Functional Servicing and Stormwater Management Report In Support of Re-Zoning Durham Live Tourist Destination City of Pickering

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1.0 INTRODUCTION

Sabourin Kimble & Associates has been retained by Pickering Developments (401) Inc., Pickering Developments (Bayly) Inc., and Pickering Developments (Squires) Inc. (collectively referred to as 'Pickering Developments') to complete a Functional Servicing and Stormwater Management Report ('FSSR') in support of re-zoning on the portion of the lands currently zoned UR (Urban Reserve).

This investigation includes examination of water supply and sanitary and storm drainage including preliminary design for each service internal to the site. A preliminary stormwater management ('SWM') analysis has been carried out and includes the identification of site constraints and criteria, consideration of water balance and groundwater infiltration techniques, plus a description of the overall stormwater management works. Construction management is also addressed within this report.

2.0 STUDY AREA

The Durham Live Tourist Destination site is located in the City of Pickering, at the northwest corner of Church Street and Bayly Street. The subject lands are approximately 91.6 ha in size and are bounded by Church Street to the east, Bayly Street to the south, Highway 401 and the CN/Metrolinx rail corridor to the north and a CN Rail spur to the west. Squires Beach Road bisects the site in a north south direction, and Kellino Street runs east west through the site from Church Street to Squires Beach Road. Kellino Street is currently a municipal road, but will be transferred to the developer and used in the Durham Live development.

The Study Area covered by this report encompasses the lands bounded by Squires Beach Road to the west, Church Street to the east, Bayly Street to the south, and the CN/Metrolinx rail corridor to the north. Within these boundaries, all lands outside of 120 m from the limits of the Provincially Significant Wetland ('PSW') have been zoned Major Tourist Destination ('MTD'). The portion of the lands falling within 120 m of the PSW limits are currently zoned UR (Urban Reserve). The purpose of the report is to support the re-zoning application to extend the MTD designation to all lands outside of 30 m from the PSW limits except for a small parcel of land at the northeast corner of the property that falls within the floodplain of Duffins Creek. This small parcel, as well as the lands within 30 m of the PSW limits are proposed to be rezoned Natural Heritage System ('NHS').

Within the Study Area, there are several Districts, illustrated on **Figure 1**. These include a Market and Entertainment District east of the PSW and south of Kellino Street, a Phase 1 Film Studio District in the central portion of the site, and a Phase 2 Film Studio District in the western portion of the site adjacent to Squires Beach Road. There is also a future parking lot proposed on the north side of Kellino Street west of the Casino District.

LEGEND:

- STUDY AREA
- EXISTING ZONING LIMIT
- BUFFER LIMIT

SCALE N.T.S.

DURHAM LIVE RE-ZONING APPLICATION
- STUDY AREA

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CONSULTING ENGINEERS

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3.0 SUPPORTING STUDIES

3.1 Environmental Impact Study; Beacon Environmental Limited (February 2020)

Beacon Environmental Limited has completed an Environmental Impact Study ('EIS') characterizing the natural heritage features in the Study Area, assessing the potential environmental impacts of the proposed development, and making recommendations for impact mitigation and net effects. Beacon's study concluded that there will be no negative impacts on the PSWs, endangered or threatened species, fish habitat, significant woodland or valleyland or their ecological functions resulting from the proposed development provided that certain mitigation measures are implemented. These mitigation measures include protection of the features from development, 30 m buffers to wetlands and 10 m buffers to woodlands, Low Impact Development ('LID') measures to ensure that pre-development hydrological function of the wetlands is maintained, restoration plantings in buffer areas, and implementation of a monitoring plan.

3.2 Hydrogeological Assessment - Durham Live! Tourist Destination Lands, Re-Zoning Application; Palmer (February 2020)

Palmer has completed a hydrological assessment of the property in support of the application to re-zone the lands within 120 m of the PSW from UR to MTD. As part of the hydrogeological assessment, a Feature Based Water Budget (FBWB) was completed to assess the impact of the proposed development on infiltration and runoff to the three (3) PSWs located within the Study Area as identified in the EIS. The FBWB assessed pre-development, post-development without mitigation and post-development with LIDs. The report concludes that under the post-development with LID scenario, there is a 35% increase in infiltration and a 3% decrease in runoff volume to the Eastern SWD3-2 Wetland within Catchment C2; a 0% change in both infiltration and runoff volume to the Central SWD3-2 Wetland within Catchment C4; and an increase of 182% and 120% for runoff volume and infiltration, respectively, for the Western MAS2-1 Wetland within Catchment C4.

4.0 DEVELOPMENT CONCEPT

Several major tourist destination uses are currently being developed on, or have been proposed for development in the Study Area, including a casino, hotel, performing arts venue, and film studios. Additional uses that may be developed in the future may include a convention centre, additional hotels, amphitheatre, cinema, restaurant plaza, waterpark, arena, botanical gardens, offices, recreational facilities, places of amusement, private clubs, ancillary retail sales, and other uses permitted by the zoning by-law.

A Master Plan has been prepared for the Study Area to demonstrate conceptually how the variety of uses and internal road network could be located and integrated on the site. The concept is illustrated on **Figure 1**.

Construction is underway in the Casino District and a site lan application has been made to the City for development in the Phase 1 Film Studio District. Site plan applications have not yet been made for the Phase 2 Film Studio District or the Market and Entertainment District. Consequently, the building locations and internal road network that are shown in these Districts are conceptual only and provided at this time for planning and design purposes.

5.0 DEVELOPMENT CONSTRAINTS AND LIMITS

5.1 Natural Heritage Features

The natural heritage features on the site are being inventoried and assessed by Beacon Environmental. As described in the EIS prepared by Beacon Environmental, dated February 2020, the site contains three separate tributaries of Duffins Creek and associated swamp (wetland) forests. The forested swamp communities comprise part of the Lower Duffins Creek Wetland Complex, which is classified as a PSW by the Ministry of Natural Resources (MNR). The natural heritage features are delineated in **Figure 1**.

The remainder of the site consists of cultivated and uncultivated fields, and the Casino District that is currently under construction.

5.2 Limit of Development

In general, a buffer is proposed that provides for the greater of 30 m from the limit of the PSW, or 10 m from the dripline. The limit of the buffer is an irregular line that is difficult to match as a limit of development. Proposed curbs for the parking lots and roads will be set outside of the buffer. A flat boulevard area will also be set outside of the buffer, adjacent to all curbs (2 m wide for parking lots, 3 m wide for roads) to allow for a transition to the proposed top of slope and some snow storage. Given the irregularity of the buffer line, the distance from the curb and boulevard to the buffer will vary. Because of this variance, the 3:1 slope that is required to match existing grade will fall within the buffer in some locations. It is expected that this slope will be vegetated with native plantings. The proposed toe of slope will be a minimum of 10 m from the dripline.

6.0 SITE TOPOGRAPHY AND GRADING

6.1 Existing Site Topography

As described in the EIS, the Study Area is comprised of a series of drumlin-like features that run in a north-south direction and direct runoff internally to ephemeral drainage features and watercourses or low-lying areas. The ephemeral drainage features and watercourses convey flow in a northern direction towards CN/Metrolinx rail corridor where two (2) distinct drainage outlets exist; Culvert C04 (Outlet 1) and Culvert C05 (Outlet 2). The existing culverts were previously named and inventoried by AECOM (formerly URS) as part of the Highway 401, Brock Road to Courtice Road Class Environmental Assessment, 2015 ('Highway 401 Class EA'). **Figure 2** (back pocket) illustrates the outlet locations, existing drainage patterns and catchment boundaries.

As shown, Catchments C1 and C2 convey stormwater runoff internally towards low-lying areas in the centre of the catchments. Here, the stormwater runoff is contained; however, if the areas surcharge, the topographical survey indicates that both catchments will discharge flows to Bayly Street's existing north roadside ditch. The surcharge from Catchments C1 and C2 combine with flows generated from Catchment C4 and are conveyed towards Outlet 1/ Culvert C04.

Catchments C5 and C6 drain internally towards ephemeral drainage features. Catchment C5 discharges directly to Outlet 2/Culvert C05 while Catchment C6 discharges flows to a ditch on the south side of CN/Metrolinx rail corridor which is then conveyed to Outlet 2.

A small area in the northeast corner of the Study Area, south of CN/Metrolinx rail corridor and west of Church Street, flows toward Church Street where it is captured and conveyed to the Duffins Creek via ditches under the Church Street overpass.

6.2 Proposed Grading

As shown in **Figure 3** (back pocket), the site grading for the Study Area has been designed to meet the City of Pickering's site grading criteria while matching existing grades at the limits of development.

Existing elevations will be matched at boundary roads and within the buffers. As referenced in **Section 5.2**, the limit of the buffer is an irregular line that is difficult to match as a limit of development. Proposed curbs for the parking lots and roads will be set outside of the buffer. A flat boulevard area will also be set outside of the buffer, adjacent to all curbs (2 m wide for

parking lots, 3 m wide for roads) to allow for a transition to the proposed top of slope and some snow storage. Given the irregularity of the buffer line, the distance from the curb and boulevard to the buffer will vary. Because of this variance, the 3:1 slope that is required to match existing grade will fall within the buffer in some locations. It is expected that this slope will be vegetated with native plantings. The proposed toe of slope will be a minimum of 10 m from the dripline.

Some re-grading within the Kellino Street road allowance is proposed in order to accommodate the development of adjacent lands. Proposed road grades will range from 0.5% to 5.0%.

The site grading plan for the Casino District (designed by R. J. Burnside & Associates) north of Kellino Street is being implemented.

Site grading plans for the Phase 1 Film Studio District have been submitted to the City of Pickering with the site plan application and are currently under review.

Detailed grading plans for the Phase 2 Film Studio District and the Market and Entertainment District will be prepared at a later date when site plan applications are submitted to the City of Pickering for site-specific developments within these Districts .

7.0 STORMWATER MANAGEMENT CRITERIA

7.1 Water Quality Control

TRCA's Stormwater Management Criteria dated August 2012 ('TRCA's SWM Criteria') requires that all stormwater runoff from new developments be designed to satisfy Enhanced Level of Protection, 80% removal of total suspended solids ('TSS'), as per the most current criteria established in the MOE's Stormwater Management Practices Planning and Design Manual dated March 2003 ('MOE SWM Manual').

7.2 Erosion Control

In order to offset downstream erosion potential, TRCA's SWM Criteria requires that runoff from a 25 mm storm must be detained and discharged over a period of 48 hours (minimum).

7.3 Water Quantity Control

The Study Area is located within the lower reaches of the Duffins Creek watershed. Based on TRCA's SWM Criteria, no quantity control is required provided that direct discharge to the receiving watercourse is available. For discharge to the CN/Metrolinx rail corridor, post development peak flows must be maintained at existing levels to ensure existing conveyance characteristics of the rail corridor's drainage works is not impacted. For discharge to existing infrastructure, post development peak flows must be controlled to the allowable storm sewer allotment the area is discharging to.

7.3.1 Allowable (Existing) Peak Flows

As discussed above, to ensure no adverse impacts to CN/Metrolinx's infrastructure, peak flows must be maintained to existing levels. As discussed in **Section 6.1** and shown on **Figure 2**, the majority of the Study Area discharges flows to Outlet 1(Culvert C04) and Outlet 2 (Culvert C05). The contributing drainage areas to the culverts delineated as part of the Highway 401 Class EA have been revised based on the latest ground surface topography surveyed as part of this study. Given the control of post development flows to pre-development levels at these outlets, no further hydraulic capacity investigation was carried out for these structures.

A pre-development hydrology model was developed for each outlet discharging to the CN/Metrolinx rail corridor using Visual OTTHYMO 5.1 ('VO5'). Existing peak flows to the outlet were determined for the 2-year to 100-year storm events using both the 1-

hour AES and 12-hour AES storm distributions. Results are summarized in **Table 1**; the lowest flow was taken as the pre-development target and are bolded**.** The VO5 model and calculations in support of the pre-development hydrology model are contained in **Appendix B-1**.

Table 1: Allowable Peak Flows (Existing)

Storm	Allowable Peak Flow (m^3/s)			
	Outlet 1/ Culvert C04		Outlet 2/ Culvert C05	
	1-hr AES	12-hr AES	1-hr AES	12-hr AES
2-Year	**0.113**	0.292	**0.423**	0.519
5 -Year	**0.227**	0.472	0.824	**0.814**
10-Year	**0.318**	0.614	1.134	**1.025**
25-Year	**0.445**	0.835	1.556	**1.298**
50-Year	**0.550**	1.019	1.890	**1.506**
100-Year	**0.662**	1.200	2.231	**1.716**

7.4 Runoff Volume Control

TRCA's SWM Criteria and the City of Pickering require on-site retention of the first 5.0 mm of runoff from impervious areas. Methods such as infiltration and evapotranspiration can be used to address this retention target through the provision of LID works designed in accordance with MOE SWM Manual and TRCA's LID SWM Planning and Design Guide dated 2010.

7.5 Wetland Protection

The Provincially Significant Wetlands on the site must be evaluated based on TRCA's Wetland Water Balance Risk Evaluation (November 2017) and if deemed necessary, a feature based water balance must be completed for any natural feature impacted by the site development.

8.0 STORMWATER MANAGEMENT CONCEPT

To meet the required SWM criteria for the site, the Study Area utilizes existing infrastructure and SWM facilities in combination with on-site controls and two (2) new SWM facilities. In post development conditions, the Study Area is tributary to four (4) distinct drainage outlets; two (2) new outlets are being utilized. A summary of each outlet and the associated SWM systems is provided below. Outlet locations and catchments are illustrated on **Figure 4**.

8.1 Outlet 1: Culvert C04

Stormwater runoff from the Phase 2 Film Studio District, Catchment FS2 (3.13 ha), and the Squires Beach Road right-of-way, Catchment ROW (1.83 ha), discharges to Catchment C4 which ultimately outlets to CN/Metrolinx Culvert C04. To ensure no adverse impacts to the CN/Metrolinx infrastructure, flows from these catchments must be controlled such that the total peak flow when combined with peak flows from Catchments C2 and C4 meet existing levels. Quality, erosion and quantity control will be provided through the use of a closed-bottom underground storage facility with a permanent pool, SWM Facility FS2.

The following sections summarize the hydrology, preliminary design details and operating characteristics of the SWM system.

8.2 Outlet 2: Culvert C05

Stormwater runoff from the Phase 1 Film Studio District, Catchment FS1 (4.69 ha), and the future parking lot west of the Casino District, Catchment PL1 (2.37ha), outlets to CN/Metrolinx Culvert C05 and therefore must be controlled to existing levels to ensure no adverse impacts to the CN/Metrolinx infrastructure. Quality, erosion and quantity control will be provided through the use of a closed-bottom underground storage facility with a permanent pool, SWM Facility FS1.

The following sections summarize the hydrology, preliminary design details and operating characteristics of the SWM system.

8.3 Outlet 3: Existing Casino District Storm Sewer System

Stormwater runoff from Catchment C6S (6.15 ha) will discharge to the existing storm sewer network within Catchment C6N, the Casino lands. The receiving storm sewer was sized to accept the pre-development 100-year flow from 5.0 ha. On-site control (in the form of a super pipe system) is required to meet the allowable storm sewer allotment. Quality and erosion

control measures will be determined once the final development configuration for this area has been finalized and will be provided during the detailed site plan application.

The hydrology and storage details in support of the SWM system for this area are summarized in the following sections.

8.4 Outlet 4: Existing Durham Woods SWM Facility

Stormwater runoff from Catchment C1 (9.90 ha) will discharge to the existing storm sewer network south of Bayly Street and be conveyed to the existing Durham Woods Industrial Lands SWM facility (located south of Bayly Street and immediately west of Church Street).

The existing Durham Woods Industrial Lands stormwater management facility is a wet pond designed to control runoff from a total of 31.5 ha of developable land including 12.3 ha from within the subject area. Assuming an 85% impervious coverage, the facility has sufficient permanent pool volumes to provide enhanced protection level water quality controls (80% TSS removal). The SWM facility will also provide the required erosion and quantity control. Additional on-site control (in the form of a super pipe system) is required to eliminate the possibility of overland flow crossing Bayly Street.

A copy of the Functional Servicing Report in support of the Durham Woods Industrial Lands is included in **Appendix A**. The hydrology and storage details in support of the SWM system for this area are summarized in the following sections.

8.5 Feature Based Water Balances and Runoff Volume Control

In Catchment C2, a topographically closed swamp wetland, Eastern SWD3-2 Wetland was identified. This feature is sensitive to seasonal variations in water level and extent of ponding within the feature. There is also a high risk that the adjacent development will adversely impact the hydrologic and ecological integrity of the feature. For this reason, a seasonal, continuous feature based water balance was completed to evaluate the impact to the wetland due to the adjacent development. The Eastern SWD3-2 Wetland's existing contributing drainage area of 11.10 ha will be reduced to 6.90 ha under developed conditions. The continuous feature based water balance determined that discharging runoff from 1.60 ha of roof (from Catchment C1) will maintain the runoff volume reaching the swamp, including seasonal variations. A separate feature based water balance evaluation by Palmer confirmed that the provision of the additional rooftop runoff will increase infiltration and maintain surface water runoff inputs to the feature. It is proposed to distribute the roof runoff to the swamp through a bio-retention swale running parallel to the east limit of the feature. The bio-retention

swale has been designed to capture and temporarily store 5.0 mm of runoff in the stone trench as it infiltrates into the underlying ground. No additional runoff volume control is required for Catchment C1 or C2.

In Catchment C4, two wetlands, Central SWD3-2 Wetland and Western MAS2-1 Wetland, were identified. It has been demonstrated, above, that the runoff volumes to the Eastern SWD3-2 Wetland has been maintained and since no other development is proposed adjacent to the Central SWD3-2 Wetland, no seasonal, continuous feature based water balance is required for this wetland. The Western MAS2-1 Wetland functions like a riverine system making it less sensitive to seasonal variations in water level and extent of ponding within the feature; therefore, no seasonal, continuous feature based water balance is required for this wetland. Due to high groundwater levels and low permeability soils, no infiltration is proposed in Catchment FS2; however, an infiltration trench is proposed in Catchment FS1 to offset any decreases in infiltration to the Western MAS2-1 Wetland. The infiltration trench will capture and store the equivalent of 5.0 mm of runoff from the Phase 1 Film Studio District roofs. A separate feature based water balance evaluation by Palmer confirmed that the additional infiltration measures have increased the infiltration

No additional runoff volume control is proposed for Catchment FS1, FS2, PL1 or C4.

The hydrology and feature based surface water balance calculations for this area are summarized in the following sections.

9.0 HYDROLOGY

The SWM concept has been supported by specific hydrologic modelling where necessary. The following sections outline the hydrology completed.

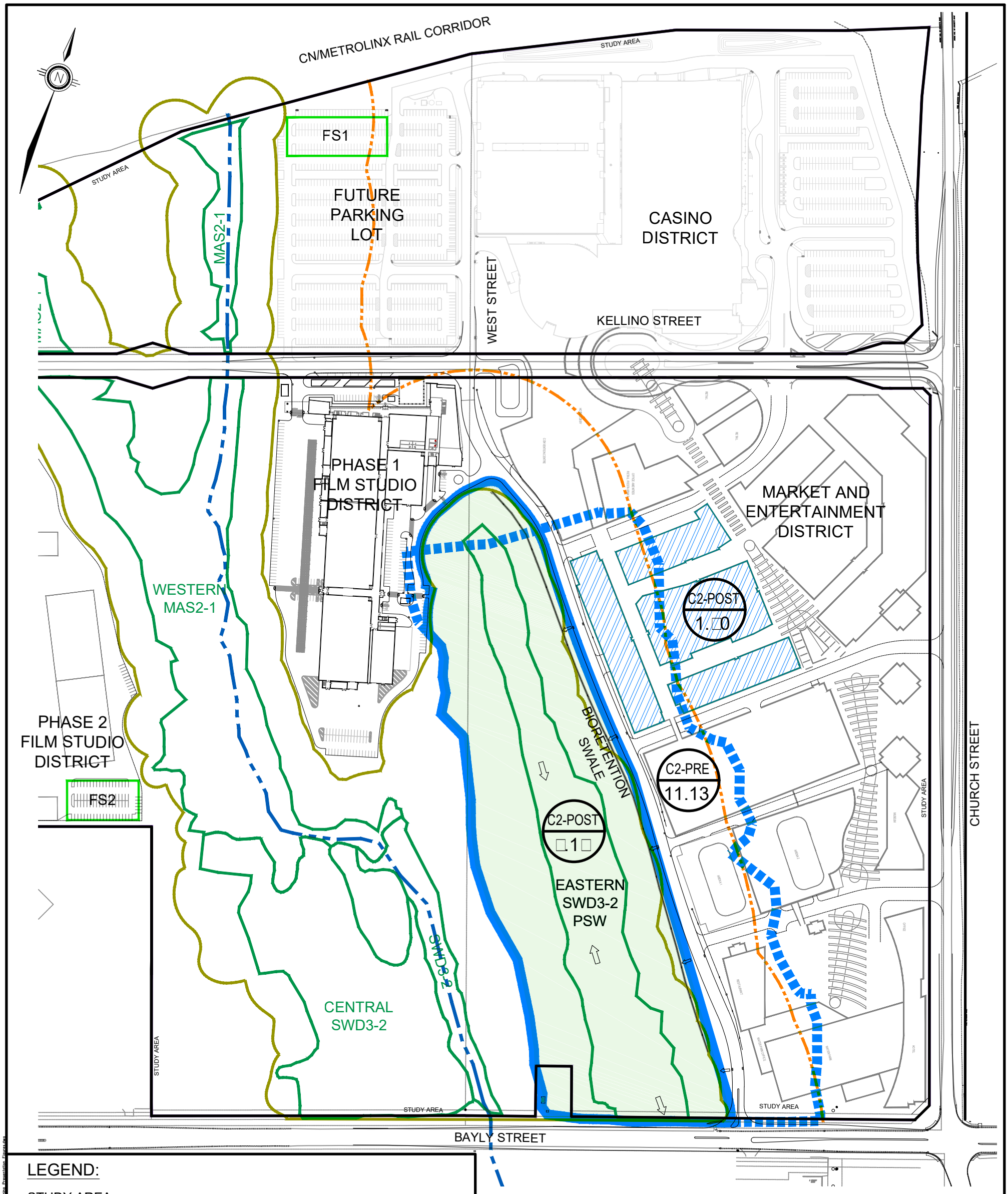
9.1 Feature Based Water Balance

As discussed in **Section 8.5**, Catchment C2 contains a topographically closed, highly sensitive swamp wetland, Eastern SWD3-2 Wetland. In order to determine the impact of development on surface runoff to this feature, the pre-development and post development runoff volumes were calculated using a continuous SWMHYMO model. The pre-development and post development condition drainage areas are shown in **Figure 5**.

The continuous SWMHYMO model was run for the period of April 1 to October 31 for six consecutive years (1994 to 1999). Since each year of data was run as a separate and distinct model, the antecedent moisture parameters within the model were set to reflect saturated conditions starting April 1 to account for the spring freshet. Monthly runoff volumes were downloaded from the SWMHYMO model and plotted utilizing excel spreadsheets.

Since the drainage area and resulting runoff volume will be reduced by development of the Study Area, it is proposed to supplement the deficit with roof runoff. Iterative modelling demonstrated that approximately 1.60 ha of roof drainage best replicated the existing conditions runoff behavior. With this supplement, monthly runoff volumes closely resembled those of the pre-development condition. It is proposed to distribute the roof runoff to the swamp wetland through a bio-retention swale running parallel to the east limit of the feature, refer to **Section 10.1** for more information.

The hydrology model in support of the feature based surface water balance are contained in **Appendix B-2**.


CN/METROLINX RAIL CORRIDOR
STUDY AREA
FS1
FUTURE PARKING LOT
CASINO DISTRICT
WEST STREET
KELLINO STREET
MAS2-1
PHASE 1 FILM STUDIO DISTRICT
MARKET AND ENTERTAINMENT DISTRICT
C2-POST 1.□0
WESTERN MAS2-1
PHASE 2 FILM STUDIO DISTRICT
FS2
BIORETENTION SWALE
C2-PRE 11.13
C2-POST □.1□
EASTERN SWD3-2 PSW
SWD3-2
CENTRAL SWD3-2
CHURCH STREET
BAYLY STREET
LEGEND:
STUDY AREA
EXISTING ZONING LIMIT
WATERCOURSE
WETLAND LIMIT □BY BEACON ENVIRONMENTAL□
BUFFER LIMIT
PRE DEVELOPMENT DRAINAGE BOUNDARY
POST DEVELOPMENT STORM DRAINAGE AREA
SUPPLEMENTAL ROOF AREA TO WETLAND
CATCHMENT ID
AREA □□□□
C2-POST □.1□
FLOW DIRECTION
SCALE N.T.S.
DURHAM LIVE RE-ZONING APPLICATION - EASTERN SWD3-2 WETLAND WATER BALANCE
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9.2 Post Development Hydrology

A post development VO5 model was developed for each outlet to determine the water quantity storage requirements. Similar to the pre-development model, both the 1-hour AES and 12-hour AES storm distributions were used to determine the most conservative storage volume requirements. **Figure 4** illustrates the proposed contributing drainage area(s) to each outlet and the VO5 model and calculations in support of the post development hydrology model are contained in **Appendix B-3**.

