sized to retain the required water balance volume to satisfy the criteria for the entire site.

Table 3.2 sets out the calculation to determine the required retention/reuse volume for the site based on a 5 mm rainfall event. For impervious areas, a standard initial abstraction value of 1 mm has been used. For all pervious areas, a standard initial abstraction value of 5 mm has been used. The calculation determined that the minimum retention storage volume of 6.87 m^3 is required for water balance reuse. Detailed calculations can be found in **Appendix A**.

Table 3.2 Water Balance

Surface Type	Area (m^2)	Initial Abstraction (mm)	Volume Abstracted (m^3)	5 mm Volume (m^3)	Water Balance (m^3)
Impervious Roof	1,409	1	1.36	6.81	5.44
Green Roof	306	5	1.53	1.53	0.00
Soft Landscaping	135	5	0.68	0.68	0.00
At-Grade Impervious	295	1	0.36	1.79	1.43
Totals	**2,160**	**-**	**3.92**	**10.80**	**6.87**

The proposed reuse method for the captured stormwater is irrigation of soft landscaping. Irrigation demands have been provided by the Landscape Architect consultant and can be found in **Appendix C**.

The 72-hour reuse demand of 9.05 m^3 provided by MEP Design consultants in **Appendix C** is shown to be greater than the required water balance of 6.87 m^3. This shows the water balance volume can be used in 72 hours.

3.5 Water Quantity Control

As noted in Section 2.3, the target discharge rate to the municipal storm sewer system from the site is 24.0 L/s. This is equivalent to the peak runoff rate under pre-development conditions during a 2-year design storm event using the existing runoff coefficient of 0.45.

A HydroCAD model of the project was constructed and utilized to determine the required storage volume in the stormwater cistern, and to calculate the discharge rates achieved by the proposed flow controls under all storm events. The Modified Rational Method (an inherent subroutine of the HydroCAD software) has been used for the modelling exercise.

Emergency overflow shall be provided at the top of the cistern, with discharge to grade. This will prevent flow backing up into the building pipework if the primary outlet is blocked, or if a storm event in excess of the 100-year return period occurs.

The cistern was designed to provide a storage volume of 72.0 m^3. It has a base area of 36 m^2 and a height of 2.0 m. The cistern will be located in the underground parking of the building and will collect runoff from all stormwater drainage systems on site. Flow control off-site will be provided by a 75 mm diameter orifice tube with an invert placed at internal bottom of the proposed cistern. The sump volume for water balance is contained within the cistern with a footprint of 17.5 m^2 and a baffle wall height of 0.55 m. It has been sized to hold 9.6 m^3 to satisfy the water balance criteria.

A summary of the modelling results is provided below in **Table 3.3**. Full HydroCAD modelling output is provided in **Appendix B.**

Table 3.3 Summary of Modelling Results

Return Period (Years)	Utilized Storage (m^3)	Peak Water Elevation (m)	Peak Flow Rate (L/s)	WWFMG Allowable Flow Rate (L/s)
2	15.5	0.71	12.8	**24.0**
5	26.3	1.01	15.4	
10	34.1	1.22	17.0	
25	41.4	1.42	18.4	
50	50.8	1.69	20.1	
100	58.0	1.89	21.3	

The sump is assumed to be full during all modelled storm events and is not included in the storm modelling in **Table 3.3** above. The modelling results demonstrate that the post-development peak flow rates for all events up to the 100-year storm are lower than

the target release rate established in **Section 2.3**. The maximum required storage volume to control the 100-year post-development runoff is 58.0 m^3. Note that this simulated situation included a full sump storage volume at the beginning of each rainfall event.

As the flow rates are controlled by the proposed cistern, the rainfall intensity and storm duration resulting in the maximum utilized storage produces the largest flows. This has been iteratively determined at t_d = 19 minutes (for the 100-year event) according to the Modified Rational Method process.

3.6 Hydrogeology & Groundwater Characterization

A hydrogeological investigation was carried out by B.I.G. Consulting Inc in May 2017 with an updated report in November 2019, April 2021, September 2023 and an updated draft report completed March 25th, 2024. It assessed the groundwater conditions, soil characteristics, dewatering requirements, and tested for the presence of groundwater contamination. Groundwater is proposed to be discharged to the sanitary sewer. As groundwater is not proposed to be released through the stormwater system, it will not impact the SWM design. The hydrogeological investigation report will be submitted separately from this report.

TENNNIS COURTS

"SKYVIEW"

CHAINLINK FENCE

IRON FENCE

PARKING

CONCRETE WALL

ASPHALT SIDEWALK

BOARD FENC

39.91

40.81

1.8m

1100mm GLASS BALUSTRADE

DOTTED LINE OF MECHANICAL PENTHOUSE BELOW

EXTENT OF ROOF CANOPY

PRIVATE TERRACE

OUTDOOR AMENITY OPEN TO BELOW

MECHANICAL PENTHOUSE/AMENITY ROOF CANOPY

OUTDOOR MECHANICAL PENTHOUSE OPEN TO BELOW

ELEV 1

201
0.22
0.80

TOTAL GREEN ROOF AREA: 306 m^2

FLAT ROOF

20.5m–600ø CONC. STM

2.4m

S INV. 180.03±

S INV. 179.94±

MH

43.9m–600ø CONC. STM

3.6m

BOTTOM OF BANK

DRIVEWAY ASPHALT

DRIVEWAY INTERLOCK

STAIRS

CHAINLINK FENCE

W INV. 178.77±

E INV. 178.92±

CROWN

STM

PAVEMENT-EDGE

CURB

HOUNSLOW AVENUE

32.6m–600ø CONC. STM @ 0.92% ±

CONCRETE SIDEWALK

GLB (BELL)

GLB (NI)

BELLPED

GLB (HYDRO)

STONE WALL

CONCRETE WALL

E INV. 179.82±

600ø CONC. @ 5.00% ±

NE INV. 179.44±

NW INV. 179.22±

SE INV.

7.9m

No. 19

LEGEND

- PROPERTY BOUNDARY
- IMPERVIOUS ROOF
- PERVIOUS LANDSCAPE
- GREEN ROOF

101 — SUB-CATCHMENT ID.
0.20 — DRAINAGE AREA (ha)
0.83 — RUNOFF COEFFICIENT

0 2 4 6 8 10m

CLIENT: HOUNSLOW HOLDINGS INC.

TITLE: 26–38 HOUNSLOW AVENUE

PROPOSED CONDITIONS

wsp

Checked: I.S.	Drawn: AutoCAD/M.N
Date: MARCH 2024	Proj. No.: CA0003234.0568
Scale: AS SHOWN	Figure No.: 3

4 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION PERIOD

During construction, there is potential for short-term sediment wash-off from the site. To protect the downstream receiving sewer system and other natural features, on-site sediment control measures are necessary during construction.

As sediment and erosion control strategies focus on minimizing adverse environmental impacts by restricting the mobilization and transport of sediment, the following general practices will be observed:

- Sediment and erosion control works, as shown on the project's erosion and sedimentation control plans which will be provided during the detailed design stage, must be in place prior to the commencement of construction, and not removed until the end of the construction period, when the site has been stabilized.
- Construction phasing must be scheduled to minimize the extent and period to which disturbed soils are exposed to weathering. As such, all disturbed areas must be stabilized as quickly as possible. Stabilization of disturbed areas may be accomplished by sodding, seeding, mulching, hydroseeding, planting, or covering of constructed slopes with appropriate material such as geotextile or jute mesh.
- Access to the construction site must be minimized.
- A continuous siltation fence must be constructed along the perimeter of the proposed development. The silt fence must be in place prior to the commencement of construction and must be removed at the end of the construction period.

5 CONCLUSIONS

A stormwater management plan has been prepared to support the ZBA and OPA for the proposed development on Hounslow Avenue between Yonge Street & and Beecroft Road in the City of Toronto. The key points of the SWM strategies are summarized below.

Erosion Control

The development site is below the 2.0 ha erosion control guideline and the on-site minimum retention is achieved under the water balance criteria. Therefore, no further measures are recommended.

Water Quality

Stormwater runoff from the site will not require water quality treatment as the site presents no significant sediment generating surfaces.

Water Balance

Infiltration is not possible due to the underlying parking garage. 9.6 m^3 is retained for reuse within the sump volume of the cistern to satisfy the water balance requirement. The proposed reuse volume shall be used for irrigation.

Water Quantity

Runoff from all areas of the site shall be directed to a 72.0 m^3 cistern located in the underground parking garage. It has a base area of 36.0 m^2 and a height of 2.0 m. Post-development flows for the 2-year to 100-year storms have been controlled with a 75 mm diameter orifice tube.

The report has demonstrated that the proposed SWM strategy will address stormwater management related impacts from this project and meet the intent of the City of Toronto Wet Weather Flow Management Guidelines.

Respectfully submitted,

WSP

APPENDIX

A

Stormwater Management Calculations

Project:	26 - 38 Hounslow Avenue	No.:	CA0003234.0568	
By:	MN	Date:	2024-03-26	Page:
Checked:	IS	Checked:	2024-03-26	1

Subject: **Stormwater Management Calculations - Pre-Development Peak Flow Rate**

Calculation of existing runoff rate is undertaken using the Rational Method: $Q = 2.78CIA$

Where: Q = Peak flow rate (litres/second)
C = Runoff coefficient
I = Rainfall intensity (mm/hour)
A = Catchment area (hectares)

Site Area, A: 0.22 hectares
Pre-Development Runoff Coefficient, C: 0.45

Rainfall intensity calculated in accordance with City of Toronto WWFMG (section 3.1): $I = AT^C$

Where: I = Rainfall Intensity in mm/hr
T = Time of Concentration in minutes, use 10min
A, C = Rainfall Parameters defined in WWFMG section 3.1.

Return Period (Years)	2	5	10	25	50	100
A	21.8	32.0	38.7	45.2	53.5	59.7
B	-0.780	-0.790	-0.800	-0.800	-0.800	-0.800
T (mins) **	10	10	10	10	10	10
T (hrs)	0.167	0.167	0.167	0.167	0.167	0.167
I (mm/hr)	88.2	131.8	162.3	189.5	224.3	250.3
Q (litres/sec)	24.0	35.8	44.1	51.5	61.0	68.1
Q (m^3/sec)	0.024	0.036	0.044	0.052	0.061	0.068

** Note recommended minimum value for time of concentration for small sites (<2.0ha) is 10 minutes.

Project:	26 - 38 Hounslow Avenue	No.:	CA0003234.0568	
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Subject: **Stormwater Management Calculations - Allowable Flow Rates**

Calculation of existing runoff rate is undertaken using the Rational Method: $Q = 2.78CIA$

Where: Q = Peak flow rate (litres/second)
C = Runoff coefficient
I = Rainfall intensity (mm/hour)
A = Catchment area (hectares)

Site Area, A (ha)	0.22
*Runoff Coefficient, C	0.45

* Note - actual site runoff coefficient is approximately 0.45, however City of Toronto WWFMG states maximum runoff coefficient to be used in calculation of pre-development peak flow is 0.50 (section 2.2.3.8).

Rainfall intensity calculated in accordance with City of Toronto WWFMG (section 3.1): $I = AT^C$

Where: I = Rainfall Intensity in mm/hr
T = Time of Concentration in minutes, use 10min
A, C = Rainfall Parameters defined in WWFMG section 3.1.

Return Period (Years)	2
A	21.8
B	-0.78
T (mins) **	10
T (hrs)	0.167
I (mm/hr)	88.2
Q (litres/sec)	**24**
Q (m^3/sec)	0.024

** Note recommended minimum value for time of concentration for small sites (<2.0ha) is 10 minutes.

Allowable release rate to municipal storm sewer system is therefore 24.0 litres/second.
(As per City of Toronto WWFMG section 2.2.3.7)

	Project: 26 - 38 Hounslow Avenue		No.: CA0003234.0568	
	By: MN		Date: 2024-03-26	Page: 3
	Checked: IS		Checked: 2024-03-26	

Subject: **Stormwater Management Calculations - 5 mm Water Balance**

The City of Toronto Wet Weather Flow Management Guidelines (WWFMG) require a site "to retain water on-site to the extent practicable, to achieve the same level of annual volume of overland runoff allowable from the development site under pre-development conditions". - Section 2.2.1.1 (a)
In this case, the minimum on-site runoff retention will require the site to retain all runoff from 5 mm storm event through evapotranspiration infiltration, or rainwater reuse. WWFMG Section 2.2.1.1 (d).

The current area measurements and land use types for the site are as follows:

Land Use	Area (m^2)	Runoff C	Impervious
Impervious Roof Area	1,361	0.90	100%
Green Roof	306	0.45	50%
Soft Landscaping	135	0.25	100%
At Grade Impervious	358	0.90	100%
Totals:	**2,160**	**0.80**	**93%**

Surface Type	Area (m^2)	Initial Abstraction (m)	Volume Abstracted (m^3)	5 mm Volume (m^3)	Water Balance (m^3)
Impervious Roof Area	1,361	0.001	1.36	6.81	5.44
Green Roof	306	0.005	1.53	1.53	0.00
Soft Landscaping	135	0.005	0.68	0.68	0.00
At Grade Impervious	358	0.001	0.36	1.79	1.43
Totals:	**2,160**	**-**	**3.92**	**10.80**	**6.87**

It is assumed that the remaining hard surfaces on the site can abstract 1 mm of rainfall, and that all soft landscaped areas can absorb 5 mm

Therefore, volume of runoff during a 5 mm storm event: **6.87** m^3

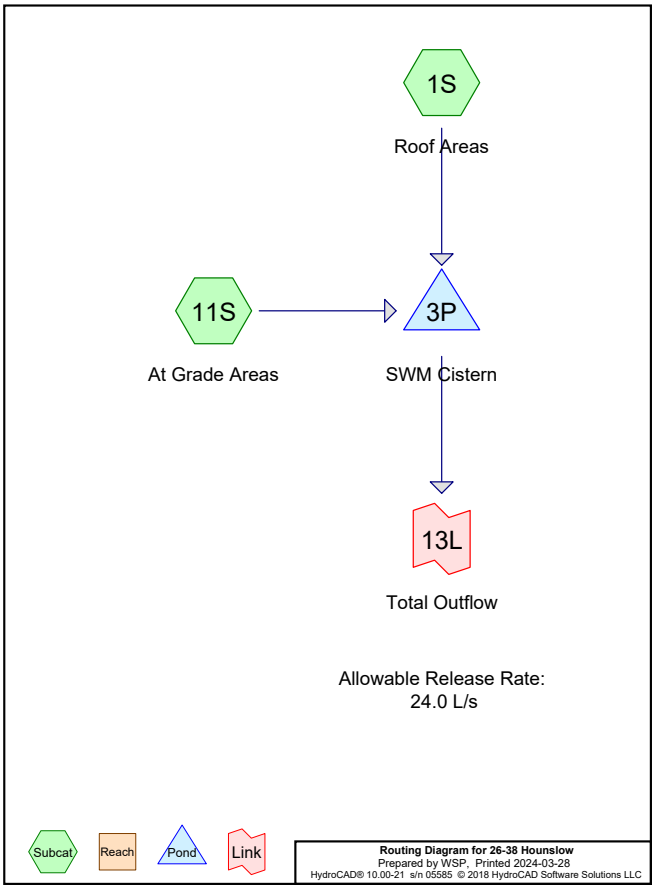
Rainwater will be reused for the purpose of irrigation:

72 Hour Irrigation Demand: **9.05** m^3

APPENDIX

B

Hydrologic Model Output
(HydroCAD)



Area Listing (all nodes)

Area (sq-meters)	C	Description (subcatchment-numbers)
306.0	0.45	Green Roof Area (1S)
358.0	0.90	Impervious At-Grade Area (11S)
1,361.0	0.90	Impervious Roof Area (1S)
135.0	0.25	Soft Landscaped Areas (11S)

Time span=0.00-4.00 hrs, dt=0.01 hrs, 401 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Roof Areas Runoff Area=1,667.0 m² 0.00% Impervious Runoff Depth=14 mm
Tc=10.0 min C=0.82 Runoff=0.0203 m³/s 23.1 m³

Subcatchment11S: At Grade Areas Runoff Area=493.0 m² 0.00% Impervious Runoff Depth=12 mm
Tc=10.0 min C=0.72 Runoff=0.0053 m³/s 6.0 m³

Pond 3P: SWM Cistern Peak Elev=0.706 m Storage=15.5 m³ Inflow=0.0256 m³/s 29.1 m³
Outflow=0.0128 m³/s 29.1 m³

Link 13L: Total Outflow Inflow=0.0128 m³/s 29.1 m³
Primary=0.0128 m³/s 29.1 m³

Summary for Subcatchment 1S: Roof Areas

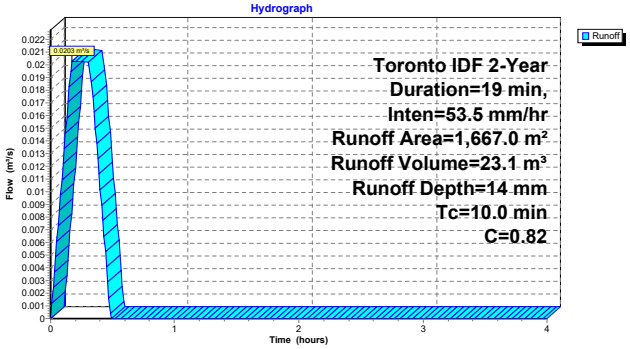
Runoff = 0.0203 m³/s @ 0.17 hrs, Volume= 23.1 m³, Depth= 14 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 2-Year Duration=19 min, Inten=53.5 mm/hr

Area (m²)	C	Description
1,361.0	0.90	Impervious Roof Area
306.0	0.45	Green Roof Area
1,667.0	0.82	Weighted Average
1,667.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Roof Areas



Hydrograph for Subcatchment 1S: Roof Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0024	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0049	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0073	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0097	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0122	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0146	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0170	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0195**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0203**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0203	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0203	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0203	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0203	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0203	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0203	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0199	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0175	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0150	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0126	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0101	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0077	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0053	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0028	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0004	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Subcatchment 11S: At Grade Areas

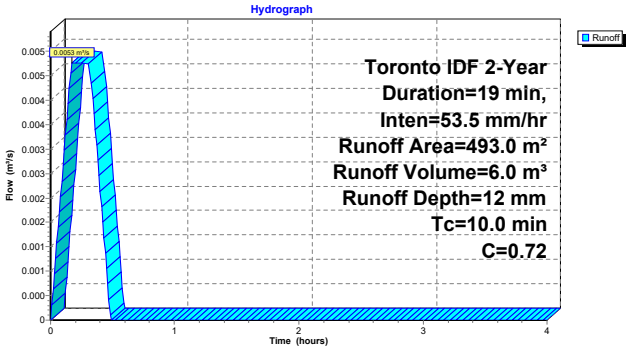
Runoff = 0.0053 m³/s @ 0.17 hrs, Volume= 6.0 m³, Depth= 12 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 2-Year Duration=19 min, Inten=53.5 mm/hr

Area (m²)	C	Description
358.0	0.90	Impervious At-Grade Area
135.0	0.25	Soft Landscaped Areas
493.0	0.72	Weighted Average
493.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 11S: At Grade Areas



Hydrograph for Subcatchment 11S: At Grade Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0006	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0013	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0019	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0025	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0032	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0038	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0044	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0051**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0053**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0053	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0053	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0053	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0053	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0053	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0053	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0052	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0045	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0039	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0033	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0026	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0020	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0014	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0007	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0001	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Pond 3P: SWM Cistern

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 13 mm for 2-Year event
Inflow = 0.0256 m³/s @ 0.17 hrs, Volume= 29.1 m³
Outflow = 0.0128 m³/s @ 0.40 hrs, Volume= 29.1 m³, Atten= 50%, Lag= 13.8 min
Primary = 0.0128 m³/s @ 0.40 hrs, Volume= 29.1 m³

Routing by Stor-Ind method, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Peak Elev= 0.706 m @ 0.40 hrs Surf.Area= 36.0 m² Storage= 15.5 m³

Plug-Flow detention time= 14.6 min calculated for 29.1 m³ (100% of inflow)
Center-of-Mass det. time= 14.8 min (29.3 - 14.5)

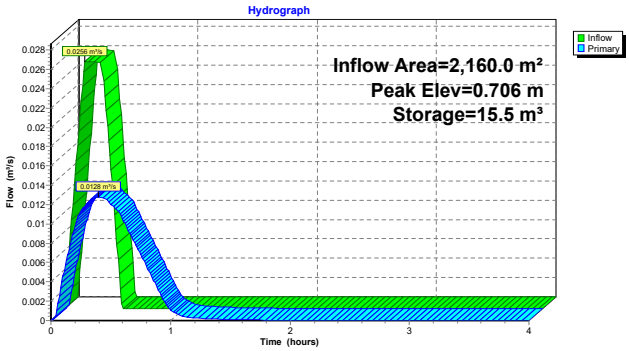
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	62.1 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
0.000	18.0	0.0	0.0
0.550	18.0	9.9	9.9
0.551	36.0	0.0	9.9
2.000	36.0	52.2	62.1

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**75 mm Vert. Orifice Tube/Grate** C= 0.800

Primary OutFlow Max=0.0128 m³/s @ 0.40 hrs HW=0.706 m (Free Discharge)
↳**1=Orifice Tube/Grate** (Orifice Controls 0.0128 m³/s @ 2.90 m/s)

Pond 3P: SWM Cistern



Hydrograph for Pond 3P: SWM Cistern

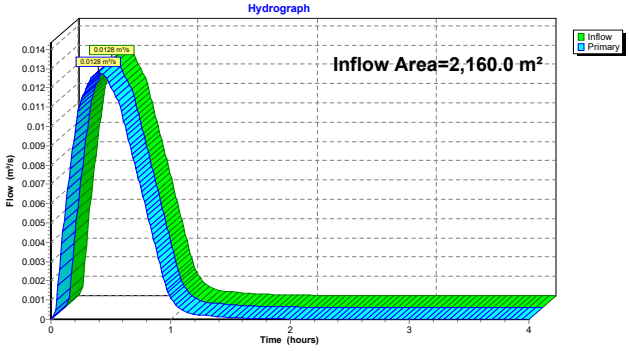
Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	0.000	0.0000
0.10	**0.0153**	2.2	0.122	0.0045
0.20	**0.0256**	7.6	0.420	0.0097
0.30	0.0256	12.8	0.630	0.0120
0.40	0.0128	**15.5**	**0.706**	**0.0128**
0.50	0.0000	12.9	0.634	0.0121
0.60	0.0000	8.8	0.489	0.0105
0.70	0.0000	5.5	0.303	0.0081
0.80	0.0000	3.0	0.166	0.0056
0.90	0.0000	1.4	0.079	0.0032
1.00	0.0000	0.7	0.038	0.0011
1.10	0.0000	0.4	0.023	0.0005
1.20	0.0000	0.3	0.016	0.0003
1.30	0.0000	0.2	0.012	0.0002
1.40	0.0000	0.2	0.008	0.0001
1.50	0.0000	0.1	0.006	0.0001
1.60	0.0000	0.1	0.004	0.0001
1.70	0.0000	0.1	0.003	0.0001
1.80	0.0000	0.0	0.002	0.0000
1.90	0.0000	0.0	0.002	0.0000
2.00	0.0000	0.0	0.001	0.0000
2.10	0.0000	0.0	0.001	0.0000
2.20	0.0000	0.0	0.001	0.0000
2.30	0.0000	0.0	0.000	0.0000
2.40	0.0000	0.0	0.000	0.0000
2.50	0.0000	0.0	0.000	0.0000
2.60	0.0000	0.0	0.000	0.0000
2.70	0.0000	0.0	0.000	0.0000
2.80	0.0000	0.0	0.000	0.0000
2.90	0.0000	0.0	0.000	0.0000
3.00	0.0000	0.0	0.000	0.0000
3.10	0.0000	0.0	0.000	0.0000
3.20	0.0000	0.0	0.000	0.0000
3.30	0.0000	0.0	0.000	0.0000
3.40	0.0000	0.0	0.000	0.0000
3.50	0.0000	0.0	0.000	0.0000
3.60	0.0000	0.0	0.000	0.0000
3.70	0.0000	0.0	0.000	0.0000
3.80	0.0000	0.0	0.000	0.0000
3.90	0.0000	0.0	0.000	0.0000
4.00	0.0000	0.0	0.000	0.0000