9.2.1 Outlet 1: Culvert C04

Approximately 10 percent of the drainage area to Outlet 1 (Culvert C04) will be developed; Catchment FS2 and ROW. SWM Facility FS2 will be located at the outlet of Catchment FS2. Outflows from the SWM facility will combine with flows generated from Catchment C4 and be conveyed towards Culvert C04. The combined flows to Culvert C04 have been considered for assessment of the water quantity requirements. To meet the 100-year allowable peak flow at Culvert C04 (0.662 m^3/s), the SWM facility can outlet 0.524 m^3/s; approximately 2,071 m^3 of storage is required, refer to **Section 10.4** for more information.

9.2.2 Outlet 2: Culvert C05

The entirety of the contributing drainage area discharging to Outlet 2 will be developed. SWM Facility FS1 will be located immediately upstream of Culvert C05 and will control post development flows to the allowable peak flows for all storm events. To meet the 100-year allowable peak flow (1.716 m^3/s), approximately 2,377 m^3 of storage is required, refer to **Section 10.3** for more information.

9.2.3 Outlet 3: Existing Casino Storm Sewer System

The receiving storm sewer was sized to accept the pre-development 100-year flow from 5.0 ha (0.648 m^3/s). To meet this target flow, approximately 2,350 m^3 of storage is required and will be provided on rooftops or in storage tanks within the underground parking garage which will be designed as part of the site plan process for this area.

9.2.4 Outlet 4: Existing Durham Woods SWM Facility

To eliminate the possibility of overland flow crossing Bayly Street, on-site controls are required. The 100-year post development storm flows will be controlled to the allowable storm sewer allotment of 0.218 m^3/s. To meet this target flow, approximately 2,100 m^3 of storage is required and will be provided in a super pipe system which will be designed as part of the site plan process for this area.

10.0 STORMWATER MANAGEMENT INFRASTRUCTURE

The following sections provide a summary of the preliminary design details for each of the centralized stormwater management facilities.

10.1 Bio-retention Swale (Catchment C2)

As discussed above, it is proposed to distribute the roof runoff to the swamp wetland through a bio-retention swale. The swale will run parallel to the east limit of the feature and has been designed to infiltrate the first 5.0 mm of runoff from 1.60 ha of roof. Any additional runoff will overtop the swale and sheet flow into the swamp wetland. The proposed bio-retention swale characteristics are provided in **Table 2**. Refer to **Appendix C-1** for detailed calculations.

Table 2: Preliminary SWM Facility Design Characteristics

Parameter	Characteristic
Length	500 m
Bottom Width	0.20 m
Depth	0.30 m
Side Slopes	3 H : 1 V
Retention Volume Required	80 m^3
Clear Stone Trench	
Minimum Contact Area	744 m^2
Width	1.5 m
Depth	0.28 m

10.2 Infiltration Trench (Catchment FS1)

As discussed above, the equivalent of 5.0 mm of runoff from Catchment FS1 will be collected from the film studio roofs and directed to an infiltration trench via perforated pipe. The infiltration trench has been sized to retain 235 m^3 of water and based on the infiltration rate of 9.3 mm/hr, a minimum contact area of 1,313 m^2 is required. The infiltration trench is 188 m long x 7 m wide x 0.45m deep in size. Refer to **Appendix C-1** for detailed calculations. This retention volume has also been considered as contributing to the overall erosion control volume required in SWM Facility FS1.

10.3 SWM Facility FS1

SWM Facility FS1 is located immediately upstream of the Go/Metrolinx rail corridor within the Durham Live lands. The facility has been designed as an underground tank (StormTrap) with a permanent pool, extended detention and water quantity controls. It will discharge directly to the CN/Metrolinx rail corridor. The preliminary SWM facility design characteristics are provided in **Table 3.**

Table 3: Preliminary SWM Facility Design Characteristics

Parameter	Characteristics
Contributing Drainage Area	7.06 ha
Percent Impervious of Contributing Drainage Area	99%
Tank Information	StormTrap
Tank Dimensions (Length x Width)	72.3 m x 32.5 m
Tank Area	2,350 m^2
Tank Height	2.25 m
Bottom Elevation of Tank	84.50 m
Permanent Pool Elevation	85.50 m
Top Elevation of Tank	86.75 m
Quality Control (Enhanced)	
Permanent Pool Volume Required (233 m^3/ha)	1,647 m^3
Permanent Pool Volume Provided	2,350 m^3
Erosion Control	
Extended Detention Volume Required[1]	1,448 m^3
Extended Detention Elevation	86.12 m
Extended Detention Drawdown Time Provided	48 hrs
Extended Detention Outlet	Orifice Plate
Orifice Diameter	97 mm
Orifice Invert Elevation	85.50 m
Quantity Control	
Quantity Control Outlet	Weir / Rectangular Orifice
Dimensions	3.9 m x 0.4 m
Invert Elevation	86.15 m
100-Year Volume	2,377 m^3
100-Year Elevation (High Water Level)	86.51 m
Freeboard	0.24 m
Total Active Storage Available	2,937 m^3

Notes:

1. The extended detention volume does not include the retention volume of 235 m^3.

Table 4 summarizes the preliminary design stage/storage/outflow characteristics of the SWM facility.

Table 4: Preliminary SWM Facility FS1 Operating Characteristics

Storm Event	Target Outflow (m^3/s)	Elevation (m)	Volume (m^3)	Discharge (m^3/s)
First Flush	-	86.12	1,448	0.015
2-Year	0.423	86.16	1,552	0.033
5-Year	0.814	86.29	1,866	0.354
10-Year	1.025	86.36	2,022	0.603
25-Year	1.298	86.43	2,178	0.955
50-Year	1.506	86.47	2,285	1.230
100-Year	1.716	86.51	2,377	1.498

The preliminary calculations in support of SWM Facility FS1 are provided in **Appendix C-2.**

10.4 SWM Facility FS2

SWM Facility FS2 is located in the southeast corner of Catchment FS2. The facility has been designed as an underground tank (StormTrap) with a permanent pool, extended detention and water quantity controls. It will discharge to the natural heritage feature in Catchment C4 prior to discharge to the CN/Metrolinx rail corridor. The preliminary SWM facility design characteristics are provided in **Table 5**.

Table 5: Preliminary SWM Facility Design Characteristics

Parameter	Characteristics
Contributing Drainage Area	4.96 ha
Percent Impervious of Contributing Drainage Area	96%
Tank Information	StormTrap
Tank Dimensions (Length x Width)	60 m x 32.5 m
Tank Area	1,950 m^2
Tank Height	2.35 m
Bottom Elevation of Tank	86.50 m
Permanent Pool Elevation	87.50 m
Pond Top Elevation	88.85 m

Parameter	Characteristics
Quality Control (Enhanced)	
Permanent Pool Volume Required (228 m^3/ha)	1,130 m^3
Permanent Pool Volume Provided	1,950 m^3
Erosion Control	
Extended Detention Volume Required	1,152 m^3
Extended Detention Elevation	88.09 m
Extended Detention Drawdown Time Provided	48 hrs
Extended Detention Outlet	Orifice Plate
Orifice Diameter	88 mm
Orifice Invert Elevation	87.50 m
Quantity Control	
Quantity Control Outlet	Elliptical Pipe
Orifice Diameter	735 mm x 1145 mm
Orifice Invert Elevation	8810 m
100-Year Volume	2,071 m^3
100-Year Elevation (High Water Level)	88.56 m
Freeboard	0.29 m
Total Active Storage Available	2,632 m^3

Table 6 summarizes the preliminary design stage/storage/outflow characteristics of the SWM facility.

Table 6: Preliminary SWM Facility FS1 Operating Characteristics

Storm Event	Elevation (m)	Volume (m^3)	Discharge (m^3/s)
First Flush	88.09	1,152	0.012
2-Year	88.05	1,068	0.011
5-Year	88.23	1,414	0.090
10-Year	88.32	1,596	0.188
25-Year	88.42	1,801	0.321
50-Year	88.49	1,937	0.432
100-Year	88.56	2,071	0.542

The discharge from SWM Facility FS2 is combined with the flow in Catchment C4 prior to discharge to the CN/Metrolinx rail corridor. The flows from SWM Facility FS2, and the combined flow at the CN/Metrolinx rail corridor (Culvert C04) are summarized in **Table 7**.

Table 7: Total Contributing Flows to Culvert C04

Storm	Target Flow at Culvert C04 (m^3/s)	Facility FS2 Outflow (m^3/s)	Total Flow to Culvert C04 (m^3/s)
2 Year	0.113	0.011	0.108
5 Year	0.227	0.090	0.209
10 Year	0.318	0.188	0.291
25 Year	0.445	0.321	0.404
50 Year	0.550	0.432	0.494
100 Year	0.662	0.542	0.591

The preliminary calculations in support of SWM Facility FS2 are provided in **Appendix C-3.**

11.0 SITE SERVICING

11.1 Water Supply

11.1.1 External Water Supply

Figure 6 illustrates the preliminary site servicing of the Study Area. As shown, there is an existing 750 mm diameter concrete pressure pipe watermain on Bayly Street.

There is also an existing 300 mm diameter PVC watermain on Church Street, which was built in conjunction with the casino construction to replace an old 200 mm ductile iron watermain. The Casino's private water supply is fed from the new watermain on Church Street at Kellino Street.

A 300 mm diameter ductile iron watermain on Squires Beach Road also extends to the north limit of the Veridian Connections property.

11.1.2 Internal Water Supply

At this time, it is expected that the entire Durham Live site will remain under private ownership, and as such, all internal watermains will be privately owned. Connections for the Market and Entertainment District and Phase 1 Film Studio District will be made to the 750 mm watermain on Bayly Street at the north-south private road intersection. A water meter building containing the meter for the domestic line and the backflow preventer for the fire line will be located just north of Bayly Street. The domestic line and fire line will be extended along the proposed north-south road up to Kellino Street. In the future, this watermain may be connected internally to the water supply in the Casino District, to provide a secondary feed for both Districts. Valves would be installed such that the two private systems would not be linked unless necessary.

The existing watermain on Squires Beach Road will be extended to the frontage of the Phase 2 Film Studio District, and domestic and fire connections will be made for the site. A water meter and backflow preventer will be provided within the site in accordance with Region of Durham standards.

Both existing and proposed watermains are illustrated on the **Figure 6**.

11.2 Sanitary Drainage

11.2.1 Downstream Sanitary Sewers

In conjunction with the development of the Casino District, a private 450 mm diameter sanitary sewer was constructed within the alignment of the proposed north-south road, and a 450 mm diameter municipal sanitary sewer was constructed across Bayly Street and on easement south of Bayly Street, just west of Church Street. This sanitary sewer connected to an existing 450 mm diameter sewer at the south limit of the easement, which conveys drainage out to a sewer on Church Street and to the Duffin Creek Water Pollution Control Plant.

As provided in the original design for the sewers within the Durham Woods Industrial Subdivision south of Bayly Street (provided by GHD, Project No. 08045, Drawing Nos. G-102A and P-101), the downstream sewers have been sized to accept drainage from the entire subject property plus the Pickering Pentecostal Church lands owned by others at the northeast corner of Squires Beach Road and Bayly Street, for a total drainage area of 97.3 ha. The sewer was sized with an industrial design flow of 90 m^3/gross hectare/day (1.04 L/s/ha), for a total flow of 101.2 L/s.

The Casino District sanitary sewer system, as designed by R. J. Burnside, connects to the 450 mm private sanitary sewer on the north-south road at Kellino Street.

11.2.2 Internal Sanitary Drainage

Gravity connections for the Phase 1 Film Studio District and Market and Entertainment District can be made to the existing 450 mm sanitary sewer on the north-south road.

Due to the elevation of the Phase 2 Film Studio District, that site cannot drain to the existing sewer by gravity. Therefore, a private pumping station will be required within the site, and sanitary drainage can be pumped via forcemain to the existing sewer at Kellino Street and the north-south road.

Existing and proposed sanitary sewers are illustrated on the **Figure 6**.

11.3 Storm Drainage

11.3.1 Existing Storm Sewers and Outlets

In summary, the existing downstream sewers and outlets are as follows:

- There is an existing stormwater management pond (the Durham Woods SWM Pond) located on the west side of Church Street, south of Bayly Street, adjacent to Aspect Retail Logistics. In conjunction with the Casino District site servicing, the 1350 mm diameter storm sewers that convey drainage to this pond were extended on easement south of Bayly Street and across Bayly Street to the south limit of the site, just west of Church Street. The existing SWM pond and pipes were designed to accept drainage from 12.3 ha of the Study Area at a runoff coefficient of 0.75 (refer to Functional Servicing Report for Durham Woods Industrial Lands, **Appendix A**). This area represents all lands east of the PSW, south of the drainage ridge.
- The Casino District storm sewer system was designed by R. J. Burnside & Associates. Within this system, there is an allowance for conveyance of the pre-development 100-year storm flows from a 5.0 ha area, being the lands east of the PSW and north of the drainage ridge. The existing pipe consists of a 750 mm diameter conveyance pipe through the easterly Casino District parking lot, which outlets via a storm outfall on the west side of Church Street.
- R. J. Burnside & Associates designed a second conveyance system to capture pre-development drainage from the south side of Kellino Street, west of the casino. This system consists of an inlet headwall on the south side of Kellino Street, a 900 mm diameter storm sewer within the Casino District's westerly parking lot, and an outlet headwall on the west side of the surface parking lot.
- Three (3) existing concrete box culverts convey drainage northerly under the CN/Metrolinx rail corridor are illustrated on **Figure 2** and are as follows:
    - A 0.91 m x 0.76 m concrete box culvert (Culvert CO3) located just east of Squires Beach Road;
    - A 1.83m x 1.22m concrete box culvert (Culvert CO4) located at the north end of the central portion of the PSW; and
    - A 1.22m x 1.22m concrete box culvert (Culvert C05) located at the north end of the future casino parking lot.

11.3.2 Proposed Storm Sewers

The proposed storm sewers are illustrated on **Figure 6** and will be designed in accordance with City of Pickering criteria.

11.3.2.1 South Portion of Market and Entertainment District

For the southern portion of the Market and Entertainment District, including the southern portion of the north-south road, the sewers will be sized to convey the 5-year storm from the private roads. The sewers will drain west toward the north-south road, and southerly toward Bayly Street. At the low point on the north-south road, just north of Bayly Street, the sewers will be sized to capture the 100-year storm in order to prevent overland flow from entering the Bayly Street right-of-way. The proposed sewer will connect to the existing sewer connection on the north side Bayly Street. From this point, drainage will be conveyed to the existing Durham Woods SWM pond.

The development blocks within this area will require on-site stormwater quantity controls to control the 100-year flows to the remaining capacity of the downstream sewer. The quantity controls could consist of rooftop storage and storage tanks within the underground parking structure, and will be designed at the site plan stage for these blocks.

11.3.2.2 North Portion of Market and Entertainment District

As described in **Section 11.3.1**, the Casino District storm sewer system has provided for a 750mm diameter storm sewer through the east parking lot to provide for conveyance of pre-development 5-year flows from a 5.0-hectare area south of Kellino Street and north of the drainage ridge. The northern portion of the Market and Entertainment District will drain to this pipe. On-site controls will be required, with storage to be provided on rooftops or within storage tanks in the underground parking structure.

11.3.2.3 Phase 1 Film Studio District and Future Parking Lot

The storm sewer system within the Phase 1 Film Studio District parking lot will be designed to capture and convey the 100-year storm to the proposed SWM Facility FS1 at the north end of the future parking lot on the north side of Kellino Street. The 100-year storm will be captured to prevent overland flow from entering the wetland in accordance with the SWM and water balance strategy described in previous sections. As shown on **Figure 6**, the sewers within the southern and western portion of the

parking lot will drain northerly via a proposed sewer to the SWM Facility. The sewers within the eastern portion of the parking lot will drain toward the north-south road sewers, which will then drain northerly to the existing 900 mm sewer located within the casino parking lot referenced in **Section 11.3.1**. The existing 900 mm headwall and a portion of the existing pipe crossing Kellino Street will be removed. The existing 900mm diameter pipe will then be connected to the SMW Facility.

The roof of the Phase 1 Film Studio building will drain to an infiltration gallery consisting of a perforated pipe within a clear stone trench, wrapped in filter fabric. The gallery is sized for 5 mm runoff from the Film Studio building and parking lot, as described in **Section 10.2**. Should the gallery become full, it will overflow into the storm sewer system.

11.3.2.4Phase 2 Film Studio District

The storm sewers that will be required with the urbanization of Squires Beach Road can drain into the private system for the Phase 2 Film Studio District if an agreement can be reached with the City in this regard. The site sewers will drain to the southeast corner of the block, where quantity controls will be provided within SWM Facility FS2 as described in **Section 10.4**. The tank will outlet into the wetland complex.

12.0 EROSION AND SEDIMENT CONTROL

Construction sedimentation and erosion control works will be implemented prior to the initiation of any construction activity on-site. These works will be designed as part of the detailed design process and will satisfy the requirements of the City of Pickering and the TRCA, specifically referencing the TRCA Erosion and Sediment Control guidelines. During construction of the proposed development, these works will be maintained in good repair to provide adequate controls. Measures that should be considered include vegetative buffer strips, sediment control fencing, sediment control ponds with operating and pumping protocols, check dams and catchbasin sediment traps.

13.0 CONSTRUCTION MANAGEMENT

During the site plan stage for each phase, a detailed construction management plan will be required, including details on specific sediment control measures, construction storage and staging areas, and access and egress from the sites. For the purposes of this report, the following is a general guideline on construction management.

Prior to any work being completed, erosion and sediment control (ESC) measures outlined in Section 12.0 will be implemented. These may consist of sediment fences, interceptor swales, rock check dams, catchbasin silt traps, mud mats, and possibly temporary sediment ponds. The ESC measures must be inspected regularly, and repaired, replaced or cleaned when damaged or no longer effective.

Any existing trees that are to be preserved should be protected with hoarding and any other protective measures described in the Tree Preservation Report.

Once the ESC and tree protection measures are in place, topsoil stripping may begin. Topsoil required for landscaping purposes will be stockpiled on site, and the remainder will be disposed off-site. Topsoil stockpile locations will be detailed at the site plan stage for each phase, but in general, stockpiles should not be located directly adjacent to any natural heritage features. Stockpiles should be surrounded by sediment fence and seeded.

Upon completion of topsoil stripping, the site will be rough graded, and if additional fill is required, it will be imported.

Construction traffic will enter and exit the site via Squires Beach Road and Kellino Street, or via Bayly Street and the north-south road. There will be no construction traffic on Church Street.

Infiltration galleries and bioswales will be constructed only when construction of all other services, laneways, and buildings are nearing completion to ensure that they do not become full of sediment during construction.

During construction of all phases, dust control measures and a road cleaning program are to be implemented. Mud mats are to be constructed at each access location.

The location of construction staging and storage areas, site trailers, parking areas for construction workers, and temporary washroom facilities will be determined at the site plan stage for each phase. Temporary fencing and/or hoarding may be erected between construction zones and developed phases. All construction waste is to be disposed off-site. Working hours are to be in accordance with City by-laws.

14.0 CONCLUSIONS

Based on the analysis carried out as part of this preliminary design investigation, it was concluded that municipal servicing and stormwater management of the subject lands is readily achievable as follows:

- The site may be graded to provide adequate major system and minor system servicing and to be in compliance with the City of Pickering standard criteria. Some grading of 3:1 slopes to match existing grades is proposed within the buffer.
- In order to maintain water balance for the treed swamp located within the eastern portion of the wetland complex, 1.6 hectares of roof runoff is to be directed to a bioretention swale located within the wetland buffer, west of the north-south road.
- Storm drainage from the northern portion of the Market and Entertainment District will be conveyed via existing storm sewers within the Casino District to the Church Street outlet. Quantity control will be provided via rooftop storage or storage tanks within the underground parking structure.
- Storm drainage from the southern portion of the Market and Entertainment District will be conveyed via storm sewers to the south limit of the site and will outlet to the existing storm sewer at the southeast corner of the site. This sewer drains to an existing stormwater management pond south of Bayly Street. Quantity controls will be provided via rooftop storage or storage tanks within the underground parking structure, to control flows to the capacity of the downstream pipe.
- Storm drainage from the Phase 1 Film Studio District and future parking lot will be conveyed via storm sewers to a storage tank located at the north limit of the site.
- Stormwater quality and quantity control for the Phase 1 Film Studio District and the future parking lot will be provided via a StormTrap underground tank, with a permanent pool, extended detention, and water quantity controls. The tank will discharge to the rail corridor, with the ultimate outlet being Culvert CO5 under the rail corridor and Highway 401.
- The roof area of the Phase 1 Film Studio District will drain to an infiltration gallery to achieve on site retention of 5mm of runoff from that site plan. Should the gallery be full, it will overflow into the storm sewer.
- Storm drainage from the Phase 2 Film Studio District and Squires Beach Road will be conveyed via storm sewers to a storage tank located at the east end of the film studio block.

- Quality and quantity control for Squires Beach Road and the Phase 2 Film Studio District will be provided via a StormTrap underground tank, with a permanent pool, extended detention, and water quantity controls. The tank will discharge to the wetland complex, and ultimately to Culvert CO4 under the rail corridor and Highway 401.
- Sufficient water supply is available to service the site. Connections exist at the south limit of the site, and short watermain extension is required on Squires Beach Road to service the Phase 2 Film Studios District.
- The existing downstream sanitary sewers have been designed and constructed to accommodate development of all phases of the subject lands, assuming a maximum gross floor area of approximately 485,000 square metres.
- The sanitary drainage from the Phase 1 Film Studio District and Market and Entertainment District will flow by gravity to the south limit of the site and will outlet to the existing sanitary sewer at the southeast corner of the site. A private pumping station is required for the Phase 2 Film Studio District, to pump sanitary sewage to the on-site gravity sewers at Kellino Street and the north-south road.
- Adequate erosion and sedimentation control will be provided during the construction program.
- Detailed construction management plans will be prepared for each site plan.

APPENDIX A

FUNCTIONAL SERVICING REPORT, DURHAM WOODS INDUSTRIAL LANDS

SERNAS ASSOCIATES
A Member of The Sernas Group Inc.

FUNCTIONAL SERVICING REPORT

Land Development Engineering
Land Development Planning
Municipal Engineering Services
Transportation & Transit Planning
Utility Infrastructure Design
Water Resources Engineering

DURHAM WOODS INDUSTRIAL LANDS AND DURHAM WOODS SEVERANCE CITY OF PICKERING

PREPARED FOR:

RUNNYMEDE DEVELOPMENT CORP. LTD.

January, 2004
03335

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January 28, 2004

Runnymede Development Corp. Ltd.
1051 Tapscott Road
Scarborough, Ontario
M1X 1A1

Attention: Mr. T. Scanlan

Dear Sir:

Re: Functional Servicing Report
Durham Woods Industrial Lands
and Durham Woods Severance
City of Pickering
Our Project No. 03335

We are pleased to submit herewith fifteen (15) copies of our Functional Servicing Report for the above referenced project as requested.

Should you have any questions regarding the above, please do not hesitate to contact the undersigned.

Yours truly,

SERNAS ASSOCIATES

Erik Larsen, P.Eng.
Associate, Design Manager

EL/br

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1.0 INTRODUCTION

Sernas Associates was retained by Runnymede Development Corp. Ltd. to provide engineering services with respect to grading and site services (storm, sanitary and water) for a land severance within their Durham Woods Industrial Lands in the City of Pickering. The extent of the Durham Woods Industrial Lands is shown on Figure 1 (rear pocket), and the location of the land severance is also shown on Figure 1.

The proposed land use for the severance is a large industrial building with associated parking for cars and large trucks together with a stormwater management facility.

In the 1970's a draft plan for the Durham Woods Industrial Lands was prepared for which many alternative servicing schemes were examined, culminating in a scheme in the early 1980's which proposed the following:

- Storm drainage for all the lands to be conveyed to Duffins Creek by a box culvert via a 10m easement along the north property line of the Kennedy House and outlet into Duffins Creek at the same location as the storm outlet provided for the Volkswagen of Canada site. We understand that the existing storm outfall has made provision for the proposed outlet.
- Sanitary drainage for all the lands to be conveyed to the Jodrel Road pumping station via a sewer along the Church Street R.O.W. and an easement across the TRCA lands.
- Water to be provided by making the necessary connections to existing watermains on Bayly Street and Church Street.

None of the above proposed services have been constructed, consequently there are no external storm and sanitary sewers in place to serve the subject land severance. Furthermore, changes to stormwater management practices and restrictions on areas that can be developed for environmental reasons since the early 1980's, have made the above proposed servicing scheme obsolete. It is therefore necessary to develop a new servicing scheme for the Durham Woods Industrial Lands to establish the external servicing requirements for the subject land severance.

2.0 PROPOSED SERVICING SCHEME FOR DURHAM WOODS INDUSTRIAL LANDS

2.1 STORM DRAINAGE

2.1.1 PRE-DEVELOPMENT CONDITIONS

The Durham Woods Industrial Lands are located within Subcatchment 28 of the Duffins Creek watershed. The existing drainage catchment consists of existing agricultural and natural areas (wetland and woodlot). The soils and hydrogeological assessment reports have identified the local soils as clay till, which is consistent with the soils identified for the area in the Duffins Creek Watershed report.

The local topography shows a series of low relief narrow ridges (drumlins) trending north-west to south-east across the site. The depressions between the ridges are poorly drained, resulting in linear wetland areas extending north and south of Bayly Street. The treatment of the existing wetland areas, at the north end of the proposed land severance will be the subject of a separate report.

Based on available topographic data, the majority of the lands to the north of Bayly Street would appear to drain north across Highway 401 and then easterly to Duffins Creek. The majority of the lands to the south of Bayly Street drain south to Duffins Creek.

2.1.2 STORMWATER MANAGEMENT CRITERIA

Based on the Duffins Creek Watershed report and discussions with TRCA staff, the stormwater management criteria has been established as follows:

- No quantity controls are required because the site is located downstream of Highway 7 (and within Subcatchment 28).
- "Enhanced" level of the Ministry of Environment's Stormwater Management Planning and Design Manual, March 2003 (MOE 2003 SWMPD). This level of protection necessitates 80% long term suspended solids removal.

The Durham Woods Industrial Lands were identified in the Duffins Creek Watershed report as consisting of industrial development with an imperviousness of 75% and clay soils (CN86).

2.1.3 STORMWATER QUALITY AND EROSION CONTROL

There are a number of Stormwater Management Practices (SWMPs) available to meet the various aspects of water quality control. However, site characteristics and the nature of the development limit the applicability and possible use of many of the possible SWMPs.

The recommended strategy for stormwater management, as set out in the MOE 2003 SWMPD manual, is to provide an integrated treatment train approach to water management. The area is to be developed as an industrial subdivision, which includes extensive roof areas and maintenance of the existing wetland features where possible.

Where feasible, conveyance controls, including perforated storm sewers and grassed swales will be applied, however the difference in grade between the development area and Duffins Creek limits this approach. The selection of conveyance control is also very much dependent on municipal requirements. It must be an acceptable form of servicing for a municipality and the municipality must be willing to implement and maintain these controls.

Due to the size of the contributing drainage area, type of soil and other physical characteristics, an "end of pipe" solution consisting of a wet pond is proposed. This SWM facility will provide 48 hour extended detention for the required "enhanced" level of water quality and erosion control for the development. The storm runoff from the rooftops is considered to be clean water and it is therefore proposed to discharge this directly to the outlet sewer, where possible, to prevent mixing with the sediment laden parking lot and road runoff, which will be directed to the SWM facility.

2.1.4 STORM SEWER SYSTEM (MINOR SYSTEM)

The aforementioned storm drainage scheme proposed in the early 1980's did not include any stormwater quantity and quality controls. It resulted in a very large and deep box culvert south of Bayly Street. The introduction of a water quality facility on this system would result in a large area of redundant land occupied by the slope requirements between the water storage area and proposed grade. Furthermore the proposed sewer routing followed some of the depressions between the drumlins, which have now been identified as environmentally sensitive wetlands through which no sewers can be constructed.

From an assessment of various options, taking into account the latest stormwater management requirements, the environmentally sensitive areas that cannot be developed, and development phasing, it was concluded that the following storm sewer system would be the preferred solution:

- All of the developable lands to the north of Bayly Street, except for a 12.3 ha parcel of land in the south-east corner, are to be drained by storm sewer systems to a proposed water quality pond located to the north of Kellino Street immediately east of Squires Beach Road. The pond outlet pipe will be routed east along the north property line to Duffins Creek.
- All of the developable lands to the south of Bayly Street together with the 12.3 ha parcel of land to the north of Bayly Street, are to be drained by storm sewers to a proposed pond located within the subject land severance at the south end. There are two possible options for the routing of the pond outlet pipe. Option "A" is to route it north on Church Street and then east within the existing easement along the north property line of Kennedy House and connect to the existing storm sewer outfall that was constructed for the Volkswagen of Canada development. Option "B" is to route it south on Church Street with an outlet into the Dufffins Creek marsh. Both options are feasible and are currently being investigated in order to identify the preferred option.
- If practical, clean water from rooftop runoff should by-pass the proposed ponds.

The storm sewer system for the development will be designed based on the City's criteria of conveying a 5 year storm event.

The proposed routing of the storm sewers together with the approximate location of the stormwater management ponds is shown on Figure 2 (rear pocket).

2.1.5 OVERLAND FLOW (MAJOR SYSTEM)

For the lands to the north of Bayly Street, the overland flow from developable lands will be directed to the proposed stormwater management pond, where possible. It is anticipated that this will not be possible for some of the lands because of grading constraints, especially for the 12.3 ha parcel of land that is drained south by storm sewers. For such areas it is proposed that on site controls be imposed to control 100 year post-development flows to 5 year post-development flows.

For the lands to the south of Bayly Street, the overland flow will be directed to the proposed stormwater management pond and south along Church Street to discharge into Duffins Creek.

The proposed overland flow routes are shown on Figure 2 (rear pocket).

2.1.6 SEDIMENT AND EROSION CONTROL

Sediment and erosion control practices during construction will include, but not be limited to, standard devices such as silt fences, mud mats, catchbasin buffers and rock check dams. During rough grading and road construction activities, temporary sediment ponds will be utilized complying with the latest Ministry of Natural Resources Technical Guidelines for Erosion and Sediment Control. Details of these controls will be provided at the detailed design stage of the development.

2.2 SANITARY SEWER SYSTEM

The aforementioned sanitary drainage scheme proposed in the early 1980's was developed in concert with the storm drainage scheme, i.e. the sanitary sewer lay on top of a deep storm box culvert. The introduction of stormwater quality controls since the 1980's would require major modifications to the storm sewer system. Furthermore, the proposed sewer routing followed some of the depressions between the drumlins, which have now been identified as environmentally sensitive wetlands through which no sewers can be constructed. For these reasons the storm drainage scheme has been revised and consequently also the sanitary drainage scheme.

The proposed revised sanitary drainage scheme is as follows:

- All of the developable lands to the south of Bayly Street together with a 12.3 ha parcel of land to the north of Bayly Street, to be drained by a sanitary sewer to the Jodrel Road pumping station via Church Street and an easement across TRCA lands.

- A preliminary scheme to serve the lands to the north of Bayly Street, except for the 12.3 ha parcel of land that drains south, is to drain the lands to a pumping station at Kellino Street. From the pumping station a forcemain will convey the sewage south and outlet into a gravity sewer system that serves the 12.3 ha parcel of land. Alternative sanitary servicing schemes will be considered in conjunction with future development proposals.

- It should be noted that the existing topography along the proposed sewer route across the TRCA lands will result in a sewer with a depth range of 6 to 10m over a length of about 200m.

The sanitary sewers will be sized in accordance with the Region of Durham's design criteria.

The proposed routing of the sanitary sewers together with the approximate location of the pumping stations is shown on Figure 3 (rear pocket).

2.3 WATER DISTRIBUTION

The Lands are located within the Zone 1 pressure district.

There is an existing 750mm diameter feedermain on Bayly Street, a 200mm diameter watermain on Church Street north of Bayly Street and 300mm diameter watermains on Copperstone Drive, Silicone Drive and on Church Street south of Bayly Street.

Servicing of the subject Lands will be accomplished by making connections to the existing watermains.

3.0 PROPOSED SERVICING SCHEME FOR THE SEVERED LANDS

The development proposal for the severed lands is shown on Figure 4 (rear pocket).

As can be seen, it comprises a large building with associated parking for cars and large trucks, and a stormwater management facility at the south end that will also serve some external lands.

As previously noted, two areas of wetlands at the north end will be impacted by the proposed land severance and a proposed municipal road along the north limit of the severance. This has been the subject of a report on mitigating measures with the following proposed solution to maintain water balance:

- Construct a piped system to convey flows south to fulfill the same functions as the existing ditches that at present convey flows south.
- If clean water should be required to compensate for the drainage area that will be lost due to the development, it will be supplied by piping some of the roof runoff from the proposed building to the wetlands.

Another item to take into account in developing a servicing scheme is that no roof top storage is proposed. As roof drainage can be considered to be clean water, it is proposed to pipe the roof runoff that will not be required for the wetlands directly to Duffins Creek via the pond's outlet pipe so as to minimize the storage requirements for the pond.

3.1 STORM DRAINAGE

3.1.1 STORMWATER MANAGEMENT

The proposed stormwater management requirements for the Durham Woods Industrial Lands, within which the land severance is located, has been previously described. As noted, a stormwater management facility is proposed for quality control within the severed lands at the south end. The approximate drainage area to the pond comprises the following:

- 12.30 ha from developable lands to the north of Bayly Street (fronting Church Street);
- 4.45 ha from the future municipal road to the north, Church Street, and developable land in the south-west quadrant of the Bayly Street/Church Street intersection;
- 13.77 ha from the building site, excluding the Phase I roof area;
- 1.00 ha from other miscellaneous areas; and
- 25.50 ha from the wetland area.

This gives rise to a total developable area contributing to the pond of 31.52 ha, and a wetland area of 25.5 ha.

As noted previously, the City of Pickering and the TRCA require that the development meet an "Enhanced" Protection Level with respect to water quality storage requirements. Based on Table 3.2 in the MOE Stormwater Management Planning and Design Manual, March 2003, and assuming an 85% impervious level for the developable area, a total storage of approximately 250 m^3/ha is required for a wet pond. Of this, 210 m^3/ha represents the required volume for the permanent pool. The active storage requirements for extended detention are the greater of 40 m^3/ha or the storage volume to retain a 25 mm storm for 24-48 hours.

Based on the above, the minimum storage volume requirement for the permanent pool is about 6,700 m^3. The total storage required for the extended detention is estimated to be in the order of 7,500 m^3 with a minimum 48 hour detention time.

Conceptual details of the stormwater management facility are shown on Figure 4 (rear pocket). It is anticipated that the permanent pool elevation will be at 81.00m and that the extended detention elevation will be at about 82.00m. These elevations will accommodate the required storage volumes.

3.1.2 STORM SEWER SYSTEM (MINOR SYSTEM)

A description of the proposed storm sewer system to serve the severed lands is as follows:

- A storm sewer will be constructed along the proposed municipal street at the north limit of the severance and south along Church Street to the stormwater management pond located at the south end of the severance. This sewer will convey the flows from the 12.3 ha of future development to the north of Bayly Street, the wetlands, the roads, and the future developable land in the south-west quadrant of the Bayly Street/Church Street intersection.
- If required, clean water in the form of roof runoff will be piped to the wetlands for water balance purposes from part of the roof of the proposed building. The remaining roof drainage from the proposed building on the site will be piped directly to Duffins Creek via the outlet pipe from the pond.
- On–site storm sewers will be constructed for the remainder of the building site and outlet into the stormwater management pond at the south end of the severance.
- The pond will outlet into Duffins Creek via a piped outlet. As previously stated, there are two options for the routing of the pond outlet. Option "A" is to route it north on Church Street and then east within the existing easement along the north property line of Kennedy House and connect to the existing storm sewer outfall that was constructed for the Volkswagen of Canada development. Option "B" is to route it south on Church Street with an outlet into the Dufffins Creek marsh. Both options are feasible and are currently being investigated in order to identify the preferred option.

The routing of the proposed storm sewers, together with approximate sizes, is shown on Figure 4 (rear pocket).

3.1.3 OVERLAND FLOW (MAJOR SYSTEM)

The overland flow from the building site will be routed to the stormwater management pond. The remaining areas will be routed south along Church Street into Duffins Creek.

The proposed grading and overland flow routes are shown on Figure 5.

3.1.4 SEDIMENT AND EROSION CONTROL

Sediment and erosion control practices during construction will include, but not be limited to, standard devices such as silt fences, mud mats, catchbasin buffers and rock check dams. During rough grading construction activities, a temporary sediment pond will be utilized complying with the latest Ministry of Natural Resources Technical Guidelines for Erosion and Sediment Control. Details of these controls will be provided at the detailed design stage of the development.

3.2 SANITARY SEWER SYSTEM

A description of the proposed sanitary sewer system to serve the severed lands is as follows:

- A sanitary sewer will be constructed along the proposed municipal street at the north limit of the severance, south along Church Street and west to the Jodrel Road pumping station across TRCA lands. This sewer will be sized to convey the flows from future development to the north of Bayly Street, and the proposed and future development from all the lands to the south of Bayly Street including the Aggerwall lands immediately to the south of the land severance.
- Sanitary sewers will be constructed on the building site to service the building as appropriate, with connections to the sanitary sewer on Church Street and/or the municipal street to the north.

The sanitary sewers will be sized in accordance with the Region of Durham's design criteria.

The routing of the proposed sanitary sewers together with approximate sizes is shown on Figure 4 (rear pocket).

3.3 WATER DISTRIBUTION

The severance is located within the Zone 1 pressure district.

There is an existing 300mm diameter watermain on Copperstone Drive, Silicone Drive and on Church Street.

The building site will be serviced by both domestic and fire flow by making appropriate connections to the existing watermains as shown on Figure 4 (rear pocket).

3.4 GRADING

Preliminary grades for the severed lands are shown on Figure 5 (rear pocket).

3.5 CONCLUSION AND RECOMMENDATIONS

The servicing of the proposed severed lands can be accomplished by the following:

- Stormwater quality control is provided by the construction of a stormwater management facility located at the south end of the development.
- Minor system (storm sewers) will be sized for the City's 5 year design storm and will accommodate the external areas identified herein.
- Major system flows from the development will be directed to the stormwater management pond or to Duffins Creek via Church Street.
- If required, clean water to the existing wetlands at the north end of the severance for water balance purposes can be provided from roof runoff.
- Appropriate erosion and sediment control practices will be implemented during the construction phases of the development. Details of these will be provided at detail design stage.
- Sanitary sewers will discharge to a sanitary sewer on Church Street, which drains to the Jodrel Road pumping station.
- Water services to the site will be provided by connections to the existing watermains on Church Street and if necessary, to Copperstone Drive.

Sernas Associates
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110 Scotia Court
Whitby Ontario
(905) 432-7878

CITY OF PICKERING

STORM SEWER DESIGN

Kestrel Site
04055-200

DATE : March 2004

CALCULATED BY : E.L
CHECKED BY :

5.000
5 MINUTES WHERE ZONING REQUIRES
A COEFFICIENT OF 0.75 OR HIGHER

Street	M.H.	TO M.H.	A Area (ha)	C Runoff Coeff.	TOTAL A.C.	Time of Conc. (min)	I Rainfall (mm/hr)	Q Peak Flow (cms)	EXISTING OR PROPOSED SEWERS LENGTH (m)	SIZE (mm)	GRADE (%)	CAP. (cms)	VEL. (m/s)	TIME (min)	TOT. TIME (min)
	76	75	0.24	0.85	0.204	5.00	117.33	67	37.5	375	0.50	129	1.13	0.55	5.55
	75	74	0.17	0.90	0.357										
			0.24	0.85	0.561										
			0.09	0.90	0.642	5.55	114.33	204	50.5	450	0.55	221	1.34	0.63	6.18
	74	73	0.24	0.85	0.846										
			0.08	0.90	0.918	6.18	111.10	284	38.5	525	0.50	317	1.42	0.45	6.63
	73	72	0.25	0.85	1.131	6.63	108.89	342	40	600	0.40	405	1.39	0.48	7.11
	72	71	0.25	0.85	1.343	7.11	106.62	398	38	600	0.45	430	1.47	0.43	7.54
	71	70	0.27	0.85	1.573	7.54	104.67	458	77	675	0.35	519	1.40	0.91	8.45
	70	69	0.53	0.65	1.917	8.45	100.76	537	40.5	675	0.45	588	1.59	0.42	8.88
	69	68	0.43	0.85	2.283	8.88	99.05	628	60	750	0.35	687	1.51	0.66	9.54
	68	67	0.42	0.85	2.640	9.54	96.47	708	60	750	0.45	779	1.71	0.59	10.13
	67	66	0.42	0.85	2.997	10.13	94.31	786	60	825	0.35	886	1.61	0.62	10.75
	66	65	0.56	0.85	3.473	10.75	92.11	889	60	825	0.40	947	1.72	0.58	11.33
	65	64	0.18	0.85	3.626										
			0.24	0.90	3.842	11.33	90.15	963	58	825	0.45	1,005	1.82	0.53	11.86
	64	2	0.15	0.90	3.977	11.86	88.43	978	65.5	825	0.50	1,059	1.92	0.57	12.43
	62	61	0.40	0.90	0.360										
			0.52	0.75	0.750	5.00	117.33	245	53.5	525	0.40	284	1.27	0.70	5.70
	61	60	0.28	0.90	1.002	5.70	113.54	316	40	525	0.51	320	1.43	0.46	6.17
	60	59	0.40	0.90	1.362	6.17	111.16	421	40	600	0.45	430	1.47	0.45	6.62
	59	58	0.40	0.90	1.722	6.62	108.93	521	40	675	0.35	519	1.40	0.47	7.09
	58	57	0.40	0.90	2.082	7.09	106.69	618	40	750	0.35	687	1.51	0.44	7.54
	57	56	0.42	0.90	2.460	7.54	104.69	716	40	750	0.40	735	1.61	0.41	7.95
	56	55	0.48	0.90	2.892	7.95	102.88	827	40	825	0.40	947	1.72	0.39	8.34
	55	54	0.41	0.90	3.261	8.34	101.23	918	40	825	0.40	947	1.72	0.39	8.73
	54	53	0.29	0.90	3.522	8.73	99.64	976	40	900	0.40	1,194	1.82	0.37	9.09
	53	52	0.79	0.65	4.036	9.09	98.19	1,102	40	900	0.40	1,194	1.82	0.37	9.46
	52	51	1.42	0.80	5.172	9.46	96.78	1,391	91	975	0.40	1,479	1.92	0.79	10.25
	CB	63	0.25	0.90	0.225	5.00	117.33	73	64	300	1.00	101	1.38	0.77	5.77
	63	51	0.25	0.90	0.450	5.77	113.18	142	68	375	1.00	183	1.60	0.71	6.48
	51	Trunk	0.00	0.00	5.622	10.25	93.86	1,467	10	975	1.50	2,863	3.72	0.04	

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CITY OF PICKERING

STORM SEWER DESIGN

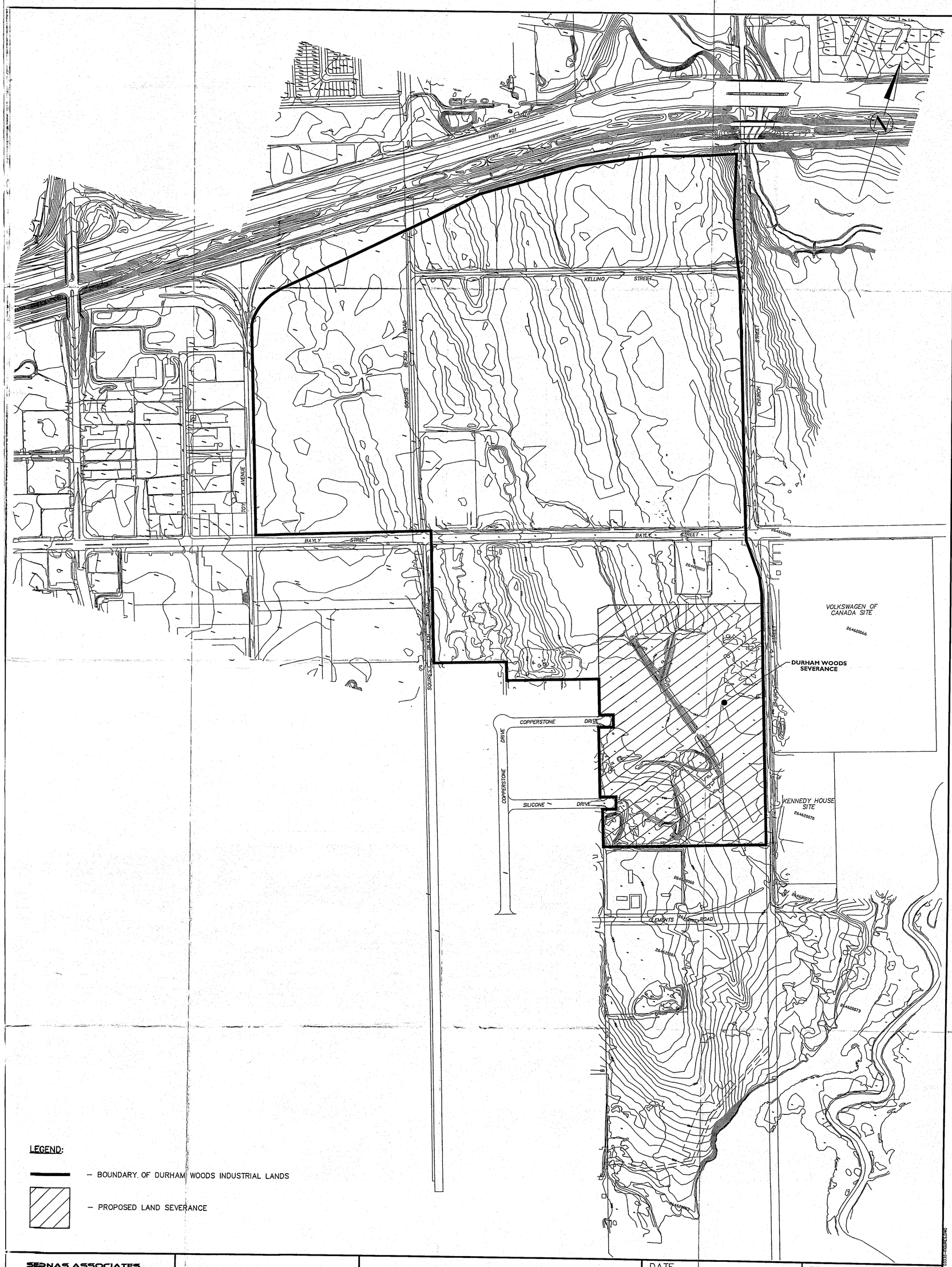
Kestrel Site
04055-200

DATE : March 2004

CALCULATED BY : E.L
CHECKED BY :

5.000
5 MINUTES WHERE ZONING REQUIRES
A COEFFICIENT OF 0.75 OR HIGHER

Street	M.H.	TO M.H.	A Area (ha)	C Runoff Coeff.	TOTAL A.C.	Time of Conc. (min)	I Rainfall (mm/hr)	Q Peak Flow (cms)	EXISTING OR PROPOSED SEWERS LENGTH (m)	SIZE (mm)	GRADE (%)	CAP. (cms)	VEL. (m/s)	TIME (min)	TOT. TIME (min)
CLEAN WATER SEWERS	Plug	81	51 roof drains with a release rate of 7.38 l/s/drain=					377	9	525	1.00	449	2.01		
	81	82						377	56	525	1.00	449	2.01		
	82	HW 2						377	22	525	1.00	449	2.01		
	Plug	80	42 roof drains with a release rate of 7.38 l/s/drain=					311	5.5	450	1.00	297	1.81		
	80	79						311	60	600	0.35	379	1.30		
	79	78						311	60	600	0.35	379	1.30		
	Plug	78	59 roof drains with a release rate of 7.38 l/s/drain=					437	5.5	525	1.00	449	2.01		
	78	77						748	95	750	0.45	779	1.71		
	Future	77	34 roof drains with a release rate of 7.38 l/s/drain=					251							
	77	27						999	69.5	750	0.75	1,006	2.21		



LEGEND:

— BOUNDARY OF DURHAM WOODS INDUSTRIAL LANDS

— PROPOSED LAND SEVERANCE

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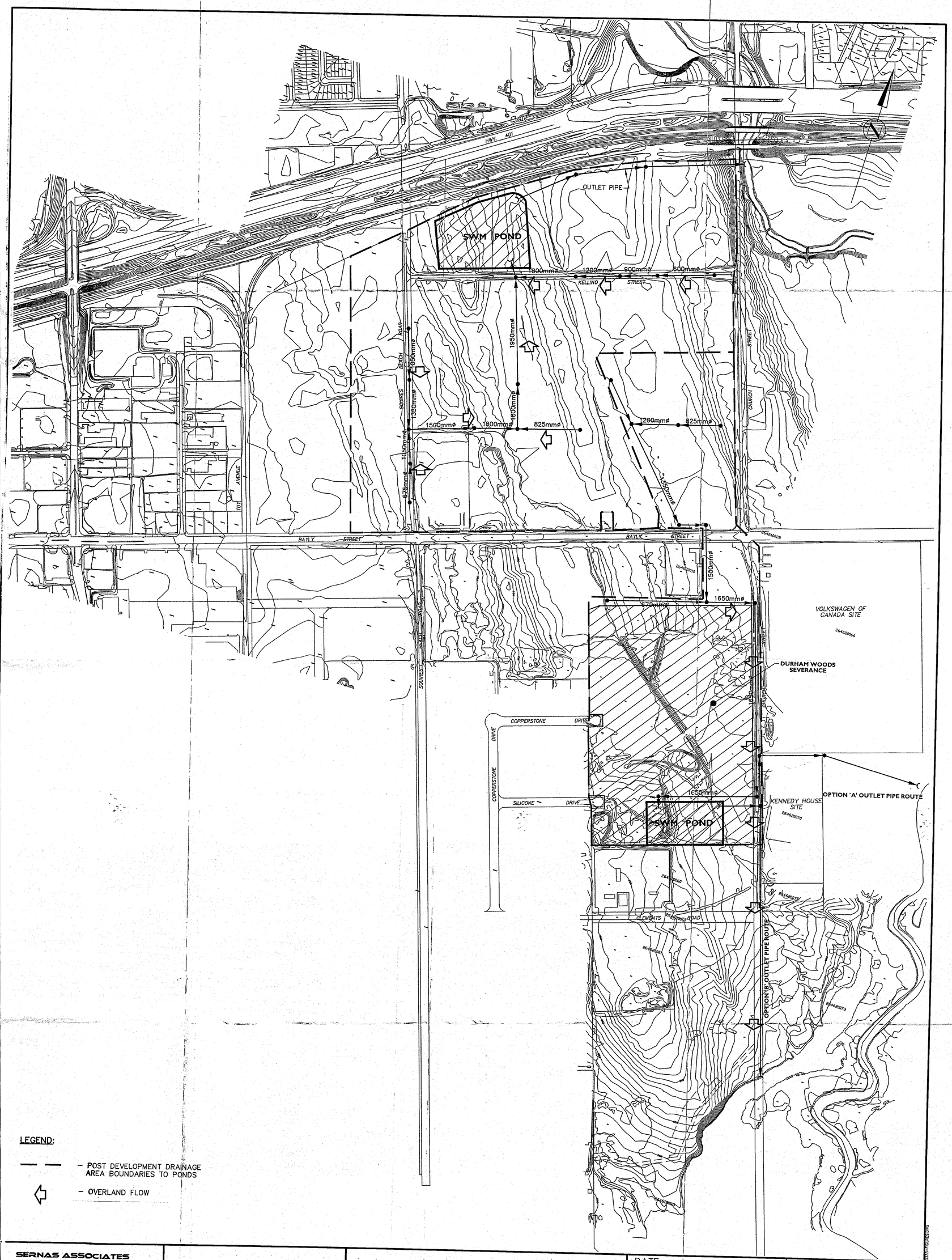
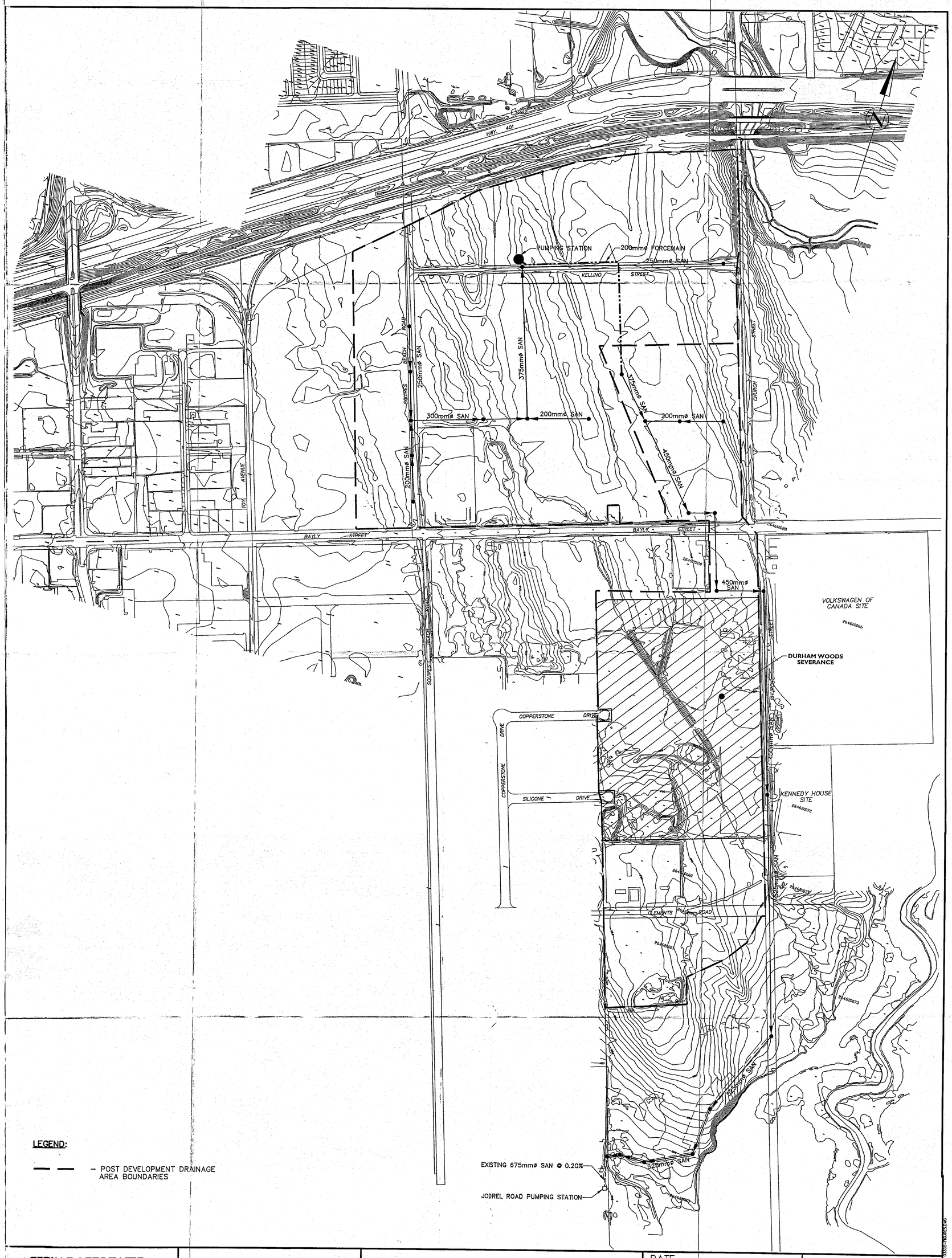
DURHAM WOODS INDUSTRIAL LANDS	DURHAM WOODS SEVERANCE	DATE JANUARY, 2004	PROJECT No. 03335
		SCALE 1:4000	DRAWING No. FIG. 1



SERNAS ASSOCIATES 110 Scotia Court T 905.686.6402 Unit 41 F 905.432.7877 Whitby, ON sernas.com L1N 8Y7	DURHAM WOODS INDUSTRIAL LANDS	FUNCTIONAL STORM SEWER SYSTEM	DATE JANUARY, 2004 SCALE 1:4000	PROJECT No. 03335 DRAWING No. FIG. 2

C:\pf files – JAN. 28, 2004 1:4e 03335-FIGURE2.DWG



LEGEND:

— — — POST DEVELOPMENT DRAINAGE AREA BOUNDARIES

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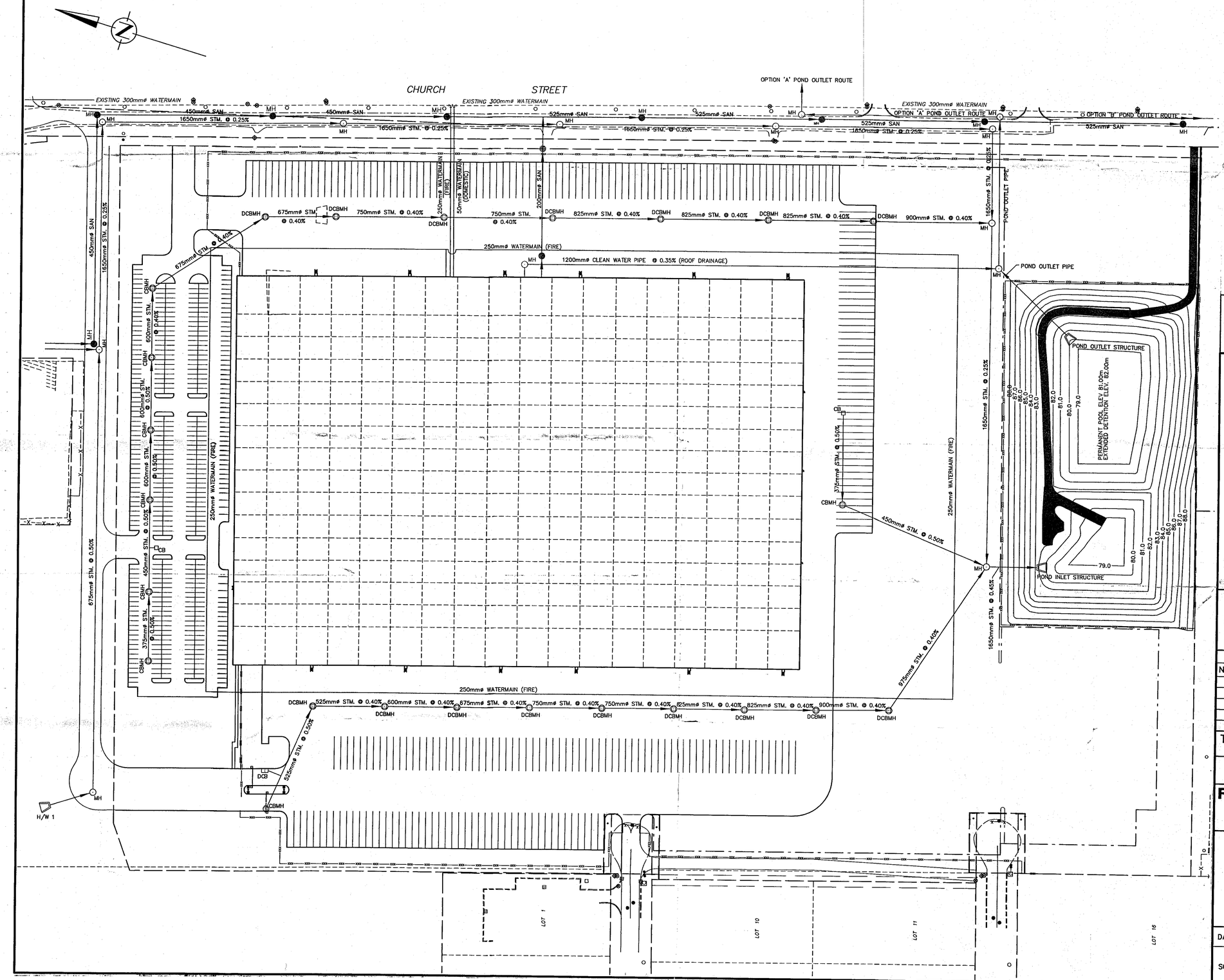
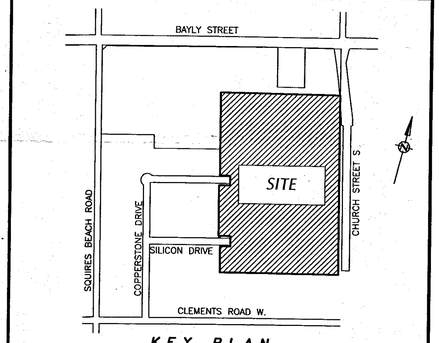
DURHAM WOODS INDUSTRIAL LANDS

FUNCTIONAL SANITARY SEWER SYSTEM

DATE JANUARY, 2004	PROJECT No. 03335
SCALE 1:4000	DRAWING No. FIG. 3



CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXIST. U/G & OVERHEAD UTILITIES. VARIOUS UTILITIES CONCERNED TO BE GIVEN REQUIRED ADVANCE NOTICE PRIOR TO ANY DIGGING, FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING UTILITIES AS INDICATED ON THIS DRAWING.



KEY PLAN
N.T.S.

REVIEWED	APPROVED
Public Works Department City Of Pickering Date:	P. Eng. Department Of Works Region Of Durham Date:

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED

THE CORPORATION OF THE CITY OF PICKERING
Public Works Department

DURHAM WOODS INDUSTRIAL LANDS

FUNCTIONAL SERVICING PLAN FOR DURHAM WOODS SEVERENCE

REGISTERED PROFESSIONAL ENGINEER
E. LARSEN
PROVINCE OF ONTARIO

SERNAS ASSOCIATES
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Unit 41 F 905.432.7877
Whitby, ON sernas.com
L1N 8Y7

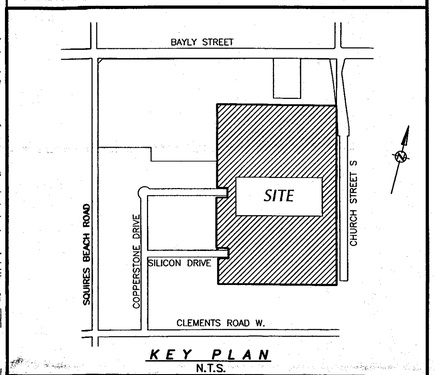
DATE : JANUARY, 2004	DRAWN BY : G.B.	PROJECT No. 03335
SCALE : HORIZ. 1 : 1000	DESIGNED BY : E.L.	DRAWING No. FIG. 4
	CHECKED BY :	

R/P Date - JAN. 28, 2004 File: 03335S-SD1.DWG

CHURCH STREET

FFL 90.85

CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXIST. U/G & OVERHEAD UTILITIES. VARIOUS UTILITIES CONCERNED TO BE GIVEN REQUIRED ADVANCE NOTICE PRIOR TO ANY DIGGING, FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING UTILITIES AS INDICATED ON THIS DRAWING.



KEY PLAN
N.T.S.

REVIEWED	APPROVED
Public Works Department City Of Pickering Date:	P. Eng. Department Of Works Region Of Durham Date:

REVISIONS

No.	DESCRIPTION	DATE	BY	APPROVED

THE CORPORATION OF THE CITY OF PICKERING
Public Works Department

DURHAM WOODS INDUSTRIAL LANDS

FUNCTIONAL GRADING PLAN FOR DURHAM WOODS SEVERANCE

REGISTERED PROFESSIONAL ENGINEER
E. LARSEN
PROVINCE OF ONTARIO

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Whitby, ON sernas.com
L1N 8Y7

DATE : JANUARY, 2004	DRAWN BY : G.B.	PROJECT No. 03335
SCALE : HORIZ. 1 : 1000	DESIGNED BY : E.L. CHECKED BY :	DRAWING No. FIG. 5

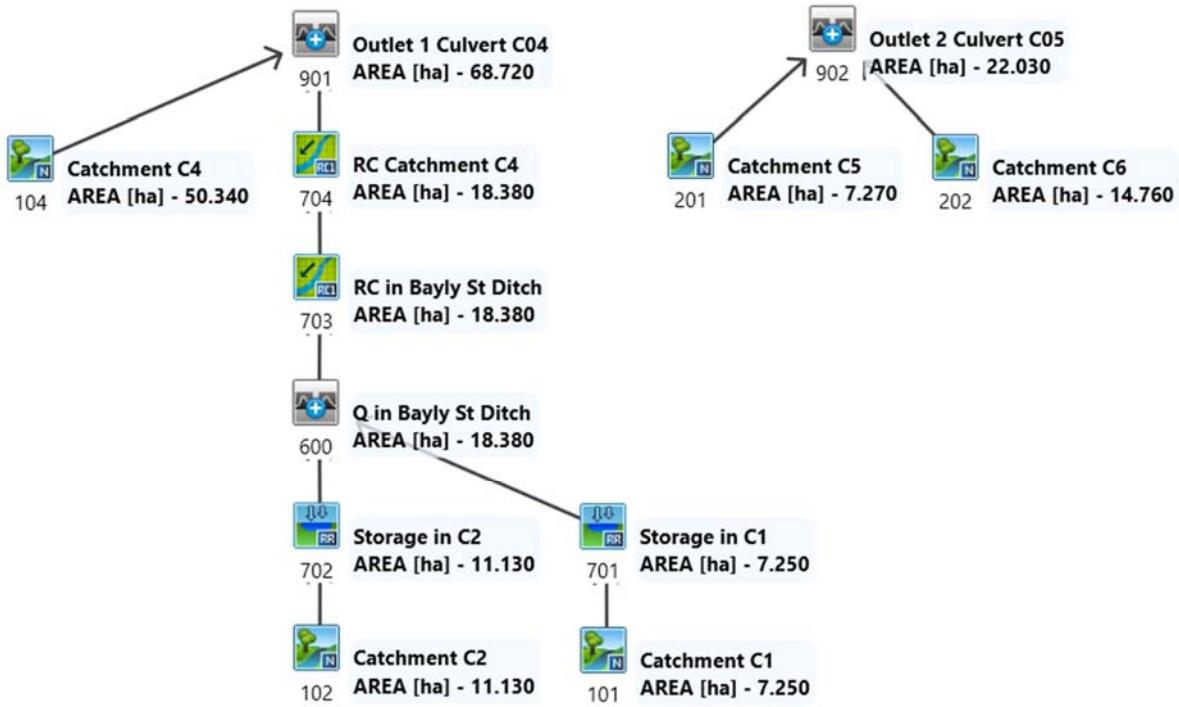
R/P Date = JAN. 28, 2004 File: 03335SD-GD1.DWG

APPENDIX B
HYDROLOGY

APPENDIX B-1

PRE-DEVELOPMENT HYDROLOGY

Pre-Development VO5 Schematic



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        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

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DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 002-Year **
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB			
NASHYD (0202)	Area (ha)= 14.76	Curve Number (CN)= 85.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.32		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42
0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42
0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42
0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42
0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42
0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42

0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42
0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42
1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42
1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42
1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42
1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42
1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42
2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42

Pre Development

2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42
2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42
2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42
2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42
2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42
2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42
2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 0.350 (i)
TIME TO PEAK (hrs)= 5.367
RUNOFF VOLUME (mm)= 16.035
TOTAL RAINFALL (mm)= 42.000

RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB	
NASHYD (0201)	Area (ha)= 7.27 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42
0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42
0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42

0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42
0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42
0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42
0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42
0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42
1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42
1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42
1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42

1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42
1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42
2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42
2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42
2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42
2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42
2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42
2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42

2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42
2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.169 (i)
TIME TO PEAK (hrs)= 5.367
RUNOFF VOLUME (mm)= 16.035
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	ID1= 1 (0201):	7.27	0.169	5.37	16.03
1 + 2 = 3	+ ID2= 2 (0202):	14.76	0.350	5.37	16.03
	ID = 3 (0902):	22.03	0.519	5.37	16.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		

3.25	2.52	6.50	2.94	9.75	0.42		

CALIB					
NASHYD (0101)	Area	(ha)=	7.25	Curve Number (CN)=	85.0
ID= 1 DT= 1.0 min	Ia	(mm)=	6.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		0.25		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42
0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42
0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42
0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42
0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42

Pre Development

0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42
0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42
0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42
1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42
1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42
1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42
1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42
1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42

2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42
2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42
2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42
2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42
2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42
2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42
2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42
2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.184 (i)

TIME TO PEAK (hrs)= 5.317
RUNOFF VOLUME (mm)= 16.035
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)			
IN= 2---> OUT= 1			
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.184	5.32	16.03
OUTFLOW: ID= 1 (0701)	7.250	0.000	13.57	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=495.00
MAXIMUM STORAGE USED (ha.m.)= 0.1163

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB			
NASHYD (0102)	Area (ha)= 11.13	Curve Number (CN)= 80.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.47	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42

Pre Development

0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42
0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42
0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42
0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42
0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42
0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42
0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42
1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42

Pre Development

1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42
1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42
1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42
1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42
2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42
2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42
2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42
2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42

2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42
2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42
2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42
2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.179 (i)
TIME TO PEAK (hrs)= 5.500
RUNOFF VOLUME (mm)= 13.025
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702)			
IN= 2---> OUT= 1			
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.179	5.50	13.03
OUTFLOW: ID= 1 (0702)	11.130	0.000	15.48	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00

TIME SHIFT OF PEAK FLOW (min)=599.00
MAXIMUM STORAGE USED (ha.m.)= 0.1450

ADD HYD (0600)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	13.57	0.00
+ ID2= 2 (0702):	11.13	0.000	15.48	0.00
ID = 3 (0600):	18.38	0.000	13.57	0.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.00	13.57	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	18.38	0.00	13.57	0.00	0.00	0.17

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.00	13.57	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	18.38	0.00	13.70	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB

NASHYD (0104)	Area (ha)= 50.34	Curve Number (CN)= 80.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42
0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42
0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42
0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42
0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42
0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42
0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42

0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42
1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42
1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42
1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42
1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42
1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42
2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42
2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42

Pre Development

2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42
2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42
2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42
2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42
2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42
2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.292 (i)
TIME TO PEAK (hrs)= 8.383
RUNOFF VOLUME (mm)= 12.727
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.303

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0901)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0104):    50.34   0.292     8.38    12.73
     + ID2= 2 (  0704):    18.38   0.000    13.70     0.00
       ================================================
       ID = 3 (  0901):    68.72   0.292     8.38     9.54

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================================================

      V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                 *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

  Output  filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\9dcb6385-d171-4419-ba65-9bd71ec
1d0a8\scena
  Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\9dcb6385-d171-4419-ba65-9bd71ec
1d0a8\scena


DATE: 02-03-2020                          TIME: 04:38:57

USER:



COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 12hr AES 005-Year             **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\e1eed8ab
| Ptotal= 54.38 mm |    Comments: 5 Year 12 Hour AES (Bloor, TRCA)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
```



```
              0.25    0.00 |  3.50    9.25 |  6.75    3.81 | 10.00    0.54
              0.50    0.54 |  3.75    9.25 |  7.00    3.81 | 10.25    0.54
              0.75    0.54 |  4.00    9.25 |  7.25    3.81 | 10.50    0.54
              1.00    0.54 |  4.25    9.25 |  7.50    2.18 | 10.75    0.54
              1.25    0.54 |  4.50   25.02 |  7.75    2.18 | 11.00    0.54
              1.50    0.54 |  4.75   25.02 |  8.00    2.18 | 11.25    0.54
              1.75    0.54 |  5.00   25.02 |  8.25    2.18 | 11.50    0.54
              2.00    0.54 |  5.25   25.02 |  8.50    1.09 | 11.75    0.54
              2.25    0.54 |  5.50    7.07 |  8.75    1.09 | 12.00    0.54
              2.50    3.26 |  5.75    7.07 |  9.00    1.09 | 12.25    0.54
              2.75    3.26 |  6.00    7.07 |  9.25    1.09 |
              3.00    3.26 |  6.25    7.07 |  9.50    0.54 |
              3.25    3.26 |  6.50    3.81 |  9.75    0.54 |

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| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=  14.76   Curve Number   (CN)= 85.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   6.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.32