Summary for Link 13L: Total Outflow

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 13 mm for 2-Year event
Inflow = 0.0128 m³/s @ 0.40 hrs, Volume= 29.1 m³
Primary = 0.0128 m³/s @ 0.40 hrs, Volume= 29.1 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs

Link 13L: Total Outflow



Hydrograph for Link 13L: Total Outflow

Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)	Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	**0.000**	0.0000	2.60	0.0000	0.000	0.0000
0.05	0.0010	0.000	0.0010	2.65	0.0000	0.000	0.0000
0.10	0.0045	0.000	0.0045	2.70	0.0000	0.000	0.0000
0.15	0.0073	0.000	0.0073	2.75	0.0000	0.000	0.0000
0.20	0.0097	0.000	0.0097	2.80	0.0000	0.000	0.0000
0.25	0.0113	0.000	0.0113	2.85	0.0000	0.000	0.0000
0.30	0.0120	0.000	0.0120	2.90	0.0000	0.000	0.0000
0.35	0.0126	0.000	0.0126	2.95	0.0000	0.000	0.0000
0.40	**0.0128**	0.000	**0.0128**	3.00	0.0000	0.000	0.0000
0.45	0.0126	0.000	0.0126	3.05	0.0000	0.000	0.0000
0.50	0.0121	0.000	0.0121	3.10	0.0000	0.000	0.0000
0.55	0.0115	0.000	0.0115	3.15	0.0000	0.000	0.0000
0.60	0.0105	0.000	0.0105	3.20	0.0000	0.000	0.0000
0.65	0.0093	0.000	0.0093	3.25	0.0000	0.000	0.0000
0.70	0.0081	0.000	0.0081	3.30	0.0000	0.000	0.0000
0.75	0.0068	0.000	0.0068	3.35	0.0000	0.000	0.0000
0.80	0.0056	0.000	0.0056	3.40	0.0000	0.000	0.0000
0.85	0.0044	0.000	0.0044	3.45	0.0000	0.000	0.0000
0.90	0.0032	0.000	0.0032	3.50	0.0000	0.000	0.0000
0.95	0.0019	0.000	0.0019	3.55	0.0000	0.000	0.0000
1.00	0.0011	0.000	0.0011	3.60	0.0000	0.000	0.0000
1.05	0.0007	0.000	0.0007	3.65	0.0000	0.000	0.0000
1.10	0.0005	0.000	0.0005	3.70	0.0000	0.000	0.0000
1.15	0.0003	0.000	0.0003	3.75	0.0000	0.000	0.0000
1.20	0.0003	0.000	0.0003	3.80	0.0000	0.000	0.0000
1.25	0.0002	0.000	0.0002	3.85	0.0000	0.000	0.0000
1.30	0.0002	0.000	0.0002	3.90	0.0000	0.000	0.0000
1.35	0.0002	0.000	0.0002	3.95	0.0000	0.000	0.0000
1.40	0.0001	0.000	0.0001	4.00	0.0000	0.000	0.0000
1.45	0.0001	0.000	0.0001				
1.50	0.0001	0.000	0.0001				
1.55	0.0001	0.000	0.0001				
1.60	0.0001	0.000	0.0001				
1.65	0.0001	0.000	0.0001				
1.70	0.0001	0.000	0.0001				
1.75	0.0000	0.000	0.0000				
1.80	0.0000	0.000	0.0000				
1.85	0.0000	0.000	0.0000				
1.90	0.0000	0.000	0.0000				
1.95	0.0000	0.000	0.0000				
2.00	0.0000	0.000	0.0000				
2.05	0.0000	0.000	0.0000				
2.10	0.0000	0.000	0.0000				
2.15	0.0000	0.000	0.0000				
2.20	0.0000	0.000	0.0000				
2.25	0.0000	0.000	0.0000				
2.30	0.0000	0.000	0.0000				
2.35	0.0000	0.000	0.0000				
2.40	0.0000	0.000	0.0000				
2.45	0.0000	0.000	0.0000				
2.50	0.0000	0.000	0.0000				
2.55	0.0000	0.000	0.0000				

Time span=0.00-4.00 hrs, dt=0.01 hrs, 401 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Roof Areas Runoff Area=1,667.0 m² 0.00% Impervious Runoff Depth=21 mm
Tc=10.0 min C=0.82 Runoff=0.0301 m³/s 34.4 m³

Subcatchment11S: At Grade Areas Runoff Area=493.0 m² 0.00% Impervious Runoff Depth=18 mm
Tc=10.0 min C=0.72 Runoff=0.0078 m³/s 8.9 m³

Pond 3P: SWM Cistern Peak Elev=1.007 m Storage=26.3 m³ Inflow=0.0380 m³/s 43.3 m³
Outflow=0.0154 m³/s 43.3 m³

Link 13L: Total Outflow Inflow=0.0154 m³/s 43.3 m³
Primary=0.0154 m³/s 43.3 m³

Summary for Subcatchment 1S: Roof Areas

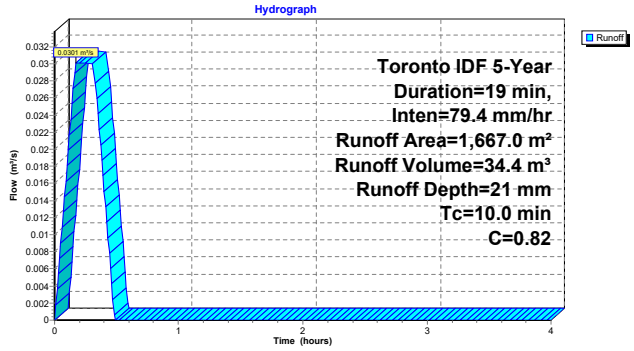
Runoff = 0.0301 m³/s @ 0.17 hrs, Volume= 34.4 m³, Depth= 21 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 5-Year Duration=19 min, Inten=79.4 mm/hr

Area (m²)	C	Description
1,361.0	0.90	Impervious Roof Area
306.0	0.45	Green Roof Area
1,667.0	0.82	Weighted Average
1,667.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 1S: Roof Areas



Hydrograph for Subcatchment 1S: Roof Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0036	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0072	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0108	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0145	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0181	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0217	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0253	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0289**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0301**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0301	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0301	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0301	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0301	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0301	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0301	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0295	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0259	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0223	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0187	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0151	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0115	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0078	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0042	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0006	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Subcatchment 11S: At Grade Areas

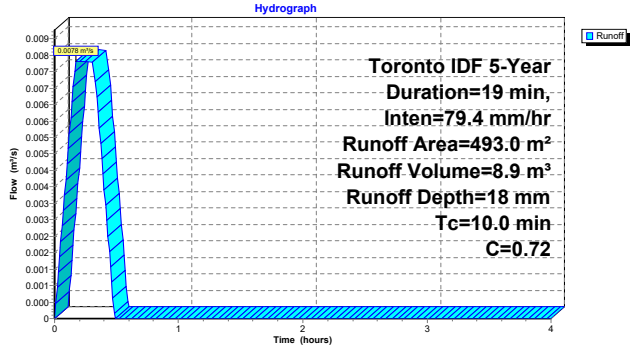
Runoff = 0.0078 m³/s @ 0.17 hrs, Volume= 8.9 m³, Depth= 18 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 5-Year Duration=19 min, Inten=79.4 mm/hr

Area (m²)	C	Description
358.0	0.90	Impervious At-Grade Area
135.0	0.25	Soft Landscaped Areas
493.0	0.72	Weighted Average
493.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 11S: At Grade Areas



Hydrograph for Subcatchment 11S: At Grade Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0009	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0019	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0028	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0038	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0047	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0056	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0066	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0075**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0078**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0078	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0078	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0078	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0078	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0078	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0078	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0077	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0067	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0058	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0049	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0039	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0030	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0020	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0011	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0002	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Pond 3P: SWM Cistern

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 20 mm for 5-Year event
Inflow = 0.0380 m³/s @ 0.17 hrs, Volume= 43.3 m³
Outflow = 0.0154 m³/s @ 0.42 hrs, Volume= 43.3 m³, Atten= 59%, Lag= 14.7 min
Primary = 0.0154 m³/s @ 0.42 hrs, Volume= 43.3 m³

Routing by Stor-Ind method, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Peak Elev= 1.007 m @ 0.42 hrs Surf.Area= 36.0 m² Storage= 26.3 m³

Plug-Flow detention time= 19.7 min calculated for 43.3 m³ (100% of inflow)
Center-of-Mass det. time= 19.6 min (34.1 - 14.5)

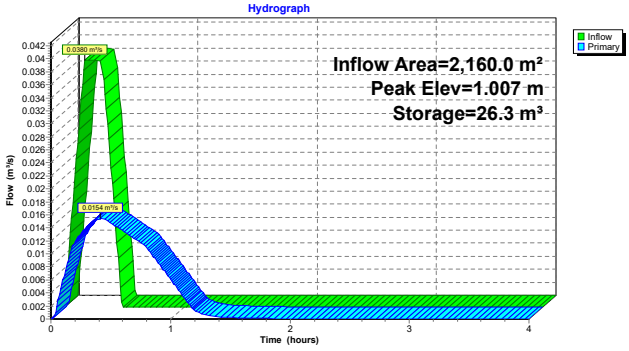
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	62.1 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
0.000	18.0	0.0	0.0
0.550	18.0	9.9	9.9
0.551	36.0	0.0	9.9
2.000	36.0	52.2	62.1

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**75 mm Vert. Orifice Tube/Grate** C= 0.800

Primary OutFlow Max=0.0154 m³/s @ 0.42 hrs HW=1.006 m (Free Discharge)
↑**1=Orifice Tube/Grate** (Orifice Controls 0.0154 m³/s @ 3.49 m/s)

Pond 3P: SWM Cistern



Hydrograph for Pond 3P: SWM Cistern

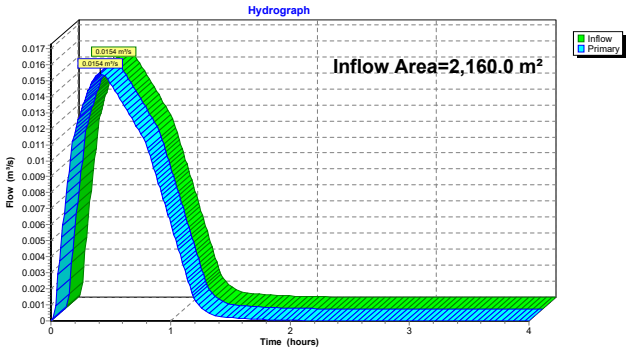
Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	0.000	0.0000
0.10	**0.0228**	3.3	0.182	0.0060
0.20	**0.0380**	11.8	0.603	0.0118
0.30	0.0380	20.8	0.853	0.0141
0.40	0.0190	**26.2**	**1.004**	**0.0154**
0.50	0.0000	**23.6**	**0.931**	**0.0148**
0.60	0.0000	18.5	0.789	0.0136
0.70	0.0000	13.8	0.659	0.0123
0.80	0.0000	9.6	0.534	0.0110
0.90	0.0000	6.1	0.338	0.0086
1.00	0.0000	3.4	0.191	0.0061
1.10	0.0000	1.7	0.093	0.0037
1.20	0.0000	0.8	0.044	0.0014
1.30	0.0000	0.5	0.025	0.0006
1.40	0.0000	0.3	0.018	0.0003
1.50	0.0000	0.2	0.013	0.0002
1.60	0.0000	0.2	0.009	0.0002
1.70	0.0000	0.1	0.006	0.0001
1.80	0.0000	0.1	0.005	0.0001
1.90	0.0000	0.1	0.003	0.0001
2.00	0.0000	0.0	0.002	0.0000
2.10	0.0000	0.0	0.002	0.0000
2.20	0.0000	0.0	0.001	0.0000
2.30	0.0000	0.0	0.001	0.0000
2.40	0.0000	0.0	0.001	0.0000
2.50	0.0000	0.0	0.000	0.0000
2.60	0.0000	0.0	0.000	0.0000
2.70	0.0000	0.0	0.000	0.0000
2.80	0.0000	0.0	0.000	0.0000
2.90	0.0000	0.0	0.000	0.0000
3.00	0.0000	0.0	0.000	0.0000
3.10	0.0000	0.0	0.000	0.0000
3.20	0.0000	0.0	0.000	0.0000
3.30	0.0000	0.0	0.000	0.0000
3.40	0.0000	0.0	0.000	0.0000
3.50	0.0000	0.0	0.000	0.0000
3.60	0.0000	0.0	0.000	0.0000
3.70	0.0000	0.0	0.000	0.0000
3.80	0.0000	0.0	0.000	0.0000
3.90	0.0000	0.0	0.000	0.0000
4.00	0.0000	0.0	0.000	0.0000