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.017    0.00 | 3.083    3.26 | 6.150    7.07 |  9.22    1.09
               0.033    0.00 | 3.100    3.26 | 6.167    7.07 |  9.23    1.09
               0.050    0.00 | 3.117    3.26 | 6.183    7.07 |  9.25    1.09
               0.067    0.00 | 3.133    3.26 | 6.200    7.07 |  9.27    0.54
               0.083    0.00 | 3.150    3.26 | 6.217    7.07 |  9.28    0.54
               0.100    0.00 | 3.167    3.26 | 6.233    7.07 |  9.30    0.54
               0.117    0.00 | 3.183    3.26 | 6.250    7.06 |  9.32    0.54
               0.133    0.00 | 3.200    3.26 | 6.267    3.81 |  9.33    0.54
               0.150    0.00 | 3.217    3.26 | 6.283    3.81 |  9.35    0.54
               0.167    0.00 | 3.233    3.26 | 6.300    3.81 |  9.37    0.54
               0.183    0.00 | 3.250    3.26 | 6.317    3.81 |  9.38    0.54
               0.200    0.00 | 3.267    9.25 | 6.333    3.81 |  9.40    0.54
               0.217    0.00 | 3.283    9.25 | 6.350    3.81 |  9.42    0.54
               0.233    0.00 | 3.300    9.25 | 6.367    3.81 |  9.43    0.54
               0.250    0.00 | 3.317    9.25 | 6.383    3.81 |  9.45    0.54
               0.267    0.54 | 3.333    9.25 | 6.400    3.81 |  9.47    0.54
               0.283    0.54 | 3.350    9.25 | 6.417    3.81 |  9.48    0.54
               0.300    0.54 | 3.367    9.25 | 6.433    3.81 |  9.50    0.54
               0.317    0.54 | 3.383    9.25 | 6.450    3.81 |  9.52    0.54
               0.333    0.54 | 3.400    9.25 | 6.467    3.81 |  9.53    0.54
               0.350    0.54 | 3.417    9.25 | 6.483    3.81 |  9.55    0.54
               0.367    0.54 | 3.433    9.25 | 6.500    3.81 |  9.57    0.54
               0.383    0.54 | 3.450    9.25 | 6.517    3.81 |  9.58    0.54
               0.400    0.54 | 3.467    9.25 | 6.533    3.81 |  9.60    0.54
               0.417    0.54 | 3.483    9.25 | 6.550    3.81 |  9.62    0.54
               0.433    0.54 | 3.500    9.25 | 6.567    3.81 |  9.63    0.54
               0.450    0.54 | 3.517    9.25 | 6.583    3.81 |  9.65    0.54
               0.467    0.54 | 3.533    9.25 | 6.600    3.81 |  9.67    0.54
               0.483    0.54 | 3.550    9.25 | 6.617    3.81 |  9.68    0.54
               0.500    0.54 | 3.567    9.25 | 6.633    3.81 |  9.70    0.54
               0.517    0.54 | 3.583    9.25 | 6.650    3.81 |  9.72    0.54
               0.533    0.54 | 3.600    9.25 | 6.667    3.81 |  9.73    0.54
               0.550    0.54 | 3.617    9.25 | 6.683    3.81 |  9.75    0.54
               0.567    0.54 | 3.633    9.25 | 6.700    3.81 |  9.77    0.54
               0.583    0.54 | 3.650    9.25 | 6.717    3.81 |  9.78    0.54
               0.600    0.54 | 3.667    9.25 | 6.733    3.81 |  9.80    0.54
               0.617    0.54 | 3.683    9.25 | 6.750    3.81 |  9.82    0.54
               0.633    0.54 | 3.700    9.25 | 6.767    3.81 |  9.83    0.54
               0.650    0.54 | 3.717    9.25 | 6.783    3.81 |  9.85    0.54
               0.667    0.54 | 3.733    9.25 | 6.800    3.81 |  9.87    0.54
```

Pre Development

0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54
0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54
0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54
1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54
1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54
1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54
1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54
1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54

Pre Development

1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54
1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54
2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54
2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54
2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54
2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54
2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54
2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54

2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54
3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 0.549 (i)
TIME TO PEAK (hrs)= 5.350
RUNOFF VOLUME (mm)= 25.113
TOTAL RAINFALL (mm)= 54.380
RUNOFF COEFFICIENT = 0.462

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Ptotal= 54.38 mm

Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\e1eed8ab
Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB | NASHYD (0201) | ID= 1 DT= 1.0 min

Area (ha)= 7.27 Curve Number (CN)= 85.0
Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.26	6.150	7.07	9.22	1.09
0.033	0.00	3.100	3.26	6.167	7.07	9.23	1.09
0.050	0.00	3.117	3.26	6.183	7.07	9.25	1.09
0.067	0.00	3.133	3.26	6.200	7.07	9.27	0.54
0.083	0.00	3.150	3.26	6.217	7.07	9.28	0.54
0.100	0.00	3.167	3.26	6.233	7.07	9.30	0.54
0.117	0.00	3.183	3.26	6.250	7.06	9.32	0.54
0.133	0.00	3.200	3.26	6.267	3.81	9.33	0.54
0.150	0.00	3.217	3.26	6.283	3.81	9.35	0.54
0.167	0.00	3.233	3.26	6.300	3.81	9.37	0.54
0.183	0.00	3.250	3.26	6.317	3.81	9.38	0.54

Pre Development

0.200	0.00	3.267	9.25	6.333	3.81	9.40	0.54
0.217	0.00	3.283	9.25	6.350	3.81	9.42	0.54
0.233	0.00	3.300	9.25	6.367	3.81	9.43	0.54
0.250	0.00	3.317	9.25	6.383	3.81	9.45	0.54
0.267	0.54	3.333	9.25	6.400	3.81	9.47	0.54
0.283	0.54	3.350	9.25	6.417	3.81	9.48	0.54
0.300	0.54	3.367	9.25	6.433	3.81	9.50	0.54
0.317	0.54	3.383	9.25	6.450	3.81	9.52	0.54
0.333	0.54	3.400	9.25	6.467	3.81	9.53	0.54
0.350	0.54	3.417	9.25	6.483	3.81	9.55	0.54
0.367	0.54	3.433	9.25	6.500	3.81	9.57	0.54
0.383	0.54	3.450	9.25	6.517	3.81	9.58	0.54
0.400	0.54	3.467	9.25	6.533	3.81	9.60	0.54
0.417	0.54	3.483	9.25	6.550	3.81	9.62	0.54
0.433	0.54	3.500	9.25	6.567	3.81	9.63	0.54
0.450	0.54	3.517	9.25	6.583	3.81	9.65	0.54
0.467	0.54	3.533	9.25	6.600	3.81	9.67	0.54
0.483	0.54	3.550	9.25	6.617	3.81	9.68	0.54
0.500	0.54	3.567	9.25	6.633	3.81	9.70	0.54
0.517	0.54	3.583	9.25	6.650	3.81	9.72	0.54
0.533	0.54	3.600	9.25	6.667	3.81	9.73	0.54
0.550	0.54	3.617	9.25	6.683	3.81	9.75	0.54
0.567	0.54	3.633	9.25	6.700	3.81	9.77	0.54
0.583	0.54	3.650	9.25	6.717	3.81	9.78	0.54
0.600	0.54	3.667	9.25	6.733	3.81	9.80	0.54
0.617	0.54	3.683	9.25	6.750	3.81	9.82	0.54
0.633	0.54	3.700	9.25	6.767	3.81	9.83	0.54
0.650	0.54	3.717	9.25	6.783	3.81	9.85	0.54
0.667	0.54	3.733	9.25	6.800	3.81	9.87	0.54
0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54
0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54
0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54
1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54
1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54

1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54
1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54
1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54
1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54
1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54
2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54
2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54
2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54

Pre Development

2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54
2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54
2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54
2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54
3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.265 (i)
TIME TO PEAK (hrs)= 5.367
RUNOFF VOLUME (mm)= 25.113
TOTAL RAINFALL (mm)= 54.380
RUNOFF COEFFICIENT = 0.462

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0201):	7.27	0.265	5.37	25.11
+	ID2= 2 (0202):	14.76	0.549	5.35	25.11
	ID = 3 (0902):	22.03	0.814	5.35	25.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB
NASHYD (0101) | Area (ha)= 7.25 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.25

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.26	6.150	7.07	9.22	1.09
0.033	0.00	3.100	3.26	6.167	7.07	9.23	1.09
0.050	0.00	3.117	3.26	6.183	7.07	9.25	1.09
0.067	0.00	3.133	3.26	6.200	7.07	9.27	0.54
0.083	0.00	3.150	3.26	6.217	7.07	9.28	0.54
0.100	0.00	3.167	3.26	6.233	7.07	9.30	0.54
0.117	0.00	3.183	3.26	6.250	7.06	9.32	0.54
0.133	0.00	3.200	3.26	6.267	3.81	9.33	0.54
0.150	0.00	3.217	3.26	6.283	3.81	9.35	0.54
0.167	0.00	3.233	3.26	6.300	3.81	9.37	0.54
0.183	0.00	3.250	3.26	6.317	3.81	9.38	0.54
0.200	0.00	3.267	9.25	6.333	3.81	9.40	0.54
0.217	0.00	3.283	9.25	6.350	3.81	9.42	0.54
0.233	0.00	3.300	9.25	6.367	3.81	9.43	0.54
0.250	0.00	3.317	9.25	6.383	3.81	9.45	0.54
0.267	0.54	3.333	9.25	6.400	3.81	9.47	0.54
0.283	0.54	3.350	9.25	6.417	3.81	9.48	0.54
0.300	0.54	3.367	9.25	6.433	3.81	9.50	0.54
0.317	0.54	3.383	9.25	6.450	3.81	9.52	0.54
0.333	0.54	3.400	9.25	6.467	3.81	9.53	0.54
0.350	0.54	3.417	9.25	6.483	3.81	9.55	0.54
0.367	0.54	3.433	9.25	6.500	3.81	9.57	0.54
0.383	0.54	3.450	9.25	6.517	3.81	9.58	0.54
0.400	0.54	3.467	9.25	6.533	3.81	9.60	0.54
0.417	0.54	3.483	9.25	6.550	3.81	9.62	0.54
0.433	0.54	3.500	9.25	6.567	3.81	9.63	0.54
0.450	0.54	3.517	9.25	6.583	3.81	9.65	0.54
0.467	0.54	3.533	9.25	6.600	3.81	9.67	0.54
0.483	0.54	3.550	9.25	6.617	3.81	9.68	0.54
0.500	0.54	3.567	9.25	6.633	3.81	9.70	0.54
0.517	0.54	3.583	9.25	6.650	3.81	9.72	0.54
0.533	0.54	3.600	9.25	6.667	3.81	9.73	0.54
0.550	0.54	3.617	9.25	6.683	3.81	9.75	0.54
0.567	0.54	3.633	9.25	6.700	3.81	9.77	0.54
0.583	0.54	3.650	9.25	6.717	3.81	9.78	0.54
0.600	0.54	3.667	9.25	6.733	3.81	9.80	0.54
0.617	0.54	3.683	9.25	6.750	3.81	9.82	0.54

Pre Development

0.633	0.54	3.700	9.25	6.767	3.81	9.83	0.54
0.650	0.54	3.717	9.25	6.783	3.81	9.85	0.54
0.667	0.54	3.733	9.25	6.800	3.81	9.87	0.54
0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54
0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54
0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54
1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54
1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54
1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54
1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54

1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54
1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54
1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54
2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54
2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54
2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54
2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54
2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54

2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54
2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54
3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.287 (i)
TIME TO PEAK (hrs)= 5.300
RUNOFF VOLUME (mm)= 25.113
TOTAL RAINFALL (mm)= 54.380
RUNOFF COEFFICIENT = 0.462

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)					
IN= 2---> OUT= 1					
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)	
	0.0000	0.0000	0.0000	0.4102	

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.287	5.30	25.11
OUTFLOW: ID= 1 (0701)	7.250	0.000	13.63	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=500.00
MAXIMUM STORAGE USED (ha.m.)= 0.1821

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB					
NASHYD (0102)	Area (ha)= 11.13	Curve Number (CN)= 80.0			

|ID= 1 DT= 1.0 min | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 0.47

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.26	6.150	7.07	9.22	1.09
0.033	0.00	3.100	3.26	6.167	7.07	9.23	1.09
0.050	0.00	3.117	3.26	6.183	7.07	9.25	1.09
0.067	0.00	3.133	3.26	6.200	7.07	9.27	0.54
0.083	0.00	3.150	3.26	6.217	7.07	9.28	0.54
0.100	0.00	3.167	3.26	6.233	7.07	9.30	0.54
0.117	0.00	3.183	3.26	6.250	7.06	9.32	0.54
0.133	0.00	3.200	3.26	6.267	3.81	9.33	0.54
0.150	0.00	3.217	3.26	6.283	3.81	9.35	0.54
0.167	0.00	3.233	3.26	6.300	3.81	9.37	0.54
0.183	0.00	3.250	3.26	6.317	3.81	9.38	0.54
0.200	0.00	3.267	9.25	6.333	3.81	9.40	0.54
0.217	0.00	3.283	9.25	6.350	3.81	9.42	0.54
0.233	0.00	3.300	9.25	6.367	3.81	9.43	0.54
0.250	0.00	3.317	9.25	6.383	3.81	9.45	0.54
0.267	0.54	3.333	9.25	6.400	3.81	9.47	0.54
0.283	0.54	3.350	9.25	6.417	3.81	9.48	0.54
0.300	0.54	3.367	9.25	6.433	3.81	9.50	0.54
0.317	0.54	3.383	9.25	6.450	3.81	9.52	0.54
0.333	0.54	3.400	9.25	6.467	3.81	9.53	0.54
0.350	0.54	3.417	9.25	6.483	3.81	9.55	0.54
0.367	0.54	3.433	9.25	6.500	3.81	9.57	0.54
0.383	0.54	3.450	9.25	6.517	3.81	9.58	0.54
0.400	0.54	3.467	9.25	6.533	3.81	9.60	0.54
0.417	0.54	3.483	9.25	6.550	3.81	9.62	0.54
0.433	0.54	3.500	9.25	6.567	3.81	9.63	0.54
0.450	0.54	3.517	9.25	6.583	3.81	9.65	0.54
0.467	0.54	3.533	9.25	6.600	3.81	9.67	0.54
0.483	0.54	3.550	9.25	6.617	3.81	9.68	0.54
0.500	0.54	3.567	9.25	6.633	3.81	9.70	0.54
0.517	0.54	3.583	9.25	6.650	3.81	9.72	0.54
0.533	0.54	3.600	9.25	6.667	3.81	9.73	0.54
0.550	0.54	3.617	9.25	6.683	3.81	9.75	0.54
0.567	0.54	3.633	9.25	6.700	3.81	9.77	0.54
0.583	0.54	3.650	9.25	6.717	3.81	9.78	0.54
0.600	0.54	3.667	9.25	6.733	3.81	9.80	0.54
0.617	0.54	3.683	9.25	6.750	3.81	9.82	0.54
0.633	0.54	3.700	9.25	6.767	3.81	9.83	0.54
0.650	0.54	3.717	9.25	6.783	3.81	9.85	0.54
0.667	0.54	3.733	9.25	6.800	3.81	9.87	0.54
0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54
0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54
0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54

Pre Development

1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54
1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54
1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54
1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54
1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54
1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54
1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54
2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54

2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54
2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54
2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54
2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54
2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54
2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54
3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.292 (i)
TIME TO PEAK (hrs)= 5.483
RUNOFF VOLUME (mm)= 20.921
TOTAL RAINFALL (mm)= 54.380
RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.292	5.48	20.92
OUTFLOW: ID= 1 (0702)	11.130	0.012	10.57	4.12

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.16
TIME SHIFT OF PEAK FLOW (min)=305.00
MAXIMUM STORAGE USED (ha.m.)= 0.2135

ADD HYD (0600) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	13.63	0.00
+ ID2= 2 (0702):	11.13	0.012	10.57	4.12
ID = 3 (0600):	18.38	0.012	10.57	2.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703) IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04

0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.01	10.57	2.49	0.11	0.36
OUTFLOW: ID= 1 (0703)	18.38	0.01	10.62	2.49	0.11	0.36

ROUTE CHN(0704)
IN= 2---> OUT= 1 | Routing time step (min)'= 1.00

DATA FOR SECTION (1.1)

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.01	10.62	2.49	0.04	0.10
OUTFLOW: ID= 1 (0704)	18.38	0.01	14.05	2.44	0.04	0.10

READ STORM | Ptotal= 54.38 mm |
Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\e1eed8ab
Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB | NASHYD (0104)| ID= 1 DT= 1.0 min |
Area (ha)= 50.34 Curve Number (CN)= 80.0
Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.26	6.150	7.07	9.22	1.09
0.033	0.00	3.100	3.26	6.167	7.07	9.23	1.09
0.050	0.00	3.117	3.26	6.183	7.07	9.25	1.09
0.067	0.00	3.133	3.26	6.200	7.07	9.27	0.54
0.083	0.00	3.150	3.26	6.217	7.07	9.28	0.54
0.100	0.00	3.167	3.26	6.233	7.07	9.30	0.54
0.117	0.00	3.183	3.26	6.250	7.06	9.32	0.54
0.133	0.00	3.200	3.26	6.267	3.81	9.33	0.54
0.150	0.00	3.217	3.26	6.283	3.81	9.35	0.54
0.167	0.00	3.233	3.26	6.300	3.81	9.37	0.54
0.183	0.00	3.250	3.26	6.317	3.81	9.38	0.54
0.200	0.00	3.267	9.25	6.333	3.81	9.40	0.54
0.217	0.00	3.283	9.25	6.350	3.81	9.42	0.54
0.233	0.00	3.300	9.25	6.367	3.81	9.43	0.54
0.250	0.00	3.317	9.25	6.383	3.81	9.45	0.54
0.267	0.54	3.333	9.25	6.400	3.81	9.47	0.54
0.283	0.54	3.350	9.25	6.417	3.81	9.48	0.54
0.300	0.54	3.367	9.25	6.433	3.81	9.50	0.54
0.317	0.54	3.383	9.25	6.450	3.81	9.52	0.54
0.333	0.54	3.400	9.25	6.467	3.81	9.53	0.54
0.350	0.54	3.417	9.25	6.483	3.81	9.55	0.54
0.367	0.54	3.433	9.25	6.500	3.81	9.57	0.54
0.383	0.54	3.450	9.25	6.517	3.81	9.58	0.54
0.400	0.54	3.467	9.25	6.533	3.81	9.60	0.54
0.417	0.54	3.483	9.25	6.550	3.81	9.62	0.54
0.433	0.54	3.500	9.25	6.567	3.81	9.63	0.54
0.450	0.54	3.517	9.25	6.583	3.81	9.65	0.54
0.467	0.54	3.533	9.25	6.600	3.81	9.67	0.54
0.483	0.54	3.550	9.25	6.617	3.81	9.68	0.54
0.500	0.54	3.567	9.25	6.633	3.81	9.70	0.54
0.517	0.54	3.583	9.25	6.650	3.81	9.72	0.54
0.533	0.54	3.600	9.25	6.667	3.81	9.73	0.54
0.550	0.54	3.617	9.25	6.683	3.81	9.75	0.54
0.567	0.54	3.633	9.25	6.700	3.81	9.77	0.54
0.583	0.54	3.650	9.25	6.717	3.81	9.78	0.54
0.600	0.54	3.667	9.25	6.733	3.81	9.80	0.54
0.617	0.54	3.683	9.25	6.750	3.81	9.82	0.54
0.633	0.54	3.700	9.25	6.767	3.81	9.83	0.54
0.650	0.54	3.717	9.25	6.783	3.81	9.85	0.54
0.667	0.54	3.733	9.25	6.800	3.81	9.87	0.54
0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54

Pre Development

0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54
0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54
1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54
1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54
1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54
1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54
1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54
1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54

Pre Development

1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54
2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54
2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54
2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54
2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54
2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54
2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54
2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54

3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.472 (i)
TIME TO PEAK (hrs)= 8.283
RUNOFF VOLUME (mm)= 20.470
TOTAL RAINFALL (mm)= 54.380
RUNOFF COEFFICIENT = 0.376

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	50.34	0.472	8.28	20.47
	+ ID2= 2 (0704):	18.38	0.010	14.05	2.44
	ID = 3 (0901):	68.72	0.472	8.30	15.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 5.1.2002)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\766aaa0e-77a0-431f-8fa4-f53bd1e2560a\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\766aaa0e-77a0-431f-8fa4-f53bd1e2560a\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 010-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB					
NASHYD (0202)	Area (ha)= 14.76	Curve Number (CN)= 85.0			
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.32				

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63
0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63
0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63

Pre Development

0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63
0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63
0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63
0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63
1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63
1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63
1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63
1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63

Pre Development

1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63
1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63
1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63
1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63
2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63
2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63
2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63
2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63

2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63
2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63
2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63
3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 0.691 (i)
TIME TO PEAK (hrs)= 5.333
RUNOFF VOLUME (mm)= 31.674
TOTAL RAINFALL (mm)= 62.709
RUNOFF COEFFICIENT = 0.505

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\eb587240
Ptotal= 62.71 mm | Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB | NASHYD (0201)|ID= 1 DT= 1.0 min | Area (ha)= 7.27 Curve Number (CN)= 85.0
Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63
0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63
0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63
0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63
0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63
0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63
0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63

1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63
1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63
1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63
1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63
1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63
1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63
1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63
1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63

Pre Development

2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63
2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63
2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63
2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63
2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63
2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63
2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63
3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.334 (i)
TIME TO PEAK (hrs)= 5.350
RUNOFF VOLUME (mm)= 31.674
TOTAL RAINFALL (mm)= 62.709
RUNOFF COEFFICIENT = 0.505

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0201):	7.27	0.334	5.35	31.67
+ ID2= 2 (0202):	14.76	0.691	5.33	31.67
ID = 3 (0902):	22.03	1.025	5.35	31.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\eb587240
Ptotal= 62.71 mm | Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB | NASHYD (0101) | ID= 1 DT= 1.0 min | Area (ha)= 7.25 | Ia (mm)= 6.00 | U.H. Tp(hrs)= 0.25 | Curve Number (CN)= 85.0 | # of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63

Pre Development

0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63
0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63
0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63
0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63
0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63
0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63
1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63
1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63

1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63
1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63
1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63
1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63
1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63
1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63
2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63
2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63

2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63
2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63
2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63
2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63
2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63
3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.359 (i)
TIME TO PEAK (hrs)= 5.300
RUNOFF VOLUME (mm)= 31.674
TOTAL RAINFALL (mm)= 62.709
RUNOFF COEFFICIENT = 0.505

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)			
IN= 2---> OUT= 1			
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.359	5.30	31.67
OUTFLOW: ID= 1 (0701)	7.250	0.000	13.65	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=501.00
MAXIMUM STORAGE USED (ha.m.)= 0.2296

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63

1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB			
NASHYD (0102)	Area (ha)= 11.13	Curve Number (CN)= 80.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.47		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63
0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63
0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63
0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63
0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63
0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63

Pre Development

0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63
1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63
1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63
1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63
1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63
1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63
1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63
1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63

1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63
2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63
2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63
2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63
2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63
2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63
2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63
2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63

Pre Development

3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.376 (i)
TIME TO PEAK (hrs)= 5.467
RUNOFF VOLUME (mm)= 26.753
TOTAL RAINFALL (mm)= 62.709
RUNOFF COEFFICIENT = 0.427

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702)			
IN= 2---> OUT= 1			
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.376	5.47	26.75
OUTFLOW: ID= 1 (0702)	11.130	0.030	9.43	9.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.97
TIME SHIFT OF PEAK FLOW (min)=238.00
MAXIMUM STORAGE USED (ha.m.)= 0.2537

ADD HYD (0600)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	13.65	0.00
+ ID2= 2 (0702):	11.13	0.030	9.43	9.85
ID = 3 (0600):	18.38	0.030	9.43	5.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47

0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ---->				<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0600)	18.38	0.03	9.43	5.97	0.16	0.45
OUTFLOW: ID= 1 (0703)	18.38	0.03	9.52	5.96	0.16	0.45

ROUTE CHN(0704)|
IN= 2---> OUT= 1 | Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ---->				<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0703)	18.38	0.03	9.52	5.96	0.05	0.11
OUTFLOW: ID= 1 (0704)	18.38	0.02	12.67	5.87	0.05	0.11

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB	
NASHYD (0104) | ID= 1 DT= 1.0 min |	Area (ha)= 50.34 Curve Number (CN)= 80.0 Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63
0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63
0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63
0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63

Pre Development

0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63
0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63
0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63
1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63
1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63
1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63
1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63
1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63

Pre Development

1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63
1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63
1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63
2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63
2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63
2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63
2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63
2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63

2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63
2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63
3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.605 (i)
TIME TO PEAK (hrs)= 8.233
RUNOFF VOLUME (mm)= 26.192
TOTAL RAINFALL (mm)= 62.709
RUNOFF COEFFICIENT = 0.418

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):		50.34	0.605	8.23	26.19
+ ID2= 2 (0704):		18.38	0.024	12.67	5.87
ID = 3 (0901):		68.72	0.614	8.30	21.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:

C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\339d83aa-ac8a-4a07-8e61-4ea241ca24f7\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\339d83aa-ac8a-4a07-8e61-4ea241ca24f7\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

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  ************************************************
  ** SIMULATION : 12hr AES 025-Year             **
  ************************************************
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READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB NASHYD (0202) ID= 1 DT= 1.0 min	Area (ha)= 14.76	Curve Number (CN)= 85.0
	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.32	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73
0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73

Pre Development

0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73
0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73
0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73
0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73
0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73
0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73
1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73

Pre Development

1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73
1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73
1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73
1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73
1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73
2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73
2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73

2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73
2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73
2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73
2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 0.875 (i)
TIME TO PEAK (hrs)= 5.333
RUNOFF VOLUME (mm)= 40.227
TOTAL RAINFALL (mm)= 73.099
RUNOFF COEFFICIENT = 0.550

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73

Pre Development

2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB			
NASHYD (0201)	Area (ha)=	7.27	Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)=	6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.34	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73
0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73
0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73
0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73
0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73
0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73

Pre Development

0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73
0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73
1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73
1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73
1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73
1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73
1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73

Pre Development

1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73
2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73
2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73
2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73
2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73
2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73
2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.424 (i)
TIME TO PEAK (hrs)= 5.350
RUNOFF VOLUME (mm)= 40.227
TOTAL RAINFALL (mm)= 73.099
RUNOFF COEFFICIENT = 0.550

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0201):		7.27	0.424	5.35	40.23
+ ID2= 2 (0202):		14.76	0.875	5.33	40.23
ID = 3 (0902):		22.03	1.298	5.33	40.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB	
NASHYD (0101)	Area (ha)= 7.25 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.25

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73

0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73
0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73
0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73
0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73
0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73
0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73
0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73

1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73
1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73
1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73
1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73
1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73
1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73
2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73

2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73
2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73
2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73
2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73
2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.453 (i)
TIME TO PEAK (hrs)= 5.300
RUNOFF VOLUME (mm)= 40.227
TOTAL RAINFALL (mm)= 73.099
RUNOFF COEFFICIENT = 0.550

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.453	5.30	40.23
OUTFLOW: ID= 1 (0701)	7.250	0.000	13.68	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=503.00
MAXIMUM STORAGE USED (ha.m.)= 0.2916

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB	
NASHYD (0102)	Area (ha)= 11.13 Curve Number (CN)= 80.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.47

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73
0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73
0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73
0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73

Pre Development

0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73
0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73
0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73
0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73
1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73
1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73
1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73

1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73
1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73
1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73
2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73
2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73
2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73
2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73

Pre Development

2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73
2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.487 (i)
TIME TO PEAK (hrs)= 5.467
RUNOFF VOLUME (mm)= 34.474
TOTAL RAINFALL (mm)= 73.099
RUNOFF COEFFICIENT = 0.472

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1				
DT= 1.0 min	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.487	5.47	34.47
OUTFLOW: ID= 1 (0702)	11.130	0.169	7.23	17.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 34.73
TIME SHIFT OF PEAK FLOW (min)=106.00
MAXIMUM STORAGE USED (ha.m.)= 0.2833

ADD HYD (0600)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0701):	7.25	0.000	13.68	0.00
+ ID2= 2 (0702):	11.13	0.169	7.23	17.51
ID = 3 (0600):	18.38	0.169	7.23	10.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<-------- DATA FOR SECTION (1.1) -------->

Distance	Elevation	Manning

0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<-------------------- TRAVEL TIME TABLE ---------------------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.17	7.23	10.60	0.30	0.71
OUTFLOW: ID= 1 (0703)	18.38	0.13	7.40	10.59	0.27	0.66

ROUTE CHN(0704) / IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<-------------------- TRAVEL TIME TABLE ---------------------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69

0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.13	7.40	10.59	0.09	0.18
OUTFLOW: ID= 1 (0704)	18.38	0.06	8.70	10.47	0.07	0.14

READ STORM / Ptotal= 73.10 mm	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\46ca7ce4
	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB / NASHYD (0104) / ID= 1 DT= 1.0 min	Area (ha)= 50.34 Curve Number (CN)= 80.0
	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73
0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73
0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73

Pre Development

0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73
0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73
0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73
0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73
0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73
1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73
1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73

Pre Development

1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73
1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73
1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73
1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73
2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73
2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73
2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73

2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73
2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73
2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.782 (i)
TIME TO PEAK (hrs)= 8.183
RUNOFF VOLUME (mm)= 33.774
TOTAL RAINFALL (mm)= 73.099
RUNOFF COEFFICIENT = 0.462

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	50.34	0.782	8.18	33.77
	+ ID2= 2 (0704):	18.38	0.057	8.70	10.47
	ID = 3 (0901):	68.72	0.835	8.32	28.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
       V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL
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        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\45b98e12-153f-4ec8-84eb-2f5da7ce568d\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\45b98e12-153f-4ec8-84eb-2f5da7ce568d\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 050-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB	
NASHYD (0202)	Area (ha)= 14.76 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.32

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62
0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81
0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81
0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81
0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81
0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81
1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81

1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81
1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81
1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81
1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81
1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81
1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81
2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81
2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81

2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81
2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81
2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81
2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81
2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81
2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 1.015 (i)
TIME TO PEAK (hrs)= 5.333
RUNOFF VOLUME (mm)= 46.789
TOTAL RAINFALL (mm)= 80.819
RUNOFF COEFFICIENT = 0.579

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| READ STORM | Filename: C:\Users\wburke\AppD

	ata\Local\Temp\
	92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB			
NASHYD (0201)	Area (ha)=	7.27	Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)=	6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.34	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62
0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81
0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81
0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81

Pre Development

0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81
0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81
1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81
1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81
1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81
1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81
1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81
1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81

Pre Development

1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81
2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81
2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81
2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81
2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81
2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81
2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81
2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81

2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.492 (i)
TIME TO PEAK (hrs)= 5.350
RUNOFF VOLUME (mm)= 46.789
TOTAL RAINFALL (mm)= 80.819
RUNOFF COEFFICIENT = 0.579

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0201):	7.27	0.492	5.35	46.79
+ ID2= 2 (0202):	14.76	1.015	5.33	46.79
ID = 3 (0902):	22.03	1.506	5.33	46.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB			
NASHYD (0101)	Area (ha)= 7.25	Curve Number (CN)= 85.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	

U.H. Tp(hrs)= 0.25

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62
0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81
0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81
0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81
0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81
0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81

1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81
1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81
1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81
1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81
1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81
1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81
1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81
2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81

Pre Development

2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81
2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81
2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81
2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81
2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81
2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81
2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.524 (i)
TIME TO PEAK (hrs)= 5.300
RUNOFF VOLUME (mm)= 46.789
TOTAL RAINFALL (mm)= 80.819
RUNOFF COEFFICIENT = 0.579

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.524	5.30	46.79
OUTFLOW: ID= 1 (0701)	7.250	0.000	13.70	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=504.00
MAXIMUM STORAGE USED (ha.m.)= 0.3392

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB		
NASHYD (0102)	Area (ha)= 11.13	Curve Number (CN)= 80.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.47	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62
0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81

0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81
0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81
0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81
0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81
1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81
1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81
1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81
1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81

1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81
1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81
1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81
2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81
2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81
2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81
2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81
2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81

Pre Development

2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81
2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81
2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.573 (i)
TIME TO PEAK (hrs)= 5.450
RUNOFF VOLUME (mm)= 40.471
TOTAL RAINFALL (mm)= 80.819
RUNOFF COEFFICIENT = 0.501

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.573	5.45	40.47
OUTFLOW: ID= 1 (0702)	11.130	0.372	6.45	23.49

PEAK FLOW REDUCTION [Qout/Qin](%)= 64.92
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.2840

ADD HYD (0600)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0701):	7.25	0.000	13.70	0.00
+ ID2= 2 (0702):	11.13	0.372	6.45	23.49
ID = 3 (0600):	18.38	0.372	6.45	14.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.37	6.45	14.23	0.41	0.84
OUTFLOW: ID= 1 (0703)	18.38	0.25	6.60	14.22	0.35	0.77

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	

69.22 86.75 0.0500

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.25	6.60	14.22	0.12	0.21
OUTFLOW: ID= 1 (0704)	18.38	0.10	7.85	14.09	0.08	0.17

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB		
NASHYD (0104)	Area (ha)= 50.34	Curve Number (CN)= 80.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Pre Development

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62
0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81
0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81
0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81
0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81
0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81
1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81
1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81

Pre Development

1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81
1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81
1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81
1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81
1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81
2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81
2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81
2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81

2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81
2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81
2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81
2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81
2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.920 (i)
TIME TO PEAK (hrs)= 8.150
RUNOFF VOLUME (mm)= 39.664
TOTAL RAINFALL (mm)= 80.819
RUNOFF COEFFICIENT = 0.491

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	50.34	0.920	8.15	39.66

+ ID2= 2 (0704):	18.38	0.100	7.85	14.09
ID = 3 (0901):	68.72	1.019	8.12	33.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V    V   I    SSSSS  U   U    A    L              (v 5.1.2002)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    H   H    Y    M   M  O   O
 OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\e6e8cd66-c340-48c4-9e0f-61b506dd2fa7\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\e6e8cd66-c340-48c4-9e0f-61b506dd2fa7\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

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**********************************************
** SIMULATION : 12hr AES 100-Year            **
**********************************************
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READ STORM Ptotal= 88.54 mm	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\7feeded2 Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89

2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB			
NASHYD (0202)	Area (ha)= 14.76	Curve Number (CN)= 85.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.32		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89
0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89
0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89
0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89
0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89

Pre Development

0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89
0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89
1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89
1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89
1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89
1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89
1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89
1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89

1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89
2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89
2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89
2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89
2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89
2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89
2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89
3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 1.156 (i)
TIME TO PEAK (hrs)= 5.333
RUNOFF VOLUME (mm)= 53.490
TOTAL RAINFALL (mm)= 88.539
RUNOFF COEFFICIENT = 0.604

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Ptotal= 88.54 mm

Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\7feeded2
Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB | NASHYD (0201) | ID= 1 DT= 1.0 min

Area (ha)= 7.27 Curve Number (CN)= 85.0
Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89
0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89

Pre Development

0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89
0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89
0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89
0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89
0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89
1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89
1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89
1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89

Pre Development

1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89
1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89
1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89
1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89
2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89
2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89
2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89
2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89

2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89
2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89
3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.560 (i)
TIME TO PEAK (hrs)= 5.333
RUNOFF VOLUME (mm)= 53.490
TOTAL RAINFALL (mm)= 88.539
RUNOFF COEFFICIENT = 0.604

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0201):	7.27	0.560	5.33	53.49
	+ ID2= 2 (0202):	14.76	1.156	5.33	53.49
	ID = 3 (0902):	22.03	1.716	5.33	53.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89

Pre Development

1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB					
NASHYD (0101)	Area	(ha)=	7.25	Curve Number	(CN)= 85.0
ID= 1 DT= 1.0 min	Ia	(mm)=	6.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		0.25		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89
0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89
0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89
0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89

Pre Development

0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89
0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89
0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89
1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89
1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89
1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89
1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89
1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89

Pre Development

1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89
1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89
2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89
2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89
2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89
2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89
2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89
2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89

3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.596 (i)
TIME TO PEAK (hrs)= 5.300
RUNOFF VOLUME (mm)= 53.490
TOTAL RAINFALL (mm)= 88.539
RUNOFF COEFFICIENT = 0.604

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1				
DT= 1.0 min	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.596	5.30	53.49
OUTFLOW: ID= 1 (0701)	7.250	0.000	13.72	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=505.00
MAXIMUM STORAGE USED (ha.m.)= 0.3878

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB	
NASHYD (0102) ID= 1 DT= 1.0 min	Area (ha)= 11.13 Curve Number (CN)= 80.0
	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.47

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89
0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89
0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89
0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89
0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89
0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89
0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89
1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89

1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89
1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89
1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89
1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89
1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89
1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89
2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89
2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89

Pre Development

2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89
2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89
2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89
2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89
3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.662 (i)
TIME TO PEAK (hrs)= 5.450
RUNOFF VOLUME (mm)= 46.649
TOTAL RAINFALL (mm)= 88.539
RUNOFF COEFFICIENT = 0.527

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.662	5.45	46.65
OUTFLOW: ID= 1 (0702)	11.130	0.475	6.08	29.66

PEAK FLOW REDUCTION [Qout/Qin](%)= 71.70
TIME SHIFT OF PEAK FLOW (min)= 38.00
MAXIMUM STORAGE USED (ha.m.)= 0.2838

ADD HYD (0600)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0701):	7.25	0.000	13.72	0.00
	+ ID2= 2 (0702):	11.13	0.475	6.08	29.66
	ID = 3 (0600):	18.38	0.475	6.08	17.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)	Routing time step (min)'= 1.00
IN= 2---> OUT= 1	

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<---- hydrograph ----> MAX DEPTH (m)	<-pipe / channel-> MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.47	6.08	17.96	0.44	0.91
OUTFLOW: ID= 1 (0703)	18.38	0.38	6.22	17.95	0.41	0.84

ROUTE CHN(0704)	Routing time step (min)'= 1.00
IN= 2---> OUT= 1	

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<---- hydrograph ----> MAX DEPTH (m)	<-pipe / channel-> MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.38	6.22	17.95	0.14	0.24
OUTFLOW: ID= 1 (0704)	18.38	0.15	7.35	17.82	0.10	0.19

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		

3.00	5.31	6.25	11.51	9.50	0.89
3.25	5.31	6.50	6.20	9.75	0.89

CALIB					
NASHYD (0104)	Area (ha)= 50.34	Curve Number (CN)= 80.0			
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 2.61				

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89
0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89
0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89
0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89
0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89
0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89

Pre Development

0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89
1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89
1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89
1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89
1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89
1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89
1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89
1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89

2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89
2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89
2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89
2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89
2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89
2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89
3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 1.062 (i)
TIME TO PEAK (hrs)= 8.133
RUNOFF VOLUME (mm)= 45.734
TOTAL RAINFALL (mm)= 88.539
RUNOFF COEFFICIENT = 0.517

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):		50.34	1.062	8.13	45.73
+ ID2= 2 (0704):		18.38	0.153	7.35	17.82
ID = 3 (0901):		68.72	1.200	7.97	38.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
```