Summary for Link 13L: Total Outflow

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 20 mm for 5-Year event
Inflow = 0.0154 m³/s @ 0.42 hrs, Volume= 43.3 m³
Primary = 0.0154 m³/s @ 0.42 hrs, Volume= 43.3 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs

Link 13L: Total Outflow



Hydrograph for Link 13L: Total Outflow

Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)	Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	**0.000**	0.0000	2.60	0.0000	0.000	0.0000
0.05	0.0019	0.000	0.0019	2.65	0.0000	0.000	0.0000
0.10	0.0060	0.000	0.0060	2.70	0.0000	0.000	0.0000
0.15	0.0093	0.000	0.0093	2.75	0.0000	0.000	0.0000
0.20	0.0118	0.000	0.0118	2.80	0.0000	0.000	0.0000
0.25	0.0130	0.000	0.0130	2.85	0.0000	0.000	0.0000
0.30	0.0141	0.000	0.0141	2.90	0.0000	0.000	0.0000
0.35	0.0150	0.000	0.0150	2.95	0.0000	0.000	0.0000
0.40	**0.0154**	0.000	**0.0154**	3.00	0.0000	0.000	0.0000
0.45	**0.0153**	0.000	**0.0153**	3.05	0.0000	0.000	0.0000
0.50	0.0148	0.000	0.0148	3.10	0.0000	0.000	0.0000
0.55	0.0142	0.000	0.0142	3.15	0.0000	0.000	0.0000
0.60	0.0136	0.000	0.0136	3.20	0.0000	0.000	0.0000
0.65	0.0130	0.000	0.0130	3.25	0.0000	0.000	0.0000
0.70	0.0123	0.000	0.0123	3.30	0.0000	0.000	0.0000
0.75	0.0117	0.000	0.0117	3.35	0.0000	0.000	0.0000
0.80	0.0110	0.000	0.0110	3.40	0.0000	0.000	0.0000
0.85	0.0098	0.000	0.0098	3.45	0.0000	0.000	0.0000
0.90	0.0086	0.000	0.0086	3.50	0.0000	0.000	0.0000
0.95	0.0074	0.000	0.0074	3.55	0.0000	0.000	0.0000
1.00	0.0061	0.000	0.0061	3.60	0.0000	0.000	0.0000
1.05	0.0049	0.000	0.0049	3.65	0.0000	0.000	0.0000
1.10	0.0037	0.000	0.0037	3.70	0.0000	0.000	0.0000
1.15	0.0024	0.000	0.0024	3.75	0.0000	0.000	0.0000
1.20	0.0014	0.000	0.0014	3.80	0.0000	0.000	0.0000
1.25	0.0009	0.000	0.0009	3.85	0.0000	0.000	0.0000
1.30	0.0006	0.000	0.0006	3.90	0.0000	0.000	0.0000
1.35	0.0004	0.000	0.0004	3.95	0.0000	0.000	0.0000
1.40	0.0003	0.000	0.0003	4.00	0.0000	0.000	0.0000
1.45	0.0002	0.000	0.0002				
1.50	0.0002	0.000	0.0002				
1.55	0.0002	0.000	0.0002				
1.60	0.0002	0.000	0.0002				
1.65	0.0001	0.000	0.0001				
1.70	0.0001	0.000	0.0001				
1.75	0.0001	0.000	0.0001				
1.80	0.0001	0.000	0.0001				
1.85	0.0001	0.000	0.0001				
1.90	0.0001	0.000	0.0001				
1.95	0.0000	0.000	0.0000				
2.00	0.0000	0.000	0.0000				
2.05	0.0000	0.000	0.0000				
2.10	0.0000	0.000	0.0000				
2.15	0.0000	0.000	0.0000				
2.20	0.0000	0.000	0.0000				
2.25	0.0000	0.000	0.0000				
2.30	0.0000	0.000	0.0000				
2.35	0.0000	0.000	0.0000				
2.40	0.0000	0.000	0.0000				
2.45	0.0000	0.000	0.0000				
2.50	0.0000	0.000	0.0000				
2.55	0.0000	0.000	0.0000				

Time span=0.00-4.00 hrs, dt=0.01 hrs, 401 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Roof Areas Runoff Area=1,667.0 m² 0.00% Impervious Runoff Depth=25 mm
Tc=10.0 min C=0.82 Runoff=0.0369 m³/s 42.0 m³

Subcatchment11S: At Grade Areas Runoff Area=493.0 m² 0.00% Impervious Runoff Depth=22 mm
Tc=10.0 min C=0.72 Runoff=0.0096 m³/s 10.9 m³

Pond 3P: SWM Cistern Peak Elev=1.222 m Storage=34.1 m³ Inflow=0.0464 m³/s 52.9 m³
Outflow=0.0170 m³/s 52.9 m³

Link 13L: Total Outflow Inflow=0.0170 m³/s 52.9 m³
Primary=0.0170 m³/s 52.9 m³

Summary for Subcatchment 1S: Roof Areas

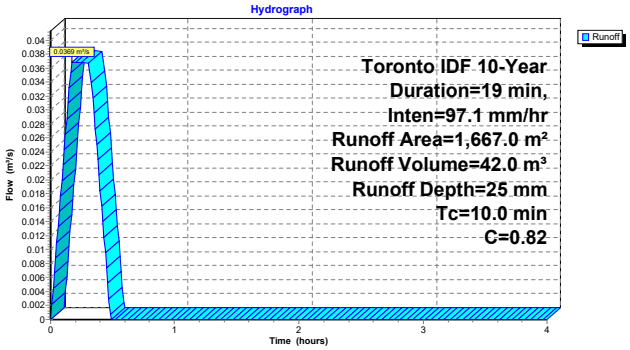
Runoff = 0.0369 m³/s @ 0.17 hrs, Volume= 42.0 m³, Depth= 25 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 10-Year Duration=19 min, Inten=97.1 mm/hr

Area (m²)	C	Description
1,361.0	0.90	Impervious Roof Area
306.0	0.45	Green Roof Area
1,667.0	0.82	Weighted Average
1,667.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Roof Areas



Hydrograph for Subcatchment 1S: Roof Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0044	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0088	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0133	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0177	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0221	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0265	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0310	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0354**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0369**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0369	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0369	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0369	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0369	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0369	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0369	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0361	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0317	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0273	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0229	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0184	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0140	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0096	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0052	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0007	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Subcatchment 11S: At Grade Areas

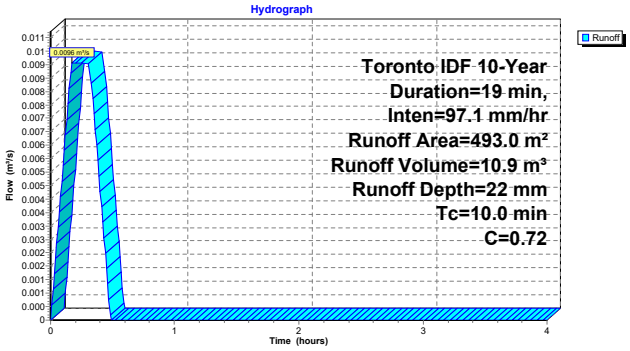
Runoff = 0.0096 m³/s @ 0.17 hrs, Volume= 10.9 m³, Depth= 22 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 10-Year Duration=19 min, Inten=97.1 mm/hr

Area (m²)	C	Description
358.0	0.90	Impervious At-Grade Area
135.0	0.25	Soft Landscaped Areas
493.0	0.72	Weighted Average
493.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 11S: At Grade Areas



Hydrograph for Subcatchment 11S: At Grade Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0011	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0023	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0034	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0046	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0057	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0069	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0080	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0092**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0096**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0096	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0096	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0096	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0096	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0096	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0096	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0094	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0082	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0071	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0059	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0048	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0036	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0025	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0013	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0002	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Pond 3P: SWM Cistern

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 25 mm for 10-Year event
Inflow = 0.0464 m³/s @ 0.17 hrs, Volume= 52.9 m³
Outflow = 0.0170 m³/s @ 0.42 hrs, Volume= 52.9 m³, Atten= 63%, Lag= 15.1 min
Primary = 0.0170 m³/s @ 0.42 hrs, Volume= 52.9 m³

Routing by Stor-Ind method, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Peak Elev= 1.222 m @ 0.42 hrs Surf.Area= 36.0 m² Storage= 34.1 m³

Plug-Flow detention time= 22.4 min calculated for 52.8 m³ (100% of inflow)
Center-of-Mass det. time= 22.6 min (37.1 - 14.5)

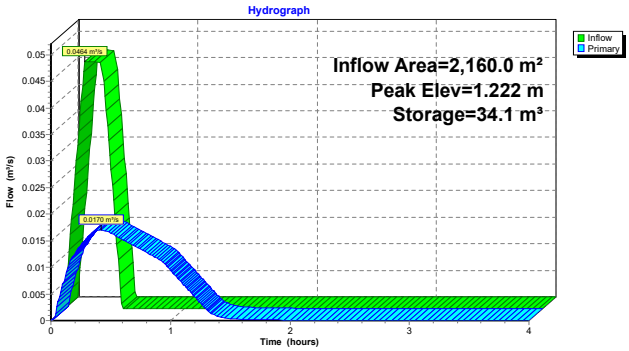
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	62.1 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
0.000	18.0	0.0	0.0
0.550	18.0	9.9	9.9
0.551	36.0	0.0	9.9
2.000	36.0	52.2	62.1

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**75 mm Vert. Orifice Tube/Grate** C= 0.800

Primary OutFlow Max=0.0170 m³/s @ 0.42 hrs HW=1.221 m (Free Discharge)
↳**1=Orifice Tube/Grate** (Orifice Controls 0.0170 m³/s @ 3.86 m/s)

Pond 3P: SWM Cistern



Hydrograph for Pond 3P: SWM Cistern

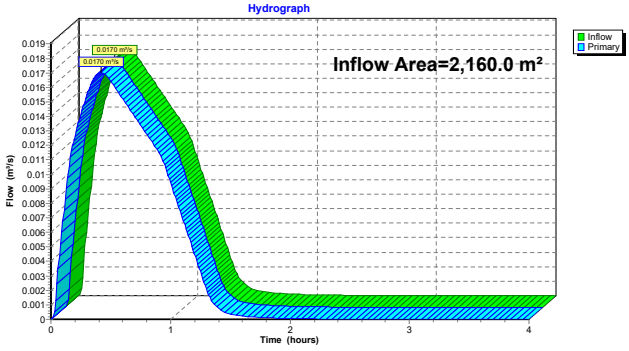
Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	0.000	0.0000
0.10	**0.0279**	4.0	0.225	0.0068
0.20	**0.0464**	14.9	0.688	0.0126
0.30	0.0464	26.5	1.011	0.0154
0.40	0.0232	**33.8**	**1.215**	**0.0170**
0.50	0.0000	**31.2**	**1.143**	**0.0165**
0.60	0.0000	25.5	0.985	0.0152
0.70	0.0000	20.3	0.838	0.0140
0.80	0.0000	15.5	0.704	0.0128
0.90	0.0000	11.1	0.583	0.0116
1.00	0.0000	7.2	0.402	0.0095
1.10	0.0000	4.3	0.238	0.0070
1.20	0.0000	2.2	0.122	0.0046
1.30	0.0000	1.0	0.056	0.0021
1.40	0.0000	0.5	0.030	0.0008
1.50	0.0000	0.4	0.020	0.0003
1.60	0.0000	0.3	0.014	0.0002
1.70	0.0000	0.2	0.010	0.0002
1.80	0.0000	0.1	0.007	0.0001
1.90	0.0000	0.1	0.005	0.0001
2.00	0.0000	0.1	0.004	0.0001
2.10	0.0000	0.0	0.003	0.0000
2.20	0.0000	0.0	0.002	0.0000
2.30	0.0000	0.0	0.001	0.0000
2.40	0.0000	0.0	0.001	0.0000
2.50	0.0000	0.0	0.001	0.0000
2.60	0.0000	0.0	0.000	0.0000
2.70	0.0000	0.0	0.000	0.0000
2.80	0.0000	0.0	0.000	0.0000
2.90	0.0000	0.0	0.000	0.0000
3.00	0.0000	0.0	0.000	0.0000
3.10	0.0000	0.0	0.000	0.0000
3.20	0.0000	0.0	0.000	0.0000
3.30	0.0000	0.0	0.000	0.0000
3.40	0.0000	0.0	0.000	0.0000
3.50	0.0000	0.0	0.000	0.0000
3.60	0.0000	0.0	0.000	0.0000
3.70	0.0000	0.0	0.000	0.0000
3.80	0.0000	0.0	0.000	0.0000
3.90	0.0000	0.0	0.000	0.0000
4.00	0.0000	0.0	0.000	0.0000

Summary for Link 13L: Total Outflow

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 25 mm for 10-Year event
Inflow = 0.0170 m³/s @ 0.42 hrs, Volume= 52.9 m³
Primary = 0.0170 m³/s @ 0.42 hrs, Volume= 52.9 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs

Link 13L: Total Outflow



Hydrograph for Link 13L: Total Outflow

Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)	Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	**0.000**	0.0000	2.60	0.0000	0.000	0.0000
0.05	0.0025	0.000	0.0025	2.65	0.0000	0.000	0.0000
0.10	0.0068	0.000	0.0068	2.70	0.0000	0.000	0.0000
0.15	0.0105	0.000	0.0105	2.75	0.0000	0.000	0.0000
0.20	0.0126	0.000	0.0126	2.80	0.0000	0.000	0.0000
0.25	0.0141	0.000	0.0141	2.85	0.0000	0.000	0.0000
0.30	0.0154	0.000	0.0154	2.90	0.0000	0.000	0.0000
0.35	0.0165	0.000	0.0165	2.95	0.0000	0.000	0.0000
0.40	**0.0170**	0.000	**0.0170**	3.00	0.0000	0.000	0.0000
0.45	**0.0170**	0.000	**0.0170**	3.05	0.0000	0.000	0.0000
0.50	0.0165	0.000	0.0165	3.10	0.0000	0.000	0.0000
0.55	0.0158	0.000	0.0158	3.15	0.0000	0.000	0.0000
0.60	0.0152	0.000	0.0152	3.20	0.0000	0.000	0.0000
0.65	0.0146	0.000	0.0146	3.25	0.0000	0.000	0.0000
0.70	0.0140	0.000	0.0140	3.30	0.0000	0.000	0.0000
0.75	0.0134	0.000	0.0134	3.35	0.0000	0.000	0.0000
0.80	0.0128	0.000	0.0128	3.40	0.0000	0.000	0.0000
0.85	0.0122	0.000	0.0122	3.45	0.0000	0.000	0.0000
0.90	0.0116	0.000	0.0116	3.50	0.0000	0.000	0.0000
0.95	0.0107	0.000	0.0107	3.55	0.0000	0.000	0.0000
1.00	0.0095	0.000	0.0095	3.60	0.0000	0.000	0.0000
1.05	0.0082	0.000	0.0082	3.65	0.0000	0.000	0.0000
1.10	0.0070	0.000	0.0070	3.70	0.0000	0.000	0.0000
1.15	0.0058	0.000	0.0058	3.75	0.0000	0.000	0.0000
1.20	0.0046	0.000	0.0046	3.80	0.0000	0.000	0.0000
1.25	0.0033	0.000	0.0033	3.85	0.0000	0.000	0.0000
1.30	0.0021	0.000	0.0021	3.90	0.0000	0.000	0.0000
1.35	0.0012	0.000	0.0012	3.95	0.0000	0.000	0.0000
1.40	0.0008	0.000	0.0008	4.00	0.0000	0.000	0.0000
1.45	0.0005	0.000	0.0005				
1.50	0.0003	0.000	0.0003				
1.55	0.0003	0.000	0.0003				
1.60	0.0002	0.000	0.0002				
1.65	0.0002	0.000	0.0002				
1.70	0.0002	0.000	0.0002				
1.75	0.0001	0.000	0.0001				
1.80	0.0001	0.000	0.0001				
1.85	0.0001	0.000	0.0001				
1.90	0.0001	0.000	0.0001				
1.95	0.0001	0.000	0.0001				
2.00	0.0001	0.000	0.0001				
2.05	0.0001	0.000	0.0001				
2.10	0.0000	0.000	0.0000				
2.15	0.0000	0.000	0.0000				
2.20	0.0000	0.000	0.0000				
2.25	0.0000	0.000	0.0000				
2.30	0.0000	0.000	0.0000				
2.35	0.0000	0.000	0.0000				
2.40	0.0000	0.000	0.0000				
2.45	0.0000	0.000	0.0000				
2.50	0.0000	0.000	0.0000				
2.55	0.0000	0.000	0.0000				

Time span=0.00-4.00 hrs, dt=0.01 hrs, 401 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Roof Areas Runoff Area=1,667.0 m² 0.00% Impervious Runoff Depth=29 mm
Tc=10.0 min C=0.82 Runoff=0.0431 m³/s 49.1 m³

Subcatchment11S: At Grade Areas Runoff Area=493.0 m² 0.00% Impervious Runoff Depth=26 mm
Tc=10.0 min C=0.72 Runoff=0.0112 m³/s 12.7 m³

Pond 3P: SWM Cistern Peak Elev=1.424 m Storage=41.4 m³ Inflow=0.0542 m³/s 61.8 m³
Outflow=0.0184 m³/s 61.8 m³

Link 13L: Total Outflow Inflow=0.0184 m³/s 61.8 m³
Primary=0.0184 m³/s 61.8 m³

Summary for Subcatchment 1S: Roof Areas

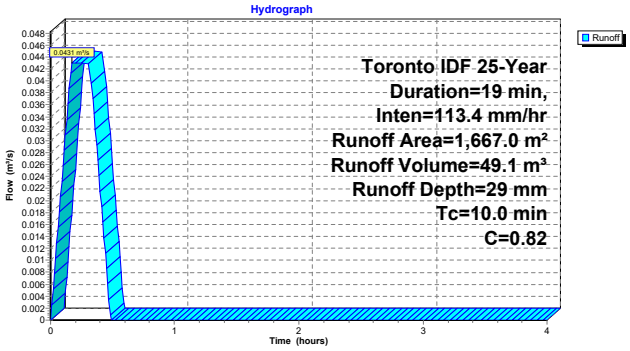
Runoff = 0.0431 m³/s @ 0.17 hrs, Volume= 49.1 m³, Depth= 29 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 25-Year Duration=19 min, Inten=113.4 mm/hr

Area (m²)	C	Description
1,361.0	0.90	Impervious Roof Area
306.0	0.45	Green Roof Area
1,667.0	0.82	Weighted Average
1,667.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 1S: Roof Areas



Hydrograph for Subcatchment 1S: Roof Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0052	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0103	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0155	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0207	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0258	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0310	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0362	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0413**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0431**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0431	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0431	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0431	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0431	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0431	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0431	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0422	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0370	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0319	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0267	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0215	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0164	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0112	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0060	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0009	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Subcatchment 11S: At Grade Areas

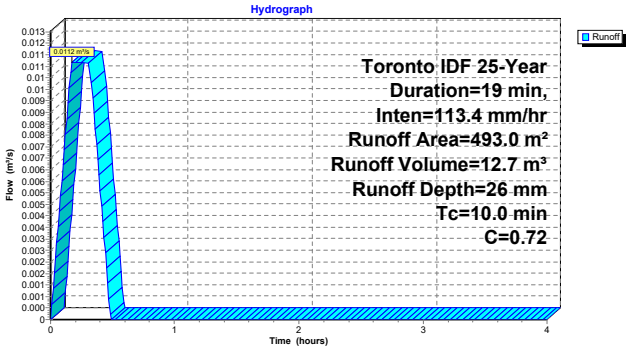
Runoff = 0.0112 m³/s @ 0.17 hrs, Volume= 12.7 m³, Depth= 26 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 25-Year Duration=19 min, Inten=113.4 mm/hr

Area (m²)	C	Description
358.0	0.90	Impervious At-Grade Area
135.0	0.25	Soft Landscaped Areas
493.0	0.72	Weighted Average
493.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 11S: At Grade Areas



Hydrograph for Subcatchment 11S: At Grade Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0013	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0027	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0040	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0054	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0067	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0081	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0094	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0107**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0112**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0112	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0112	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0112	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0112	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0112	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0112	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0110	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0096	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0083	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0069	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0056	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0042	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0029	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0016	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0002	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Pond 3P: SWM Cistern

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 29 mm for 25-Year event
Inflow = 0.0542 m³/s @ 0.17 hrs, Volume= 61.8 m³
Outflow = 0.0184 m³/s @ 0.43 hrs, Volume= 61.8 m³, Atten= 66%, Lag= 15.4 min
Primary = 0.0184 m³/s @ 0.43 hrs, Volume= 61.8 m³

Routing by Stor-Ind method, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Peak Elev= 1.424 m @ 0.43 hrs Surf.Area= 36.0 m² Storage= 41.4 m³

Plug-Flow detention time= 25.0 min calculated for 61.7 m³ (100% of inflow)
Center-of-Mass det. time= 25.2 min (39.7 - 14.5)

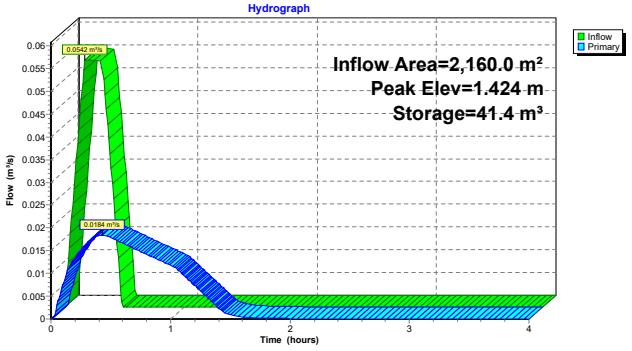
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	62.1 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
0.000	18.0	0.0	0.0
0.550	18.0	9.9	9.9
0.551	36.0	0.0	9.9
2.000	36.0	52.2	62.1

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**75 mm Vert. Orifice Tube/Grate** C= 0.800

Primary OutFlow Max=0.0184 m³/s @ 0.43 hrs HW=1.424 m (Free Discharge)
↑**1=Orifice Tube/Grate** (Orifice Controls 0.0184 m³/s @ 4.17 m/s)

Pond 3P: SWM Cistern



Hydrograph for Pond 3P: SWM Cistern

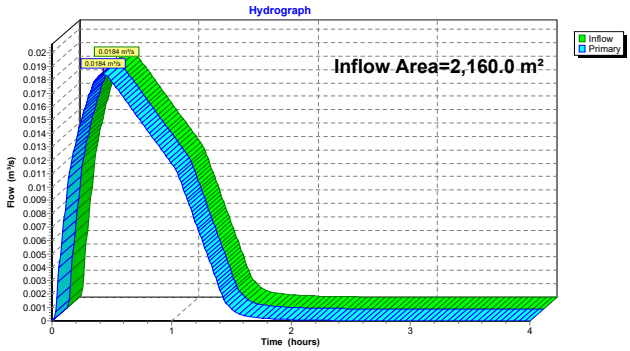
Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	0.000	0.0000
0.10	**0.0325**	4.8	0.264	0.0075
0.20	**0.0542**	17.7	0.768	0.0134
0.30	0.0542	31.8	1.160	0.0166
0.40	0.0271	**40.9**	**1.412**	**0.0184**
0.50	0.0000	**38.4**	**1.343**	**0.0179**
0.60	0.0000	32.2	1.170	0.0167
0.70	0.0000	26.4	1.010	0.0154
0.80	0.0000	21.1	0.861	0.0142
0.90	0.0000	16.2	0.725	0.0130
1.00	0.0000	11.8	0.602	0.0118
1.10	0.0000	7.8	0.434	0.0099
1.20	0.0000	4.7	0.261	0.0074
1.30	0.0000	2.5	0.138	0.0050
1.40	0.0000	1.1	0.063	0.0025
1.50	0.0000	0.6	0.033	0.0009
1.60	0.0000	0.4	0.021	0.0004
1.70	0.0000	0.3	0.015	0.0003
1.80	0.0000	0.2	0.011	0.0002
1.90	0.0000	0.1	0.008	0.0001
2.00	0.0000	0.1	0.005	0.0001
2.10	0.0000	0.1	0.004	0.0001
2.20	0.0000	0.1	0.003	0.0000
2.30	0.0000	0.0	0.002	0.0000
2.40	0.0000	0.0	0.001	0.0000
2.50	0.0000	0.0	0.001	0.0000
2.60	0.0000	0.0	0.001	0.0000
2.70	0.0000	0.0	0.001	0.0000
2.80	0.0000	0.0	0.000	0.0000
2.90	0.0000	0.0	0.000	0.0000
3.00	0.0000	0.0	0.000	0.0000
3.10	0.0000	0.0	0.000	0.0000
3.20	0.0000	0.0	0.000	0.0000
3.30	0.0000	0.0	0.000	0.0000
3.40	0.0000	0.0	0.000	0.0000
3.50	0.0000	0.0	0.000	0.0000
3.60	0.0000	0.0	0.000	0.0000
3.70	0.0000	0.0	0.000	0.0000
3.80	0.0000	0.0	0.000	0.0000
3.90	0.0000	0.0	0.000	0.0000
4.00	0.0000	0.0	0.000	0.0000