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\c33c7590-514c-4270-b83e-c7d6475735ff\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\c33c7590-514c-4270-b83e-c7d6475735ff\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

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  ************************************************
  ** SIMULATION : 1hr AES 002-Year              **
  ************************************************
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READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
NASHYD (0202)	Area (ha)= 14.76 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.32

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86
0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 0.288 (i)
TIME TO PEAK (hrs)= 0.900
RUNOFF VOLUME (mm)= 5.060
TOTAL RAINFALL (mm)= 23.802
RUNOFF COEFFICIENT = 0.213

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
NASHYD (0201)	Area (ha)= 7.27 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86
0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.136 (i)
TIME TO PEAK (hrs)= 0.917
RUNOFF VOLUME (mm)= 5.060
TOTAL RAINFALL (mm)= 23.802
RUNOFF COEFFICIENT = 0.213

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0201):	7.27	0.136	0.92	5.06
	+ ID2= 2 (0202):	14.76	0.288	0.90	5.06
	ID = 3 (0902):	22.03	0.423	0.92	5.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB

NASHYD (0101)	Area (ha)= 7.25	Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.25	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86
0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.165 (i)
TIME TO PEAK (hrs)= 0.833
RUNOFF VOLUME (mm)= 5.060
TOTAL RAINFALL (mm)= 23.802
RUNOFF COEFFICIENT = 0.213

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.165	0.83	5.06
OUTFLOW: ID= 1 (0701)	7.250	0.000	2.67	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=110.00
MAXIMUM STORAGE USED (ha.m.)= 0.0367

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB			
NASHYD (0102)	Area (ha)= 11.13	Curve Number (CN)= 80.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.47		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86
0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.125 (i)
TIME TO PEAK (hrs)= 1.067
RUNOFF VOLUME (mm)= 3.898
TOTAL RAINFALL (mm)= 23.802
RUNOFF COEFFICIENT = 0.164

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.125	1.07	3.90
OUTFLOW: ID= 1 (0702)	11.130	0.000	4.28	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=193.00
MAXIMUM STORAGE USED (ha.m.)= 0.0434

ADD HYD (0600)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	2.67	0.00
+ ID2= 2 (0702):	11.13	0.000	4.28	0.00
ID = 3 (0600):	18.38	0.000	2.67	0.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.00	2.67	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	18.38	0.00	2.67	0.00	0.00	0.17

ROUTE CHN(0704)
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66

0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.00	2.67	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	18.38	0.00	4.27	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
NASHYD (0104)	Area (ha)= 50.34 Curve Number (CN)= 80.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86

0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.113 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 3.896
TOTAL RAINFALL (mm)= 23.802
RUNOFF COEFFICIENT = 0.164