Summary for Link 13L: Total Outflow

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 29 mm for 25-Year event
Inflow = 0.0184 m³/s @ 0.43 hrs, Volume= 61.8 m³
Primary = 0.0184 m³/s @ 0.43 hrs, Volume= 61.8 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs

Link 13L: Total Outflow



Hydrograph for Link 13L: Total Outflow

Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)	Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	**0.000**	0.0000	2.60	0.0000	0.000	0.0000
0.05	0.0029	0.000	0.0029	2.65	0.0000	0.000	0.0000
0.10	0.0075	0.000	0.0075	2.70	0.0000	0.000	0.0000
0.15	0.0114	0.000	0.0114	2.75	0.0000	0.000	0.0000
0.20	0.0134	0.000	0.0134	2.80	0.0000	0.000	0.0000
0.25	0.0151	0.000	0.0151	2.85	0.0000	0.000	0.0000
0.30	0.0166	0.000	0.0166	2.90	0.0000	0.000	0.0000
0.35	0.0178	0.000	0.0178	2.95	0.0000	0.000	0.0000
0.40	**0.0184**	0.000	**0.0184**	3.00	0.0000	0.000	0.0000
0.45	**0.0184**	0.000	**0.0184**	3.05	0.0000	0.000	0.0000
0.50	0.0179	0.000	0.0179	3.10	0.0000	0.000	0.0000
0.55	0.0173	0.000	0.0173	3.15	0.0000	0.000	0.0000
0.60	0.0167	0.000	0.0167	3.20	0.0000	0.000	0.0000
0.65	0.0160	0.000	0.0160	3.25	0.0000	0.000	0.0000
0.70	0.0154	0.000	0.0154	3.30	0.0000	0.000	0.0000
0.75	0.0148	0.000	0.0148	3.35	0.0000	0.000	0.0000
0.80	0.0142	0.000	0.0142	3.40	0.0000	0.000	0.0000
0.85	0.0136	0.000	0.0136	3.45	0.0000	0.000	0.0000
0.90	0.0130	0.000	0.0130	3.50	0.0000	0.000	0.0000
0.95	0.0124	0.000	0.0124	3.55	0.0000	0.000	0.0000
1.00	0.0118	0.000	0.0118	3.60	0.0000	0.000	0.0000
1.05	0.0111	0.000	0.0111	3.65	0.0000	0.000	0.0000
1.10	0.0099	0.000	0.0099	3.70	0.0000	0.000	0.0000
1.15	0.0086	0.000	0.0086	3.75	0.0000	0.000	0.0000
1.20	0.0074	0.000	0.0074	3.80	0.0000	0.000	0.0000
1.25	0.0062	0.000	0.0062	3.85	0.0000	0.000	0.0000
1.30	0.0050	0.000	0.0050	3.90	0.0000	0.000	0.0000
1.35	0.0037	0.000	0.0037	3.95	0.0000	0.000	0.0000
1.40	0.0025	0.000	0.0025	4.00	0.0000	0.000	0.0000
1.45	0.0014	0.000	0.0014				
1.50	0.0009	0.000	0.0009				
1.55	0.0006	0.000	0.0006				
1.60	0.0004	0.000	0.0004				
1.65	0.0003	0.000	0.0003				
1.70	0.0003	0.000	0.0003				
1.75	0.0002	0.000	0.0002				
1.80	0.0002	0.000	0.0002				
1.85	0.0002	0.000	0.0002				
1.90	0.0001	0.000	0.0001				
1.95	0.0001	0.000	0.0001				
2.00	0.0001	0.000	0.0001				
2.05	0.0001	0.000	0.0001				
2.10	0.0001	0.000	0.0001				
2.15	0.0001	0.000	0.0001				
2.20	0.0000	0.000	0.0000				
2.25	0.0000	0.000	0.0000				
2.30	0.0000	0.000	0.0000				
2.35	0.0000	0.000	0.0000				
2.40	0.0000	0.000	0.0000				
2.45	0.0000	0.000	0.0000				
2.50	0.0000	0.000	0.0000				
2.55	0.0000	0.000	0.0000				

Time span=0.00-4.00 hrs, dt=0.01 hrs, 401 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Roof Areas Runoff Area=1,667.0 m² 0.00% Impervious Runoff Depth=35 mm
Tc=10.0 min C=0.82 Runoff=0.0510 m³/s 58.1 m³

Subcatchment11S: At Grade Areas Runoff Area=493.0 m² 0.00% Impervious Runoff Depth=31 mm
Tc=10.0 min C=0.72 Runoff=0.0132 m³/s 15.1 m³

Pond 3P: SWM Cistern Peak Elev=1.686 m Storage=50.8 m³ Inflow=0.0642 m³/s 73.2 m³
Outflow=0.0201 m³/s 73.2 m³

Link 13L: Total Outflow Inflow=0.0201 m³/s 73.2 m³
Primary=0.0201 m³/s 73.2 m³

Summary for Subcatchment 1S: Roof Areas

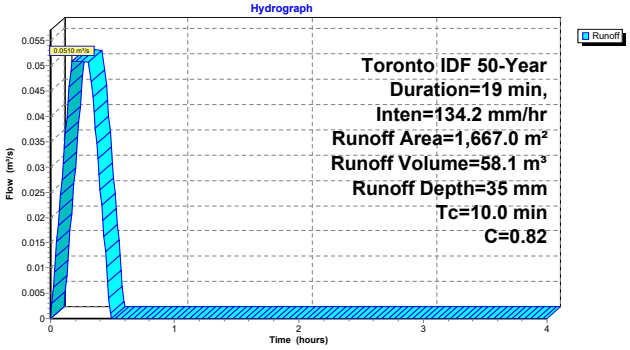
Runoff = 0.0510 m³/s @ 0.17 hrs, Volume= 58.1 m³, Depth= 35 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 50-Year Duration=19 min, Inten=134.2 mm/hr

Area (m²)	C	Description
1,361.0	0.90	Impervious Roof Area
306.0	0.45	Green Roof Area
1,667.0	0.82	Weighted Average
1,667.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Roof Areas



Hydrograph for Subcatchment 1S: Roof Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0061	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0122	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0183	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0245	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0306	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0367	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0428	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0489**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0510**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0510	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0510	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0510	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0510	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0510	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0510	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0500	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0438	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0377	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0316	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0255	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0194	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0133	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0071	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0010	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Subcatchment 11S: At Grade Areas

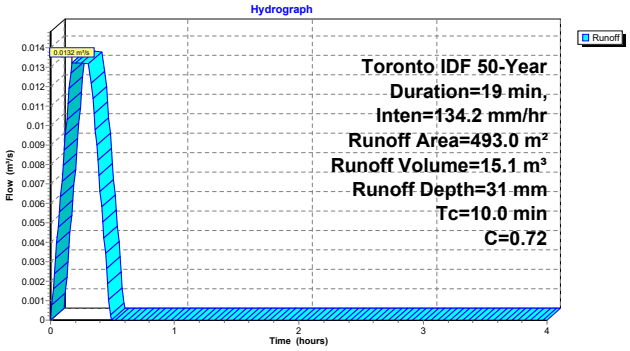
Runoff = 0.0132 m³/s @ 0.17 hrs, Volume= 15.1 m³, Depth= 31 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 50-Year Duration=19 min, Inten=134.2 mm/hr

Area (m²)	C	Description
358.0	0.90	Impervious At-Grade Area
135.0	0.25	Soft Landscaped Areas
493.0	0.72	Weighted Average
493.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 11S: At Grade Areas



Hydrograph for Subcatchment 11S: At Grade Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0016	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0032	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0048	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0064	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0079	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0095	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0111	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0127**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0132**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0132	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0132	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0132	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0132	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0132	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0132	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0130	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0114	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0098	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0082	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0066	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0050	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0034	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0019	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0003	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Pond 3P: SWM Cistern

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 34 mm for 50-Year event
Inflow = 0.0642 m³/s @ 0.17 hrs, Volume= 73.2 m³
Outflow = 0.0201 m³/s @ 0.43 hrs, Volume= 73.2 m³, Atten= 69%, Lag= 15.7 min
Primary = 0.0201 m³/s @ 0.43 hrs, Volume= 73.2 m³

Routing by Stor-Ind method, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Peak Elev= 1.686 m @ 0.43 hrs Surf.Area= 36.0 m² Storage= 50.8 m³

Plug-Flow detention time= 28.4 min calculated for 73.2 m³ (100% of inflow)
Center-of-Mass det. time= 28.3 min (42.8 - 14.5)

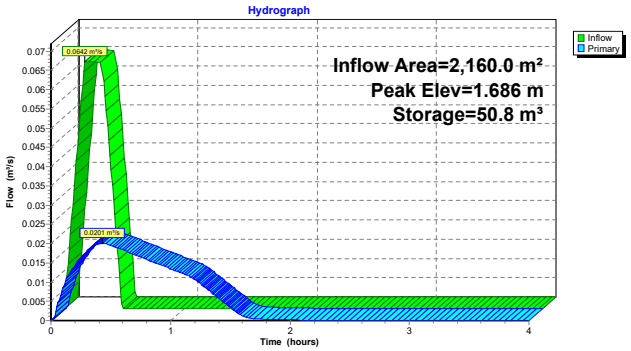
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	62.1 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
0.000	18.0	0.0	0.0
0.550	18.0	9.9	9.9
0.551	36.0	0.0	9.9
2.000	36.0	52.2	62.1

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**75 mm Vert. Orifice Tube/Grate** C= 0.800

Primary OutFlow Max=0.0201 m³/s @ 0.43 hrs HW=1.686 m (Free Discharge)
↳**1=Orifice Tube/Grate** (Orifice Controls 0.0201 m³/s @ 4.55 m/s)

Pond 3P: SWM Cistern



Hydrograph for Pond 3P: SWM Cistern

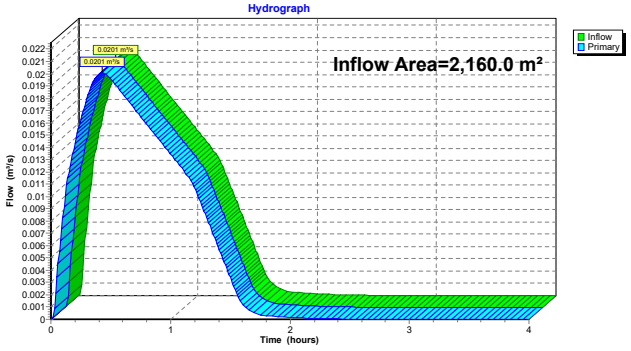
Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	0.000	0.0000
0.10	**0.0385**	5.7	0.316	0.0083
0.20	**0.0642**	21.5	0.872	0.0143
0.30	0.0642	38.7	1.352	0.0179
0.40	0.0321	**50.1**	**1.668**	**0.0200**
0.50	0.0000	**47.8**	**1.602**	**0.0196**
0.60	0.0000	40.9	1.412	0.0184
0.70	0.0000	34.6	1.235	0.0171
0.80	0.0000	28.6	1.070	0.0159
0.90	0.0000	23.1	0.917	0.0147
1.00	0.0000	18.0	0.776	0.0135
1.10	0.0000	13.4	0.648	0.0122
1.20	0.0000	9.2	0.513	0.0108
1.30	0.0000	5.8	0.322	0.0083
1.40	0.0000	3.2	0.179	0.0059
1.50	0.0000	1.5	0.086	0.0034
1.60	0.0000	0.7	0.041	0.0013
1.70	0.0000	0.4	0.024	0.0005
1.80	0.0000	0.3	0.017	0.0003
1.90	0.0000	0.2	0.012	0.0002
2.00	0.0000	0.2	0.009	0.0001
2.10	0.0000	0.1	0.006	0.0001
2.20	0.0000	0.1	0.004	0.0001
2.30	0.0000	0.1	0.003	0.0001
2.40	0.0000	0.0	0.002	0.0000
2.50	0.0000	0.0	0.002	0.0000
2.60	0.0000	0.0	0.001	0.0000
2.70	0.0000	0.0	0.001	0.0000
2.80	0.0000	0.0	0.001	0.0000
2.90	0.0000	0.0	0.000	0.0000
3.00	0.0000	0.0	0.000	0.0000
3.10	0.0000	0.0	0.000	0.0000
3.20	0.0000	0.0	0.000	0.0000
3.30	0.0000	0.0	0.000	0.0000
3.40	0.0000	0.0	0.000	0.0000
3.50	0.0000	0.0	0.000	0.0000
3.60	0.0000	0.0	0.000	0.0000
3.70	0.0000	0.0	0.000	0.0000
3.80	0.0000	0.0	0.000	0.0000
3.90	0.0000	0.0	0.000	0.0000
4.00	0.0000	0.0	0.000	0.0000

Summary for Link 13L: Total Outflow

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 34 mm for 50-Year event
Inflow = 0.0201 m³/s @ 0.43 hrs, Volume= 73.2 m³
Primary = 0.0201 m³/s @ 0.43 hrs, Volume= 73.2 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs

Link 13L: Total Outflow



Hydrograph for Link 13L: Total Outflow

Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)	Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	**0.000**	0.0000	2.60	0.0000	0.000	0.0000
0.05	0.0034	0.000	0.0034	2.65	0.0000	0.000	0.0000
0.10	0.0083	0.000	0.0083	2.70	0.0000	0.000	0.0000
0.15	0.0120	0.000	0.0120	2.75	0.0000	0.000	0.0000
0.20	0.0143	0.000	0.0143	2.80	0.0000	0.000	0.0000
0.25	0.0163	0.000	0.0163	2.85	0.0000	0.000	0.0000
0.30	0.0179	0.000	0.0179	2.90	0.0000	0.000	0.0000
0.35	0.0193	0.000	0.0193	2.95	0.0000	0.000	0.0000
0.40	**0.0200**	0.000	**0.0200**	3.00	0.0000	0.000	0.0000
0.45	**0.0201**	0.000	**0.0201**	3.05	0.0000	0.000	0.0000
0.50	0.0196	0.000	0.0196	3.10	0.0000	0.000	0.0000
0.55	0.0190	0.000	0.0190	3.15	0.0000	0.000	0.0000
0.60	0.0184	0.000	0.0184	3.20	0.0000	0.000	0.0000
0.65	0.0177	0.000	0.0177	3.25	0.0000	0.000	0.0000
0.70	0.0171	0.000	0.0171	3.30	0.0000	0.000	0.0000
0.75	0.0165	0.000	0.0165	3.35	0.0000	0.000	0.0000
0.80	0.0159	0.000	0.0159	3.40	0.0000	0.000	0.0000
0.85	0.0153	0.000	0.0153	3.45	0.0000	0.000	0.0000
0.90	0.0147	0.000	0.0147	3.50	0.0000	0.000	0.0000
0.95	0.0141	0.000	0.0141	3.55	0.0000	0.000	0.0000
1.00	0.0135	0.000	0.0135	3.60	0.0000	0.000	0.0000
1.05	0.0128	0.000	0.0128	3.65	0.0000	0.000	0.0000
1.10	0.0122	0.000	0.0122	3.70	0.0000	0.000	0.0000
1.15	0.0116	0.000	0.0116	3.75	0.0000	0.000	0.0000
1.20	0.0108	0.000	0.0108	3.80	0.0000	0.000	0.0000
1.25	0.0096	0.000	0.0096	3.85	0.0000	0.000	0.0000
1.30	0.0083	0.000	0.0083	3.90	0.0000	0.000	0.0000
1.35	0.0071	0.000	0.0071	3.95	0.0000	0.000	0.0000
1.40	0.0059	0.000	0.0059	4.00	0.0000	0.000	0.0000
1.45	0.0047	0.000	0.0047				
1.50	0.0034	0.000	0.0034				
1.55	0.0022	0.000	0.0022				
1.60	0.0013	0.000	0.0013				
1.65	0.0008	0.000	0.0008				
1.70	0.0005	0.000	0.0005				
1.75	0.0003	0.000	0.0003				
1.80	0.0003	0.000	0.0003				
1.85	0.0002	0.000	0.0002				
1.90	0.0002	0.000	0.0002				
1.95	0.0002	0.000	0.0002				
2.00	0.0001	0.000	0.0001				
2.05	0.0001	0.000	0.0001				
2.10	0.0001	0.000	0.0001				
2.15	0.0001	0.000	0.0001				
2.20	0.0001	0.000	0.0001				
2.25	0.0001	0.000	0.0001				
2.30	0.0001	0.000	0.0001				
2.35	0.0000	0.000	0.0000				
2.40	0.0000	0.000	0.0000				
2.45	0.0000	0.000	0.0000				
2.50	0.0000	0.000	0.0000				
2.55	0.0000	0.000	0.0000				

Time span=0.00-4.00 hrs, dt=0.01 hrs, 401 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Roof Areas Runoff Area=1,667.0 m² 0.00% Impervious Runoff Depth=39 mm
Tc=10.0 min C=0.82 Runoff=0.0569 m³/s 64.8 m³

Subcatchment11S: At Grade Areas Runoff Area=493.0 m² 0.00% Impervious Runoff Depth=34 mm
Tc=10.0 min C=0.72 Runoff=0.0148 m³/s 16.8 m³

Pond 3P: SWM Cistern Peak Elev=1.885 m Storage=58.0 m³ Inflow=0.0716 m³/s 81.7 m³
Outflow=0.0213 m³/s 81.7 m³

Link 13L: Total Outflow Inflow=0.0213 m³/s 81.7 m³
Primary=0.0213 m³/s 81.7 m³

Summary for Subcatchment 1S: Roof Areas

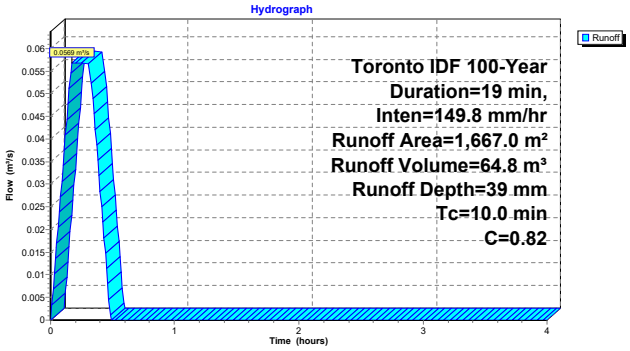
Runoff = 0.0569 m³/s @ 0.17 hrs, Volume= 64.8 m³, Depth= 39 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 100-Year Duration=19 min, Inten=149.8 mm/hr

Area (m²)	C	Description
1,361.0	0.90	Impervious Roof Area
306.0	0.45	Green Roof Area
1,667.0	0.82	Weighted Average
1,667.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 1S: Roof Areas



Hydrograph for Subcatchment 1S: Roof Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0068	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0137	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0205	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0273	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0341	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0410	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0478	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0546**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0569**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0569	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0569	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0569	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0569	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0569	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0569	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0557	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0489	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0421	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0353	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0284	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0216	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0148	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0080	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0011	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Subcatchment 11S: At Grade Areas

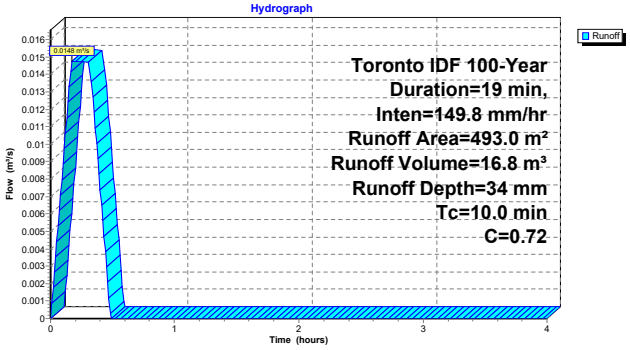
Runoff = 0.0148 m³/s @ 0.17 hrs, Volume= 16.8 m³, Depth= 34 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Toronto IDF 100-Year Duration=19 min, Inten=149.8 mm/hr

Area (m²)	C	Description
358.0	0.90	Impervious At-Grade Area
135.0	0.25	Soft Landscaped Areas
493.0	0.72	Weighted Average
493.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 11S: At Grade Areas



Hydrograph for Subcatchment 11S: At Grade Areas

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	1.04	0.0000	2.08	0.0000	3.12	0.0000
0.02	0.0018	1.06	0.0000	2.10	0.0000	3.14	0.0000
0.04	0.0035	1.08	0.0000	2.12	0.0000	3.16	0.0000
0.06	0.0053	1.10	0.0000	2.14	0.0000	3.18	0.0000
0.08	0.0071	1.12	0.0000	2.16	0.0000	3.20	0.0000
0.10	0.0089	1.14	0.0000	2.18	0.0000	3.22	0.0000
0.12	0.0106	1.16	0.0000	2.20	0.0000	3.24	0.0000
0.14	0.0124	1.18	0.0000	2.22	0.0000	3.26	0.0000
0.16	**0.0142**	1.20	0.0000	2.24	0.0000	3.28	0.0000
0.18	**0.0148**	1.22	0.0000	2.26	0.0000	3.30	0.0000
0.20	0.0148	1.24	0.0000	2.28	0.0000	3.32	0.0000
0.22	0.0148	1.26	0.0000	2.30	0.0000	3.34	0.0000
0.24	0.0148	1.28	0.0000	2.32	0.0000	3.36	0.0000
0.26	0.0148	1.30	0.0000	2.34	0.0000	3.38	0.0000
0.28	0.0148	1.32	0.0000	2.36	0.0000	3.40	0.0000
0.30	0.0148	1.34	0.0000	2.38	0.0000	3.42	0.0000
0.32	0.0145	1.36	0.0000	2.40	0.0000	3.44	0.0000
0.34	0.0127	1.38	0.0000	2.42	0.0000	3.46	0.0000
0.36	0.0109	1.40	0.0000	2.44	0.0000	3.48	0.0000
0.38	0.0092	1.42	0.0000	2.46	0.0000	3.50	0.0000
0.40	0.0074	1.44	0.0000	2.48	0.0000	3.52	0.0000
0.42	0.0056	1.46	0.0000	2.50	0.0000	3.54	0.0000
0.44	0.0038	1.48	0.0000	2.52	0.0000	3.56	0.0000
0.46	0.0021	1.50	0.0000	2.54	0.0000	3.58	0.0000
0.48	0.0003	1.52	0.0000	2.56	0.0000	3.60	0.0000
0.50	0.0000	1.54	0.0000	2.58	0.0000	3.62	0.0000
0.52	0.0000	1.56	0.0000	2.60	0.0000	3.64	0.0000
0.54	0.0000	1.58	0.0000	2.62	0.0000	3.66	0.0000
0.56	0.0000	1.60	0.0000	2.64	0.0000	3.68	0.0000
0.58	0.0000	1.62	0.0000	2.66	0.0000	3.70	0.0000
0.60	0.0000	1.64	0.0000	2.68	0.0000	3.72	0.0000
0.62	0.0000	1.66	0.0000	2.70	0.0000	3.74	0.0000
0.64	0.0000	1.68	0.0000	2.72	0.0000	3.76	0.0000
0.66	0.0000	1.70	0.0000	2.74	0.0000	3.78	0.0000
0.68	0.0000	1.72	0.0000	2.76	0.0000	3.80	0.0000
0.70	0.0000	1.74	0.0000	2.78	0.0000	3.82	0.0000
0.72	0.0000	1.76	0.0000	2.80	0.0000	3.84	0.0000
0.74	0.0000	1.78	0.0000	2.82	0.0000	3.86	0.0000
0.76	0.0000	1.80	0.0000	2.84	0.0000	3.88	0.0000
0.78	0.0000	1.82	0.0000	2.86	0.0000	3.90	0.0000
0.80	0.0000	1.84	0.0000	2.88	0.0000	3.92	0.0000
0.82	0.0000	1.86	0.0000	2.90	0.0000	3.94	0.0000
0.84	0.0000	1.88	0.0000	2.92	0.0000	3.96	0.0000
0.86	0.0000	1.90	0.0000	2.94	0.0000	3.98	0.0000
0.88	0.0000	1.92	0.0000	2.96	0.0000	4.00	0.0000
0.90	0.0000	1.94	0.0000	2.98	0.0000		
0.92	0.0000	1.96	0.0000	3.00	0.0000		
0.94	0.0000	1.98	0.0000	3.02	0.0000		
0.96	0.0000	2.00	0.0000	3.04	0.0000		
0.98	0.0000	2.02	0.0000	3.06	0.0000		
1.00	0.0000	2.04	0.0000	3.08	0.0000		
1.02	0.0000	2.06	0.0000	3.10	0.0000		