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):		50.34	0.113	3.17	3.90
+ ID2= 2 (0704):		18.38	0.000	4.27	0.00
ID = 3 (0901):		68.72	0.113	3.17	2.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

```
       V    V   I    SSSSS  U   U    A    L              (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\7ed419af-0737-4ff0-9154-864ec6c
c8e29\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\7ed419af-0737-4ff0-9154-864ec6c
c8e29\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

****
** SIMULATION : 1hr AES 005-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB	
NASHYD (0202)	Area (ha)= 14.76 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.32

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	3.91	0.267	58.68	0.517	46.94	0.77	11.74
0.033	3.91	0.283	58.68	0.533	46.94	0.78	11.74
0.050	3.91	0.300	58.68	0.550	46.94	0.80	11.74
0.067	3.91	0.317	58.68	0.567	46.94	0.82	11.74
0.083	3.91	0.333	58.68	0.583	46.94	0.83	11.74
0.100	11.74	0.350	109.54	0.600	31.30	0.85	3.91
0.117	11.74	0.367	109.54	0.617	31.30	0.87	3.91
0.133	11.74	0.383	109.54	0.633	31.30	0.88	3.91
0.150	11.74	0.400	109.54	0.650	31.30	0.90	3.91
0.167	11.74	0.417	109.54	0.667	31.30	0.92	3.91
0.183	31.30	0.433	58.68	0.683	19.56	0.93	3.91
0.200	31.30	0.450	58.68	0.700	19.56	0.95	3.91
0.217	31.30	0.467	58.68	0.717	19.56	0.97	3.91
0.233	31.30	0.483	58.68	0.733	19.56	0.98	3.91
0.250	31.30	0.500	58.68	0.750	19.56	1.00	3.91

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 0.560 (i)
TIME TO PEAK (hrs)= 0.883
RUNOFF VOLUME (mm)= 9.907
TOTAL RAINFALL (mm)= 32.601
RUNOFF COEFFICIENT = 0.304

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB					
NASHYD (0201)	Area	(ha)=	7.27	Curve Number	(CN)= 85.0
ID= 1 DT= 1.0 min	Ia	(mm)=	6.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		0.34		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	3.91	0.267	58.68	0.517	46.94	0.77	11.74
0.033	3.91	0.283	58.68	0.533	46.94	0.78	11.74
0.050	3.91	0.300	58.68	0.550	46.94	0.80	11.74
0.067	3.91	0.317	58.68	0.567	46.94	0.82	11.74
0.083	3.91	0.333	58.68	0.583	46.94	0.83	11.74
0.100	11.74	0.350	109.54	0.600	31.30	0.85	3.91
0.117	11.74	0.367	109.54	0.617	31.30	0.87	3.91
0.133	11.74	0.383	109.54	0.633	31.30	0.88	3.91
0.150	11.74	0.400	109.54	0.650	31.30	0.90	3.91
0.167	11.74	0.417	109.54	0.667	31.30	0.92	3.91
0.183	31.30	0.433	58.68	0.683	19.56	0.93	3.91
0.200	31.30	0.450	58.68	0.700	19.56	0.95	3.91
0.217	31.30	0.467	58.68	0.717	19.56	0.97	3.91
0.233	31.30	0.483	58.68	0.733	19.56	0.98	3.91
0.250	31.30	0.500	58.68	0.750	19.56	1.00	3.91

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.265 (i)
TIME TO PEAK (hrs)= 0.900
RUNOFF VOLUME (mm)= 9.907
TOTAL RAINFALL (mm)= 32.601
RUNOFF COEFFICIENT = 0.304

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0201):	7.27	0.265	0.90	9.91
	+ ID2= 2 (0202):	14.76	0.560	0.88	9.91
	ID = 3 (0902):	22.03	0.824	0.88	9.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

Pre Development

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB					
NASHYD (0101)	Area	(ha)=	7.25	Curve Number	(CN)= 85.0
ID= 1 DT= 1.0 min	Ia	(mm)=	6.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		0.25		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	3.91	0.267	58.68	0.517	46.94	0.77	11.74
0.033	3.91	0.283	58.68	0.533	46.94	0.78	11.74
0.050	3.91	0.300	58.68	0.550	46.94	0.80	11.74
0.067	3.91	0.317	58.68	0.567	46.94	0.82	11.74
0.083	3.91	0.333	58.68	0.583	46.94	0.83	11.74
0.100	11.74	0.350	109.54	0.600	31.30	0.85	3.91
0.117	11.74	0.367	109.54	0.617	31.30	0.87	3.91
0.133	11.74	0.383	109.54	0.633	31.30	0.88	3.91
0.150	11.74	0.400	109.54	0.650	31.30	0.90	3.91
0.167	11.74	0.417	109.54	0.667	31.30	0.92	3.91
0.183	31.30	0.433	58.68	0.683	19.56	0.93	3.91
0.200	31.30	0.450	58.68	0.700	19.56	0.95	3.91
0.217	31.30	0.467	58.68	0.717	19.56	0.97	3.91
0.233	31.30	0.483	58.68	0.733	19.56	0.98	3.91
0.250	31.30	0.500	58.68	0.750	19.56	1.00	3.91

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.321 (i)
TIME TO PEAK (hrs)= 0.800
RUNOFF VOLUME (mm)= 9.907
TOTAL RAINFALL (mm)= 32.601
RUNOFF COEFFICIENT = 0.304

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1				
DT= 1.0 min	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.321	0.80	9.91
OUTFLOW: ID= 1 (0701)	7.250	0.000	2.75	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=117.00
MAXIMUM STORAGE USED (ha.m.)= 0.0718

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB			
NASHYD (0102)	Area (ha)= 11.13	Curve Number (CN)= 80.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.47		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	3.91	0.267	58.68	0.517	46.94	0.77	11.74
0.033	3.91	0.283	58.68	0.533	46.94	0.78	11.74
0.050	3.91	0.300	58.68	0.550	46.94	0.80	11.74
0.067	3.91	0.317	58.68	0.567	46.94	0.82	11.74
0.083	3.91	0.333	58.68	0.583	46.94	0.83	11.74
0.100	11.74	0.350	109.54	0.600	31.30	0.85	3.91
0.117	11.74	0.367	109.54	0.617	31.30	0.87	3.91
0.133	11.74	0.383	109.54	0.633	31.30	0.88	3.91
0.150	11.74	0.400	109.54	0.650	31.30	0.90	3.91
0.167	11.74	0.417	109.54	0.667	31.30	0.92	3.91
0.183	31.30	0.433	58.68	0.683	19.56	0.93	3.91
0.200	31.30	0.450	58.68	0.700	19.56	0.95	3.91
0.217	31.30	0.467	58.68	0.717	19.56	0.97	3.91
0.233	31.30	0.483	58.68	0.733	19.56	0.98	3.91
0.250	31.30	0.500	58.68	0.750	19.56	1.00	3.91

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.252 (i)
TIME TO PEAK (hrs)= 1.050
RUNOFF VOLUME (mm)= 7.853
TOTAL RAINFALL (mm)= 32.601
RUNOFF COEFFICIENT = 0.241

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.252	1.05	7.85
OUTFLOW: ID= 1 (0702)	11.130	0.000	4.45	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=204.00
MAXIMUM STORAGE USED (ha.m.)= 0.0874

ADD HYD (0600)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	2.75	0.00
+ ID2= 2 (0702):	11.13	0.000	4.45	0.00
ID = 3 (0600):	18.38	0.000	2.75	0.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)			
IN= 2---> OUT= 1	Routing time step (min)'= 1.00		
<------ DATA FOR SECTION (1.1) ------>			
Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.00	2.75	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	18.38	0.00	2.75	0.00	0.00	0.17

ROUTE CHN(0704)				
IN= 2---> OUT= 1	Routing time step (min)'= 1.00			
<------ DATA FOR SECTION (1.1) ------>				
Distance	Elevation	Manning		
0.00	86.75	0.0500		
4.89	86.50	0.0500		
9.78	86.25	0.0500 /0.0300	Main Channel	
14.71	86.00	0.0300	Main Channel	

49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<-------------------- TRAVEL TIME TABLE ---------------------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.00	2.75	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	18.38	0.00	4.43	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB NASHYD (0104) ID= 1 DT= 1.0 min	Area (ha)= 50.34 Curve Number (CN)= 80.0
	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	3.91	0.267	58.68	0.517	46.94	0.77	11.74
0.033	3.91	0.283	58.68	0.533	46.94	0.78	11.74
0.050	3.91	0.300	58.68	0.550	46.94	0.80	11.74
0.067	3.91	0.317	58.68	0.567	46.94	0.82	11.74
0.083	3.91	0.333	58.68	0.583	46.94	0.83	11.74
0.100	11.74	0.350	109.54	0.600	31.30	0.85	3.91

0.117	11.74	0.367	109.54	0.617	31.30	0.87	3.91
0.133	11.74	0.383	109.54	0.633	31.30	0.88	3.91
0.150	11.74	0.400	109.54	0.650	31.30	0.90	3.91
0.167	11.74	0.417	109.54	0.667	31.30	0.92	3.91
0.183	31.30	0.433	58.68	0.683	19.56	0.93	3.91
0.200	31.30	0.450	58.68	0.700	19.56	0.95	3.91
0.217	31.30	0.467	58.68	0.717	19.56	0.97	3.91
0.233	31.30	0.483	58.68	0.733	19.56	0.98	3.91
0.250	31.30	0.500	58.68	0.750	19.56	1.00	3.91

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.227 (i)
TIME TO PEAK (hrs)= 3.150
RUNOFF VOLUME (mm)= 7.850
TOTAL RAINFALL (mm)= 32.601
RUNOFF COEFFICIENT = 0.241

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	50.34	0.227	3.15	7.85
+ ID2= 2 (0704):	18.38	0.000	4.43	0.00
ID = 3 (0901):	68.72	0.227	3.15	5.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
V    V   I    SSSSS  U   U    A    L              (v 5.1.2002)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    H   H    Y    M   M  O   O
 OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\799a162b-2253-44a9-8f0a-7aa6b29e1814\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\799a162b-2253-44a9-8f0a-7aa6b29e1814\scena

DATE: 02-03-2020 TIME: 04:38:56

USER:

COMMENTS: _____

****
** SIMULATION : 1hr AES 010-Year **
****

READ STORM	Filename: C:\Users\wburke\AppD ata\Local\Temp\ 92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB	
NASHYD (0202)	Area (ha)= 14.76 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.32

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86
0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 0.770 (i)
TIME TO PEAK (hrs)= 0.883
RUNOFF VOLUME (mm)= 13.660
TOTAL RAINFALL (mm)= 38.500
RUNOFF COEFFICIENT = 0.355

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppD ata\Local\Temp\

	92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB	
NASHYD (0201)	Area (ha)= 7.27 Curve Number (CN)= 85.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86
0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.364 (i)
TIME TO PEAK (hrs)= 0.900
RUNOFF VOLUME (mm)= 13.660
TOTAL RAINFALL (mm)= 38.500
RUNOFF COEFFICIENT = 0.355

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0201):	7.27	0.364	0.90	13.66
	+ ID2= 2 (0202):	14.76	0.770	0.88	13.66
	ID = 3 (0902):	22.03	1.134	0.88	13.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppD ata\Local\Temp\ 92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\3d978379

| Ptotal= 38.50 mm | Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB	NASHYD (0101)	ID= 1 DT= 1.0 min	Area (ha)= 7.25	Ia (mm)= 6.00	U.H. Tp(hrs)= 0.25	Curve Number (CN)= 85.0	# of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86
0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.441 (i)
TIME TO PEAK (hrs)= 0.800
RUNOFF VOLUME (mm)= 13.660
TOTAL RAINFALL (mm)= 38.500
RUNOFF COEFFICIENT = 0.355

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)	IN= 2---> OUT= 1	DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
			0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.441	0.80	13.66
OUTFLOW: ID= 1 (0701)	7.250	0.000	2.78	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=119.00
MAXIMUM STORAGE USED (ha.m.)= 0.0990

| READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\3d978379

| Ptotal= 38.50 mm | Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB	NASHYD (0102)	ID= 1 DT= 1.0 min	Area (ha)= 11.13	Ia (mm)= 6.00	U.H. Tp(hrs)= 0.47	Curve Number (CN)= 80.0	# of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86
0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.352 (i)
TIME TO PEAK (hrs)= 1.033
RUNOFF VOLUME (mm)= 11.003
TOTAL RAINFALL (mm)= 38.500
RUNOFF COEFFICIENT = 0.286

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702)	IN= 2---> OUT= 1	DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
			0.0000	0.0000	0.0430	0.2830
			0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.352	1.03	11.00
OUTFLOW: ID= 1 (0702)	11.130	0.000	4.53	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=210.00
MAXIMUM STORAGE USED (ha.m.)= 0.1225

ADD HYD (0600)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0701):	7.25	0.000	2.78	0.00
	+ ID2= 2 (0702):	11.13	0.000	4.53	0.00
	ID = 3 (0600):	18.38	0.000	2.78	0.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703) | IN= 2---> OUT= 1 | Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.00	2.78	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	18.38	0.00	2.78	0.00	0.00	0.17

ROUTE CHN(0704) | IN= 2---> OUT= 1 | Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

Pre Development

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.00	2.78	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	18.38	0.00	4.52	0.00	0.00	0.10

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\3d978379

Ptotal= 38.50 mm | Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB | NASHYD (0104) | ID= 1 DT= 1.0 min |

Area (ha)= 50.34 Curve Number (CN)= 80.0

Ia (mm)= 6.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86

0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.318 (i)
TIME TO PEAK (hrs)= 3.150
RUNOFF VOLUME (mm)= 10.998
TOTAL RAINFALL (mm)= 38.500
RUNOFF COEFFICIENT = 0.286

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	50.34	0.318	3.15	11.00
	+ ID2= 2 (0704):	18.38	0.000	4.52	0.00
	ID = 3 (0901):	68.72	0.318	3.15	8.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\a3399f75-ed4c-43da-8b6d-5f3aa548ef1a\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\a3399f75-ed4c-43da-8b6d-5f3aa548ef1a\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

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  ************************************************
  ** SIMULATION : 1hr AES 025-Year              **
  ************************************************
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READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB			
NASHYD (0202)	Area (ha)= 14.76	Curve Number (CN)= 85.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.32		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51
0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51
0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51
0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 1.058 (i)
TIME TO PEAK (hrs)= 0.867
RUNOFF VOLUME (mm)= 18.790
TOTAL RAINFALL (mm)= 45.899
RUNOFF COEFFICIENT = 0.409

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB			
NASHYD (0201)	Area (ha)= 7.27	Curve Number (CN)= 85.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.34		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51
0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51
0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51
0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.500 (i)
TIME TO PEAK (hrs)= 0.883
RUNOFF VOLUME (mm)= 18.790
TOTAL RAINFALL (mm)= 45.899
RUNOFF COEFFICIENT = 0.409

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0201):	7.27	0.500	0.88	18.79
	+ ID2= 2 (0202):	14.76	1.058	0.87	18.79
	ID = 3 (0902):	22.03	1.556	0.87	18.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Pre Development

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB			
NASHYD (0101)	Area (ha)= 7.25	Curve Number (CN)= 85.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.25		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51
0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51
0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51
0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.606 (i)
TIME TO PEAK (hrs)= 0.783
RUNOFF VOLUME (mm)= 18.790
TOTAL RAINFALL (mm)= 45.899
RUNOFF COEFFICIENT = 0.409

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701)		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1					
DT= 1.0 min		0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.606	0.78	18.79
OUTFLOW: ID= 1 (0701)	7.250	0.000	2.83	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=123.00
MAXIMUM STORAGE USED (ha.m.)= 0.1362

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB NASHYD (0102) ID= 1 DT= 1.0 min	Area (ha)= 11.13 Curve Number (CN)= 80.0 Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.47

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51
0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51
0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51
0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.492 (i)
TIME TO PEAK (hrs)= 1.033
RUNOFF VOLUME (mm)= 15.396
TOTAL RAINFALL (mm)= 45.899
RUNOFF COEFFICIENT = 0.335

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.492	1.03	15.40
OUTFLOW: ID= 1 (0702)	11.130	0.000	4.62	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=215.00
MAXIMUM STORAGE USED (ha.m.)= 0.1714

ADD HYD (0600) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	2.83	0.00
+ ID2= 2 (0702):	11.13	0.000	4.62	0.00
ID = 3 (0600):	18.38	0.000	2.83	0.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703) IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.00	2.83	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	18.38	0.00	2.83	0.00	0.00	0.17

ROUTE CHN(0704)

| IN= 2---> OUT= 1 | Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

		<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)		18.38	0.00	2.83	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)		18.38	0.00	4.60	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB NASHYD (0104) ID= 1 DT= 1.0 min	Area (ha)= 50.34 Curve Number (CN)= 80.0
	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Pre Development

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51
0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51
0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51
0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.445 (i)
TIME TO PEAK (hrs)= 3.133
RUNOFF VOLUME (mm)= 15.390
TOTAL RAINFALL (mm)= 45.899
RUNOFF COEFFICIENT = 0.335

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	50.34	0.445	3.13	15.39
	+ ID2= 2 (0704):	18.38	0.000	4.60	0.00
	ID = 3 (0901):	68.72	0.445	3.13	11.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V    V   I    SSSSS  U   U    A    L              (v 5.1.2002)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    H   H    Y    M   M  O   O
 OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\e9022340-2a47-494d-b496-1586efa17e10\scena
Summary filename:

C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\e9022340-2a47-494d-b496-1586efa17e10\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

****
** SIMULATION : 1hr AES 050-Year **
****

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\85fbf7ef
Ptotal= 51.40 mm | Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB | NASHYD (0202) | ID= 1 DT= 1.0 min | Area (ha)= 14.76 Curve Number (CN)= 85.0 | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.32

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 1.284 (i)
TIME TO PEAK (hrs)= 0.867
RUNOFF VOLUME (mm)= 22.844
TOTAL RAINFALL (mm)= 51.399
RUNOFF COEFFICIENT = 0.444

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\85fbf7ef
Ptotal= 51.40 mm | Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB | NASHYD (0201) | ID= 1 DT= 1.0 min | Area (ha)= 7.27 Curve Number (CN)= 85.0 | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.607 (i)
TIME TO PEAK (hrs)= 0.883
RUNOFF VOLUME (mm)= 22.844
TOTAL RAINFALL (mm)= 51.399
RUNOFF COEFFICIENT = 0.444

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0201):	7.27	0.607	0.88	22.84
+ ID2= 2 (0202):	14.76	1.284	0.87	22.84
ID = 3 (0902):	22.03	1.890	0.87	22.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB NASHYD (0101) | ID= 1 DT= 1.0 min	Area (ha)= 7.25 Curve Number (CN)= 85.0 Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.25

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.736 (i)
TIME TO PEAK (hrs)= 0.783
RUNOFF VOLUME (mm)= 22.844
TOTAL RAINFALL (mm)= 51.399
RUNOFF COEFFICIENT = 0.444

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701) | IN= 2---> OUT= 1 | DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0000	0.4102

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.736	0.78	22.84
OUTFLOW: ID= 1 (0701)	7.250	0.000	2.85	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=124.00
MAXIMUM STORAGE USED (ha.m.)= 0.1656

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB NASHYD (0102) | ID= 1 DT= 1.0 min	Area (ha)= 11.13 Curve Number (CN)= 80.0 Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.47

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.604 (i)
TIME TO PEAK (hrs)= 1.017
RUNOFF VOLUME (mm)= 18.926
TOTAL RAINFALL (mm)= 51.399
RUNOFF COEFFICIENT = 0.368

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702) | IN= 2---> OUT= 1 | DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.604	1.02	18.93
OUTFLOW: ID= 1 (0702)	11.130	0.009	2.75	2.16

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.55
TIME SHIFT OF PEAK FLOW (min)=104.00
MAXIMUM STORAGE USED (ha.m.)= 0.2071

ADD HYD (0600)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	2.85	0.00
+ ID2= 2 (0702):	11.13	0.009	2.75	2.16
ID = 3 (0600):	18.38	0.009	2.75	1.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0600)	18.38	0.01	2.75	1.31	0.10	0.32
OUTFLOW: ID= 1 (0703)	18.38	0.01	2.87	1.31	0.10	0.32

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.01	2.87	1.31	0.03	0.10
OUTFLOW: ID= 1 (0704)	18.38	0.01	6.30	1.28	0.02	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB			
NASHYD (0104)	Area (ha)= 50.34	Curve Number (CN)= 80.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.61		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.547 (i)
TIME TO PEAK (hrs)= 3.133
RUNOFF VOLUME (mm)= 18.919
TOTAL RAINFALL (mm)= 51.399
RUNOFF COEFFICIENT = 0.368

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	50.34	0.547	3.13	18.92
	+ ID2= 2 (0704):	18.38	0.006	6.30	1.28
	ID = 3 (0901):	68.72	0.550	3.15	14.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSSS U U A L (v 5.1.2002)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\efb05845-f625-4e45-80cf-dbfa99efb0cb\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\efb05845-f625-4e45-80cf-dbfa99efb0cb\scena

DATE: 02-03-2020 TIME: 04:38:57

USER:

COMMENTS: _____

** SIMULATION : 1hr AES 100-Year **

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB			
NASHYD (0202)	Area (ha)= 14.76	Curve Number (CN)= 85.0	
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.32		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.82	0.267	102.24	0.517	81.79	0.77	20.45
0.033	6.82	0.283	102.24	0.533	81.79	0.78	20.45
0.050	6.82	0.300	102.24	0.550	81.79	0.80	20.45
0.067	6.82	0.317	102.24	0.567	81.79	0.82	20.45
0.083	6.82	0.333	102.24	0.583	81.79	0.83	20.45
0.100	20.45	0.350	190.85	0.600	54.53	0.85	6.82
0.117	20.45	0.367	190.85	0.617	54.53	0.87	6.82
0.133	20.45	0.383	190.85	0.633	54.53	0.88	6.82
0.150	20.45	0.400	190.85	0.650	54.53	0.90	6.82
0.167	20.45	0.417	190.85	0.667	54.53	0.92	6.82
0.183	54.53	0.433	102.24	0.683	34.08	0.93	6.82
0.200	54.53	0.450	102.24	0.700	34.08	0.95	6.82
0.217	54.53	0.467	102.24	0.717	34.08	0.97	6.82
0.233	54.53	0.483	102.24	0.733	34.08	0.98	6.82
0.250	54.53	0.500	102.24	0.750	34.08	1.00	6.82

Unit Hyd Qpeak (cms)= 1.762

PEAK FLOW (cms)= 1.516 (i)

TIME TO PEAK (hrs)= 0.850
RUNOFF VOLUME (mm)= 26.989
TOTAL RAINFALL (mm)= 56.802
RUNOFF COEFFICIENT = 0.475

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\c5177c45
Ptotal= 56.80 mm | Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB | NASHYD (0201) | ID= 1 DT= 1.0 min | Area (ha)= 7.27 Curve Number (CN)= 85.0 | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.34

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.82	0.267	102.24	0.517	81.79	0.77	20.45
0.033	6.82	0.283	102.24	0.533	81.79	0.78	20.45
0.050	6.82	0.300	102.24	0.550	81.79	0.80	20.45
0.067	6.82	0.317	102.24	0.567	81.79	0.82	20.45
0.083	6.82	0.333	102.24	0.583	81.79	0.83	20.45
0.100	20.45	0.350	190.85	0.600	54.53	0.85	6.82
0.117	20.45	0.367	190.85	0.617	54.53	0.87	6.82
0.133	20.45	0.383	190.85	0.633	54.53	0.88	6.82
0.150	20.45	0.400	190.85	0.650	54.53	0.90	6.82
0.167	20.45	0.417	190.85	0.667	54.53	0.92	6.82
0.183	54.53	0.433	102.24	0.683	34.08	0.93	6.82
0.200	54.53	0.450	102.24	0.700	34.08	0.95	6.82
0.217	54.53	0.467	102.24	0.717	34.08	0.97	6.82
0.233	54.53	0.483	102.24	0.733	34.08	0.98	6.82
0.250	54.53	0.500	102.24	0.750	34.08	1.00	6.82

Unit Hyd Qpeak (cms)= 0.817

PEAK FLOW (cms)= 0.716 (i)
TIME TO PEAK (hrs)= 0.883
RUNOFF VOLUME (mm)= 26.989
TOTAL RAINFALL (mm)= 56.802
RUNOFF COEFFICIENT = 0.475

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0902) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0201):	7.27	0.716	0.88	26.99

+ ID2= 2 (0202):	14.76	1.516	0.85	26.99
ID = 3 (0902):	22.03	2.231	0.87	26.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\c5177c45
Ptotal= 56.80 mm | Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB | NASHYD (0101) | ID= 1 DT= 1.0 min | Area (ha)= 7.25 Curve Number (CN)= 85.0 | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.25

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.82	0.267	102.24	0.517	81.79	0.77	20.45
0.033	6.82	0.283	102.24	0.533	81.79	0.78	20.45
0.050	6.82	0.300	102.24	0.550	81.79	0.80	20.45
0.067	6.82	0.317	102.24	0.567	81.79	0.82	20.45
0.083	6.82	0.333	102.24	0.583	81.79	0.83	20.45
0.100	20.45	0.350	190.85	0.600	54.53	0.85	6.82
0.117	20.45	0.367	190.85	0.617	54.53	0.87	6.82
0.133	20.45	0.383	190.85	0.633	54.53	0.88	6.82
0.150	20.45	0.400	190.85	0.650	54.53	0.90	6.82
0.167	20.45	0.417	190.85	0.667	54.53	0.92	6.82
0.183	54.53	0.433	102.24	0.683	34.08	0.93	6.82
0.200	54.53	0.450	102.24	0.700	34.08	0.95	6.82
0.217	54.53	0.467	102.24	0.717	34.08	0.97	6.82
0.233	54.53	0.483	102.24	0.733	34.08	0.98	6.82
0.250	54.53	0.500	102.24	0.750	34.08	1.00	6.82

Unit Hyd Qpeak (cms)= 1.108

PEAK FLOW (cms)= 0.868 (i)
TIME TO PEAK (hrs)= 0.783
RUNOFF VOLUME (mm)= 26.989
TOTAL RAINFALL (mm)= 56.802
RUNOFF COEFFICIENT = 0.475

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0701) | IN= 2---> OUT= 1 | DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0000	0.4102

Pre Development

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0101)	7.250	0.868	0.78	26.99
OUTFLOW: ID= 1 (0701)	7.250	0.000	2.87	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=125.00
MAXIMUM STORAGE USED (ha.m.)= 0.1957

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\c5177c45
Ptotal= 56.80 mm | Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB | NASHYD (0102) | ID= 1 DT= 1.0 min | Area (ha)= 11.13 Curve Number (CN)= 80.0 | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.47

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.82	0.267	102.24	0.517	81.79	0.77	20.45
0.033	6.82	0.283	102.24	0.533	81.79	0.78	20.45
0.050	6.82	0.300	102.24	0.550	81.79	0.80	20.45
0.067	6.82	0.317	102.24	0.567	81.79	0.82	20.45
0.083	6.82	0.333	102.24	0.583	81.79	0.83	20.45
0.100	20.45	0.350	190.85	0.600	54.53	0.85	6.82
0.117	20.45	0.367	190.85	0.617	54.53	0.87	6.82
0.133	20.45	0.383	190.85	0.633	54.53	0.88	6.82
0.150	20.45	0.400	190.85	0.650	54.53	0.90	6.82
0.167	20.45	0.417	190.85	0.667	54.53	0.92	6.82
0.183	54.53	0.433	102.24	0.683	34.08	0.93	6.82
0.200	54.53	0.450	102.24	0.700	34.08	0.95	6.82
0.217	54.53	0.467	102.24	0.717	34.08	0.97	6.82
0.233	54.53	0.483	102.24	0.733	34.08	0.98	6.82
0.250	54.53	0.500	102.24	0.750	34.08	1.00	6.82

Unit Hyd Qpeak (cms)= 0.904

PEAK FLOW (cms)= 0.720 (i)
TIME TO PEAK (hrs)= 1.017
RUNOFF VOLUME (mm)= 22.579
TOTAL RAINFALL (mm)= 56.802
RUNOFF COEFFICIENT = 0.398

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0702) | IN= 2---> OUT= 1 | DT= 1.0 min | OUTFLOW STORAGE | OUTFLOW STORAGE

Pre Development

	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.7800	0.2837

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0102)	11.130	0.720	1.02	22.58
OUTFLOW: ID= 1 (0702)	11.130	0.025	2.52	5.82

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.42
TIME SHIFT OF PEAK FLOW (min)= 90.00
MAXIMUM STORAGE USED (ha.m.)= 0.2416

ADD HYD (0600) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0701):	7.25	0.000	2.87	0.00
+ ID2= 2 (0702):	11.13	0.025	2.52	5.82
ID = 3 (0600):	18.38	0.025	2.52	3.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0703) | IN= 2---> OUT= 1 | Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

<---- hydrograph ----> <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL

Pre Development

	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0600)	18.38	0.02	2.52	3.52	0.15	0.43
OUTFLOW: ID= 1 (0703)	18.38	0.02	2.60	3.52	0.15	0.42

ROUTE CHN(0704)
IN= 2---> OUT= 1

Routing time step (min)'= 1.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	18.38	0.02	2.60	3.52	0.05	0.11
OUTFLOW: ID= 1 (0704)	18.38	0.02	5.77	3.49	0.04	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\92ab1ca9-d941-45cc-a5a5-4a1cf19152a1\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB

Pre Development

NASHYD (0104)	Area (ha)= 50.34	Curve Number (CN)= 80.0
ID= 1 DT= 1.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.82	0.267	102.24	0.517	81.79	0.77	20.45
0.033	6.82	0.283	102.24	0.533	81.79	0.78	20.45
0.050	6.82	0.300	102.24	0.550	81.79	0.80	20.45
0.067	6.82	0.317	102.24	0.567	81.79	0.82	20.45
0.083	6.82	0.333	102.24	0.583	81.79	0.83	20.45
0.100	20.45	0.350	190.85	0.600	54.53	0.85	6.82
0.117	20.45	0.367	190.85	0.617	54.53	0.87	6.82
0.133	20.45	0.383	190.85	0.633	54.53	0.88	6.82
0.150	20.45	0.400	190.85	0.650	54.53	0.90	6.82
0.167	20.45	0.417	190.85	0.667	54.53	0.92	6.82
0.183	54.53	0.433	102.24	0.683	34.08	0.93	6.82
0.200	54.53	0.450	102.24	0.700	34.08	0.95	6.82
0.217	54.53	0.467	102.24	0.717	34.08	0.97	6.82
0.233	54.53	0.483	102.24	0.733	34.08	0.98	6.82
0.250	54.53	0.500	102.24	0.750	34.08	1.00	6.82

Unit Hyd Qpeak (cms)= 0.737

PEAK FLOW (cms)= 0.653 (i)
TIME TO PEAK (hrs)= 3.133
RUNOFF VOLUME (mm)= 22.570
TOTAL RAINFALL (mm)= 56.802
RUNOFF COEFFICIENT = 0.397

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	50.34	0.653	3.13	22.57
	+ ID2= 2 (0704):	18.38	0.015	5.77	3.49
	ID = 3 (0901):	68.72	0.662	3.15	17.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

APPENDIX B-2

FEATURE BASED WATER BALANCE HYDROLOGY