Summary for Pond 3P: SWM Cistern

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 38 mm for 100-Year event
Inflow = 0.0716 m³/s @ 0.17 hrs, Volume= 81.7 m³
Outflow = 0.0213 m³/s @ 0.43 hrs, Volume= 81.7 m³, Atten= 70%, Lag= 15.8 min
Primary = 0.0213 m³/s @ 0.43 hrs, Volume= 81.7 m³

Routing by Stor-Ind method, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs
Peak Elev= 1.885 m @ 0.43 hrs Surf.Area= 36.0 m² Storage= 58.0 m³

Plug-Flow detention time= 30.5 min calculated for 81.7 m³ (100% of inflow)
Center-of-Mass det. time= 30.4 min (44.9 - 14.5)

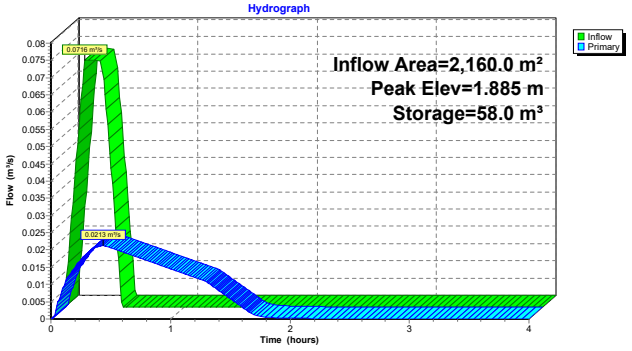
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	62.1 m³	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
0.000	18.0	0.0	0.0
0.550	18.0	9.9	9.9
0.551	36.0	0.0	9.9
2.000	36.0	52.2	62.1

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	**75 mm Vert. Orifice Tube/Grate** C= 0.800

Primary OutFlow Max=0.0213 m³/s @ 0.43 hrs HW=1.885 m (Free Discharge)
↑**1=Orifice Tube/Grate** (Orifice Controls 0.0213 m³/s @ 4.82 m/s)

Pond 3P: SWM Cistern



Hydrograph for Pond 3P: SWM Cistern

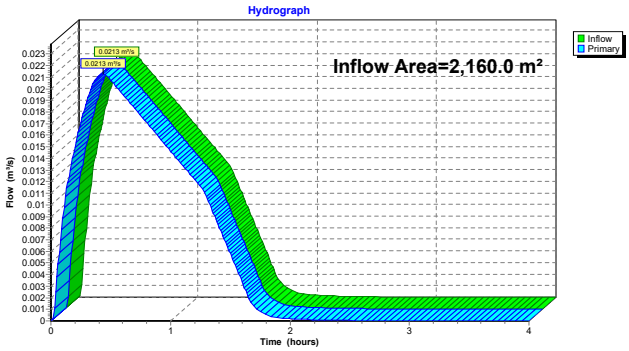
Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	0.000	0.0000
0.10	**0.0430**	6.4	0.355	0.0088
0.20	**0.0716**	24.3	0.950	0.0150
0.30	0.0716	44.0	1.496	0.0189
0.40	0.0358	**57.1**	**1.860**	**0.0211**
0.50	0.0000	**54.8**	**1.799**	**0.0208**
0.60	0.0000	47.6	1.597	0.0196
0.70	0.0000	40.8	1.408	0.0183
0.80	0.0000	34.4	1.231	0.0171
0.90	0.0000	28.5	1.066	0.0159
1.00	0.0000	23.0	0.913	0.0146
1.10	0.0000	17.9	0.773	0.0134
1.20	0.0000	13.3	0.645	0.0122
1.30	0.0000	9.1	0.508	0.0107
1.40	0.0000	5.7	0.317	0.0083
1.50	0.0000	3.2	0.176	0.0058
1.60	0.0000	1.5	0.084	0.0034
1.70	0.0000	0.7	0.040	0.0012
1.80	0.0000	0.4	0.024	0.0005
1.90	0.0000	0.3	0.017	0.0003
2.00	0.0000	0.2	0.012	0.0002
2.10	0.0000	0.2	0.009	0.0001
2.20	0.0000	0.1	0.006	0.0001
2.30	0.0000	0.1	0.004	0.0001
2.40	0.0000	0.1	0.003	0.0001
2.50	0.0000	0.0	0.002	0.0000
2.60	0.0000	0.0	0.002	0.0000
2.70	0.0000	0.0	0.001	0.0000
2.80	0.0000	0.0	0.001	0.0000
2.90	0.0000	0.0	0.001	0.0000
3.00	0.0000	0.0	0.000	0.0000
3.10	0.0000	0.0	0.000	0.0000
3.20	0.0000	0.0	0.000	0.0000
3.30	0.0000	0.0	0.000	0.0000
3.40	0.0000	0.0	0.000	0.0000
3.50	0.0000	0.0	0.000	0.0000
3.60	0.0000	0.0	0.000	0.0000
3.70	0.0000	0.0	0.000	0.0000
3.80	0.0000	0.0	0.000	0.0000
3.90	0.0000	0.0	0.000	0.0000
4.00	0.0000	0.0	0.000	0.0000

Summary for Link 13L: Total Outflow

Inflow Area = 2,160.0 m², 0.00% Impervious, Inflow Depth = 38 mm for 100-Year event
Inflow = 0.0213 m³/s @ 0.43 hrs, Volume= 81.7 m³
Primary = 0.0213 m³/s @ 0.43 hrs, Volume= 81.7 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-4.00 hrs, dt= 0.01 hrs

Link 13L: Total Outflow



Hydrograph for Link 13L: Total Outflow

Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)	Time (hours)	Inflow (m³/s)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	**0.000**	0.0000	2.60	0.0000	0.000	0.0000
0.05	0.0038	0.000	0.0038	2.65	0.0000	0.000	0.0000
0.10	0.0088	0.000	0.0088	2.70	0.0000	0.000	0.0000
0.15	0.0124	0.000	0.0124	2.75	0.0000	0.000	0.0000
0.20	0.0150	0.000	0.0150	2.80	0.0000	0.000	0.0000
0.25	0.0171	0.000	0.0171	2.85	0.0000	0.000	0.0000
0.30	0.0189	0.000	0.0189	2.90	0.0000	0.000	0.0000
0.35	0.0204	0.000	0.0204	2.95	0.0000	0.000	0.0000
0.40	**0.0211**	0.000	**0.0211**	3.00	0.0000	0.000	0.0000
0.45	**0.0212**	0.000	**0.0212**	3.05	0.0000	0.000	0.0000
0.50	0.0208	0.000	0.0208	3.10	0.0000	0.000	0.0000
0.55	0.0202	0.000	0.0202	3.15	0.0000	0.000	0.0000
0.60	0.0196	0.000	0.0196	3.20	0.0000	0.000	0.0000
0.65	0.0189	0.000	0.0189	3.25	0.0000	0.000	0.0000
0.70	0.0183	0.000	0.0183	3.30	0.0000	0.000	0.0000
0.75	0.0177	0.000	0.0177	3.35	0.0000	0.000	0.0000
0.80	0.0171	0.000	0.0171	3.40	0.0000	0.000	0.0000
0.85	0.0165	0.000	0.0165	3.45	0.0000	0.000	0.0000
0.90	0.0159	0.000	0.0159	3.50	0.0000	0.000	0.0000
0.95	0.0153	0.000	0.0153	3.55	0.0000	0.000	0.0000
1.00	0.0146	0.000	0.0146	3.60	0.0000	0.000	0.0000
1.05	0.0140	0.000	0.0140	3.65	0.0000	0.000	0.0000
1.10	0.0134	0.000	0.0134	3.70	0.0000	0.000	0.0000
1.15	0.0128	0.000	0.0128	3.75	0.0000	0.000	0.0000
1.20	0.0122	0.000	0.0122	3.80	0.0000	0.000	0.0000
1.25	0.0116	0.000	0.0116	3.85	0.0000	0.000	0.0000
1.30	0.0107	0.000	0.0107	3.90	0.0000	0.000	0.0000
1.35	0.0095	0.000	0.0095	3.95	0.0000	0.000	0.0000
1.40	0.0083	0.000	0.0083	4.00	0.0000	0.000	0.0000
1.45	0.0071	0.000	0.0071				
1.50	0.0058	0.000	0.0058				
1.55	0.0046	0.000	0.0046				
1.60	0.0034	0.000	0.0034				
1.65	0.0021	0.000	0.0021				
1.70	0.0012	0.000	0.0012				
1.75	0.0008	0.000	0.0008				
1.80	0.0005	0.000	0.0005				
1.85	0.0003	0.000	0.0003				
1.90	0.0003	0.000	0.0003				
1.95	0.0002	0.000	0.0002				
2.00	0.0002	0.000	0.0002				
2.05	0.0002	0.000	0.0002				
2.10	0.0001	0.000	0.0001				
2.15	0.0001	0.000	0.0001				
2.20	0.0001	0.000	0.0001				
2.25	0.0001	0.000	0.0001				
2.30	0.0001	0.000	0.0001				
2.35	0.0001	0.000	0.0001				
2.40	0.0001	0.000	0.0001				
2.45	0.0000	0.000	0.0000				
2.50	0.0000	0.000	0.0000				
2.55	0.0000	0.000	0.0000				

APPENDIX

C Water Reuse Demand

MEPDESIGN 20 Years of Excellence 1999-2019
LANDSCAPE ARCHITECTS

22 Mar 2024

Risto Ylipahkala, P.Eng
WSP

RE: ***26-38 Hounslow Ave - Proposed Residential Development***
Reuse of Collected Storm Water for Landscape Maintenance Purposes

Dear Mr. Ylipahkala,

We are writing to confirm that we have fully coordinated our drawings with WSP and as a result have designated an Irrigation System to be hose bib and water supply line for landscape maintenance and watering of the landscape plant material proposed to be installed throughout the site.

The water supply will be pumped from the water storage cistern located in the underground parking garage. The hose bid and water supply line will be located on an exterior wall to facilitate the future condominium maintenance staff and irrigation requirements.

The calculations, based on the proposed Landscape Plan, for water supply as part of a future landscape watering program are as follows:

Total landscape area requiring daily watering: 296.8 square meters (Ground + Outdoor amenity Areas)
Total landscape area requiring daily watering: 306.4 square meters (Green Roof)

Ground + Outdoor - Volume of irrigation required per day (5mm):	4.45 cubic M
Green Roof - Volume of irrigation required per day (5mm):	4.60 cubic M
Total water required in a 72 Hour Period:	**9.05 cubic M**

Respectfully,

Michael E. Presutti, OALA CSLA
Principal, MEP Design Inc.

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
MICHAEL E. PRESUTTI
OALA
MEMBER

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