```
2
*#*****************************************************************
*# HYDROLOGIC MODEL - EASTERN SWD3-2 WETLAND WATER BUDGET          *
*# EXISTING CONDITIONS - CONTINUOUS MODEL                         *
*#                                                                *
*# CREATED BY SABOURIN KIMBLE & ASSOCIATES LTD.                   *
*# LAST MODEL UPDATE: JANUARY 2020        PROJECT NO: 13 302      *
*# DATA FILE: C2-Pre.DAT                                         *
*#*****************************************************************
*
START                TZERO=[1994.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[94]
*
READ AES DATA       AES_FILENAME=["Oshawa.123"],
                    IELEM=[123],
                    START_DATE=[0], END_DATE=[-214]
*
COMPUTE API         APII=[100], APIK=[0.85]/day
*
******
****** EASTERN SWD3-2 WETLAND
******
CONTINUOUS NASHYD   ID=1, NHYD=["Catchment C2 Pre"], DT=[20]min, AREA=[11.125](ha),
                    DWF=[0.0](cms),  CN/C=[85], IA=[6](mm),
                    N=[3.0], TP=[0.47]hrs,
                    Continuous simulation parameters:
                    IaRECper=[12](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.25]/(mm),
                    InterEventTime=[24](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[] ,
                    InitGWResVol=[](mm), GWResK=[](mm/day/mm)
                    VHydCond=[](mm/hr),   END=-1
*-------------------------------------------------------------------------
****
SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["Tot Pre RO"]
                    HYD_COMMENT=["Total Pre-development Runoff"]
****
*
START                TZERO=[1995.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[95]
*
START                TZERO=[1996.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[96]
*
START                TZERO=[1997.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[97]
*
START                TZERO=[1998.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[98]
*
START                TZERO=[1999.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[99]
*
FINISH
```

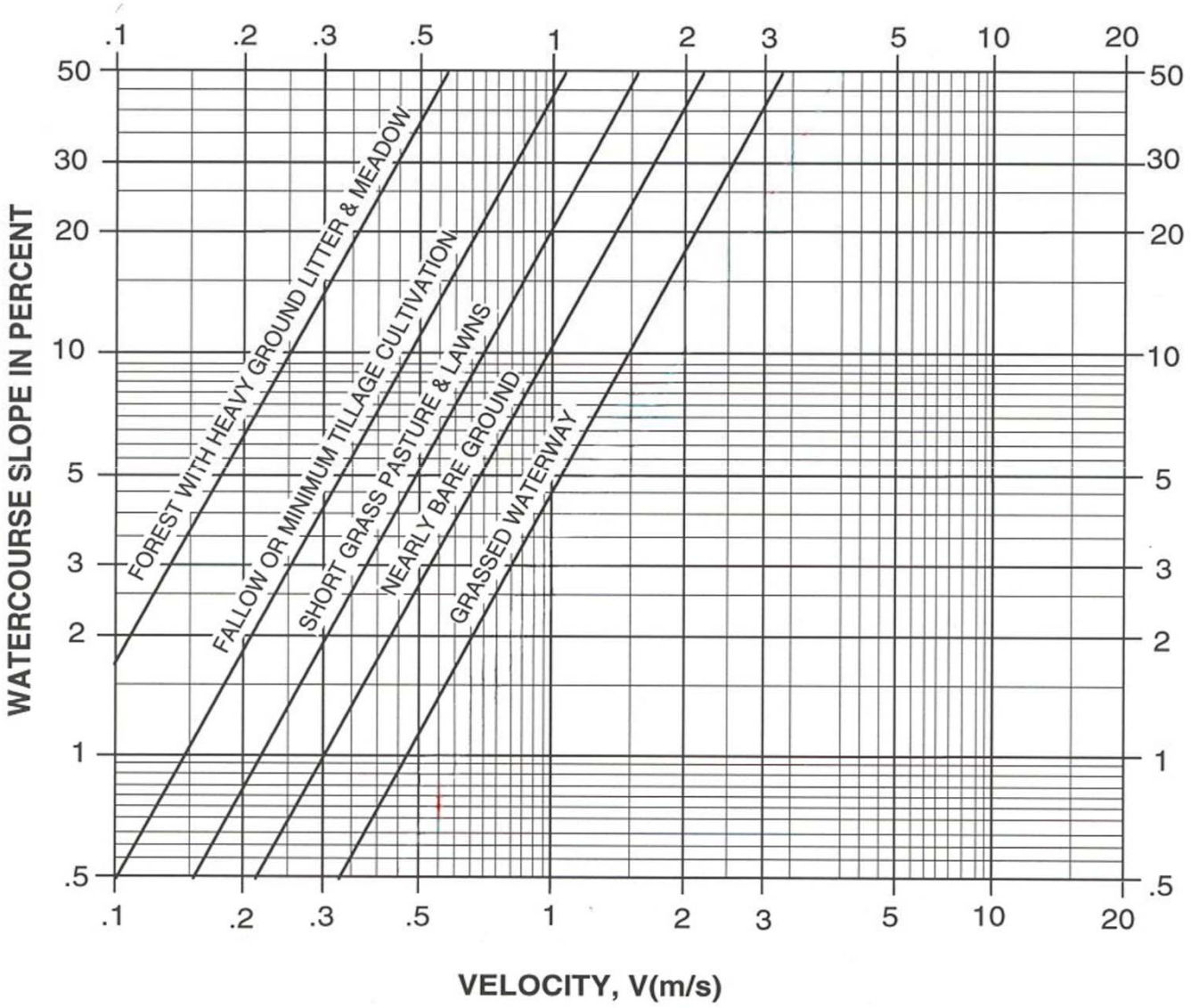
13:302
Durham Live!

TIME TO PEAK CALCULATOR - UPLANDS METHOD - CATCHMENT C2

Pre-Development Conditions

Given		
Length:	385	m
Rise:	3.35	m
Slope:	0.87%	
Land Use:	Fallow	

Using Chart Below		
Velocity:	0.15	m/s
Tc:	0.71	hr
Tp:	**0.47**	**hr**



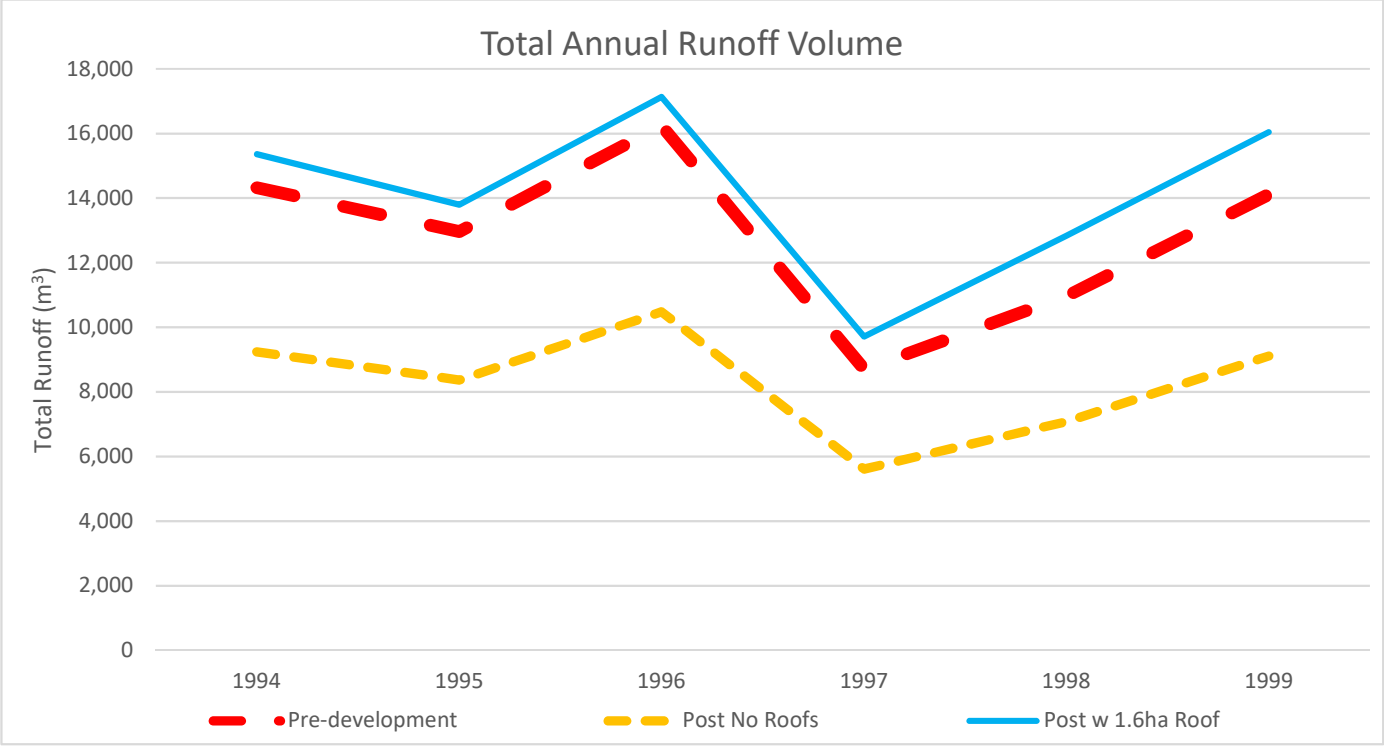
```
2
*#*****************************************************************
*# HYDROLOGIC MODEL - EASTERN SWD3-2 WETLAND WATER BUDGET          *
*# POST DEV CONDITIONS (NO SUPPLEMENTAL) - CONTINUOUS MODEL        *
*#                                                                 *
*# CREATED BY SABOURIN KIMBLE & ASSOCIATES LTD.                    *
*# LAST MODEL UPDATE: JANUARY 2020        PROJECT NO: 13 302       *
*# DATA FILE: C2-Post.DAT                                         *
*#*****************************************************************
*
START                TZERO=[1994.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[94]
*
READ AES DATA       AES_FILENAME=["Oshawa.123"],
                    IELEM=[123],
                    START_DATE=[0], END_DATE=[-214]
*
COMPUTE API         APII=[100], APIK=[0.85]/day
*
*
******
****** EASTERN SWD3-2 WETLAND
******
CONTINUOUS NASHYD   ID=1, NHYD=["Catchment C2 Post"], DT=[20]min, AREA=[7.178](ha),
                    DWF=[0.0](cms),  CN/C=[85], IA=[6](mm),
                    N=[3.0], TP=[0.40]hrs,
                    Continuous simulation parameters:
                    IaRECper=[12](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.25]/(mm),
                    InterEventTime=[24](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[] ,
                    InitGWResVol=[](mm), GWResK=[](mm/day/mm)
                    VHydCond=[](mm/hr),   END=-1
****
SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["Tot Post RO"]
                    HYD_COMMENT=["Total runoff to wetland"]
*
START                TZERO=[1995.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[95]
*
START                TZERO=[1996.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[96]
*
START                TZERO=[1997.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[97]
*
START                TZERO=[1998.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[98]
*
START                TZERO=[1999.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[99]
*
FINISH
```

Post Development with Roofs
2
```
*#****************************************************************
*# HYDROLOGIC MODEL - EASTERN SWD3-2 WETLAND WATER BUDGET         *
*# POST DEV CONDITIONS W SUPPLEMENTAL - CONTINUOUS MODEL          *
*#                                                               *
*# CREATED BY SABOURIN KIMBLE & ASSOCIATES LTD.                  *
*# LAST MODEL UPDATE: JANUARY 2020        PROJECT NO: 13 302     *
*# DATA FILE: C2-PwR.DAT                                         *
*#****************************************************************
*
START                TZERO=[1994.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[94]
*
READ AES DATA       AES_FILENAME=["Oshawa.123"],
                    IELEM=[123],
                    START_DATE=[0], END_DATE=[-214]
*
COMPUTE API         APII=[100], APIK=[0.85]/day
*
******
****** EASTERN SWD3-2 WETLAND
******
CONTINUOUS NASHYD   ID=1, NHYD=["Catcment 2 Post"], DT=[20]min, AREA=[7.178](ha),
                    DWF=[0.0](cms),  CN/C=[85], IA=[6](mm),
                    N=[3.0], TP=[0.4]hrs,
                    Continuous simulation parameters:
                    IaRECper=[12](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.25]/(mm),
                    InterEventTime=[24](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[] ,
                    InitGWResVol=[](mm), GWResK=[](mm/day/mm)
                    VHydCond=[](mm/hr),   END=-1
****
CONTINUOUS STANDHYD ID = [2], NHYD=["Roofs"], DT=[20](min), AREA=[1.6](ha),
                    XIMP=[0.95], TIMP=[0.95], DWF=[0.0](cms), LOSS=[2],
                    SCS curve number CN=[85],
                    Pervious   surfaces: IAper=[6](mm), SLPP=[2](%),
                            LGP=[1](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1](mm), SLPI=[0.5](%),
                            LGI=[81](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[12](hrs),  IaRECimp=[2](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.25]/(mm),
                    InterEventTime=[24](hrs),   END=-1
****
SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["Roof RO"]
                    HYD_COMMENT=["Roof Runoff"]
****
ADD HYD             IDsum=[3], NHYD=["Total Post w Roof Runoff"], IDs to add=[1, 2]
****
SAVE HYD            ID=[3],   # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["Tot PwR RO"]
                    HYD_COMMENT=["Total runoff to wetland with supplemental roof drainage"]
****
*
START                TZERO=[1995.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[95]
*
START                TZERO=[1996.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[96]
*
START                TZERO=[1997.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[97]
*
START                TZERO=[1998.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[98]
*
START                TZERO=[1999.0401],  METOUT=[2],  NSTORM=[0],  NRUN=[99]
*
FINISH
```

13:302
Durham Live!

Eastern SWD3-2 Wetland

Year	Pre	Post		Post w 1.6ha Roof	
	Runoff (m^3)	Runoff (m^3)	Difference (%)	Runoff (m^3)	Difference (%)
1994	14,323	9,242	-35%	15,364	7%
1995	12,965	8,365	-35%	13,798	6%
1996	16,245	10,482	-35%	17,133	5%
1997	8,701	5,614	-35%	9,714	12%
1998	10,967	7,076	-35%	12,838	17%
1999	14,119	9,109	-35%	16,050	14%

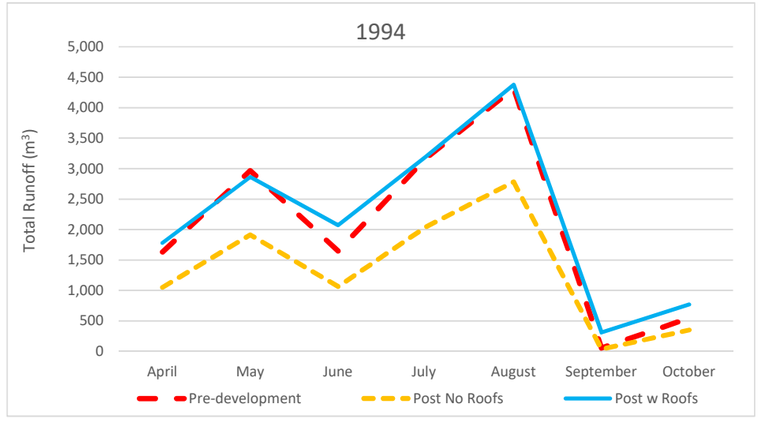


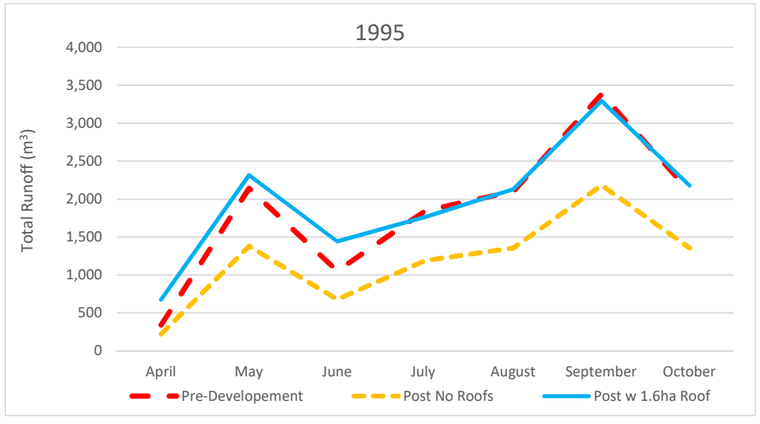
13:302
Durham Live!

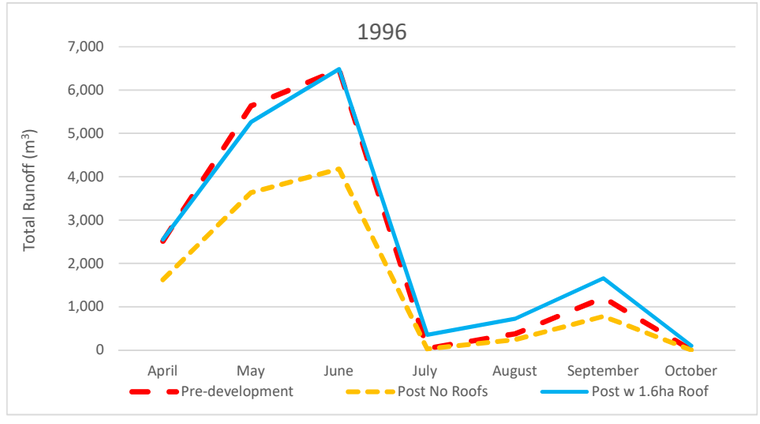
Eastern SWD3-2 Wetland Water Balance

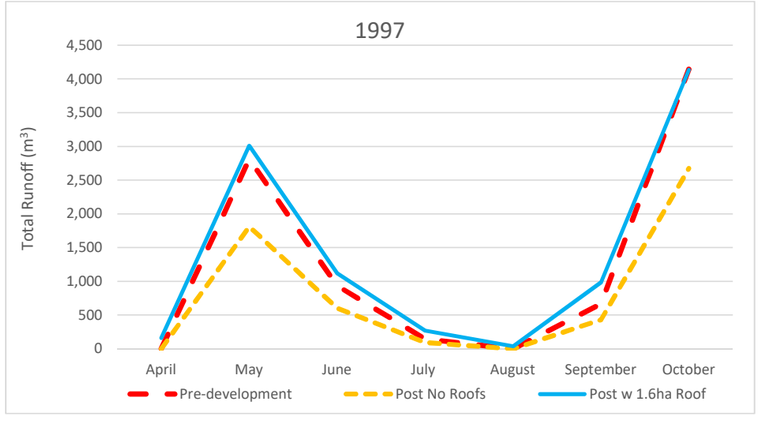
Drainage Area (ha)		
Pre	**Post No Roofs**	**Post w 1.6ha Roof**
11.125	7.178	8.778

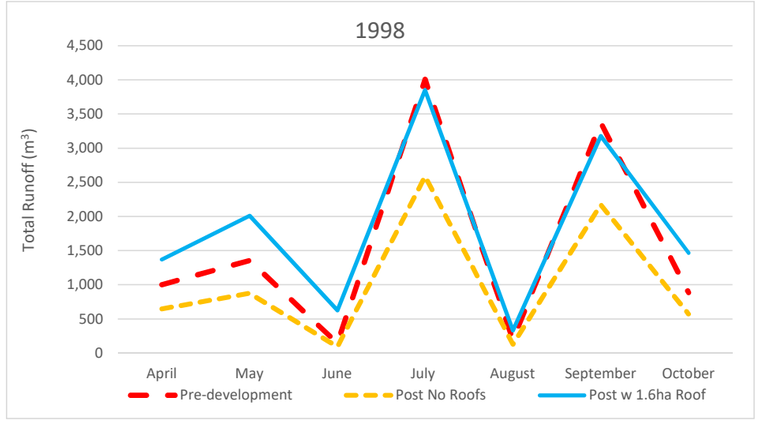
Month	Runoff Volume (m^3)																	
	1994			1995			1996			1997			1998			1999		
	Pre	Post No Roofs	Post w 1.6ha Roof	Pre	Post No Roofs	Post w 1.6ha Roof	Pre	Post No Roofs	Post w 1.6ha Roof	Pre	Post No Roofs	Post w 1.6ha Roof	Pre	Post No Roofs	Post w 1.6ha Roof	Pre	Post No Roofs	Post w 1.6ha Roof
April	1,631	1,052	1,780	341	220	675	2,514	1,622	2,551	0	0	161	1,002	646	1,371	1	1	125
May	2,968	1,915	2,862	2,141	1,381	2,315	5,634	3,635	5,261	2,810	1,813	3,008	1,358	876	2,011	5,141	3,317	5,380
June	1,650	1,064	2,072	1,052	679	1,444	6,476	4,178	6,484	934	603	1,117	143	92	625	2,105	1,358	2,449
July	3,164	2,041	3,194	1,847	1,191	1,764	40	26	353	144	93	270	4,010	2,587	3,852	3,401	2,194	3,676
August	4,313	2,783	4,378	2,101	1,355	2,131	374	241	727	0	0	38	196	127	330	165	107	625
September	54	35	309	3,382	2,182	3,293	1,208	779	1,657	668	431	984	3,371	2,175	3,181	2,533	1,634	2,695
October	544	351	770	2,102	1,356	2,177	0	0	100	4,145	2,675	4,135	887	572	1,468	773	499	1,099
Totals	14,323	9,242	15,364	12,965	8,365	13,798	16,245	10,482	17,133	8,701	5,614	9,714	10,967	7,076	12,838	14,119	9,109	16,050

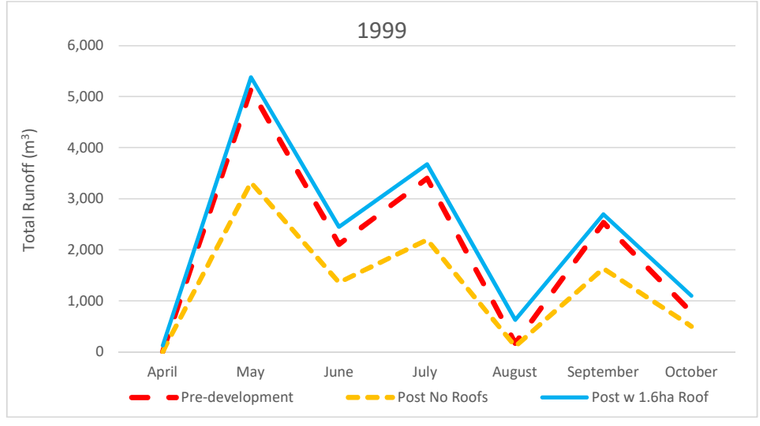








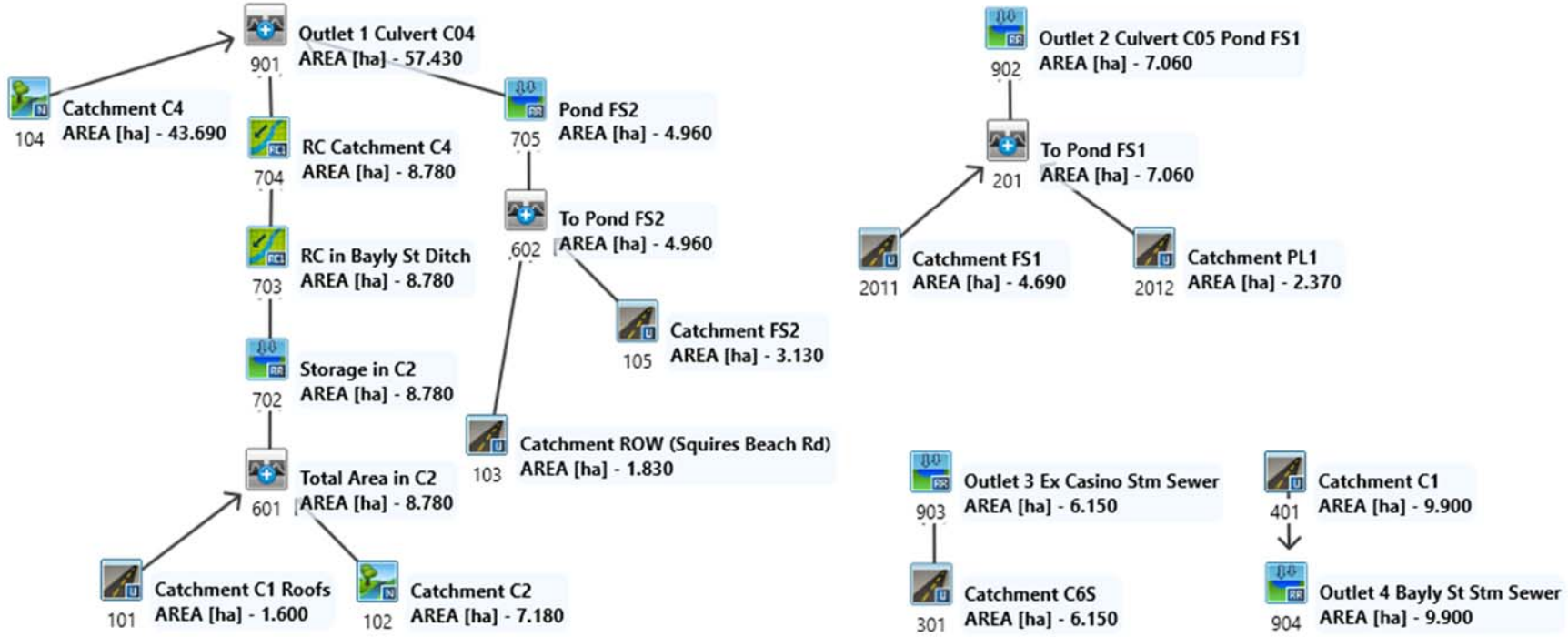




APPENDIX B-3

POST DEVELOPMENT HYDROLOGY

Post Development VO5 Schematic



```
       V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
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Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\446e9899-40ee-4522-ae03-b0389e16b62a\scena

DATE: 02-03-2020 TIME: 04:44:13

USER:

COMMENTS: _____

****
** SIMULATION : 000-25mm Stm **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
Ptotal= 25.02 mm	Comments: 4hr25mmPickering

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.00	1.33	6.20	2.50	4.80	3.67	2.62
0.33	2.17	1.50	12.18	2.67	4.21	3.83	2.47
0.50	2.38	1.67	41.67	2.83	3.78	4.00	2.35
0.67	2.66	1.83	15.28	3.00	3.45	4.17	2.23
0.83	3.03	2.00	9.22	3.17	3.18		
1.00	3.58	2.17	6.88	3.33	2.95		
1.17	4.47	2.33	5.62	3.50	2.76		

CALIB	
STANDHYD (0401)	Area (ha)= 9.90
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	1.067	4.47	2.117	6.88	3.17	3.18
0.033	0.00	1.083	4.47	2.133	6.88	3.18	2.95
0.050	0.00	1.100	4.47	2.150	6.88	3.20	2.95
0.067	0.00	1.117	4.47	2.167	6.88	3.22	2.95
0.083	0.00	1.133	4.47	2.183	5.62	3.23	2.95
0.100	0.00	1.150	4.47	2.200	5.62	3.25	2.95
0.117	0.00	1.167	4.47	2.217	5.62	3.27	2.95
0.133	0.00	1.183	6.20	2.233	5.62	3.28	2.95
0.150	0.00	1.200	6.20	2.250	5.62	3.30	2.95
0.167	0.00	1.217	6.20	2.267	5.62	3.32	2.95
0.183	2.17	1.233	6.20	2.283	5.62	3.33	2.95
0.200	2.17	1.250	6.20	2.300	5.62	3.35	2.76
0.217	2.17	1.267	6.20	2.317	5.62	3.37	2.76
0.233	2.17	1.283	6.20	2.333	5.62	3.38	2.76
0.250	2.17	1.300	6.20	2.350	4.80	3.40	2.76
0.267	2.17	1.317	6.20	2.367	4.80	3.42	2.76
0.283	2.17	1.333	6.20	2.383	4.80	3.43	2.76
0.300	2.17	1.350	12.18	2.400	4.80	3.45	2.76
0.317	2.17	1.367	12.18	2.417	4.80	3.47	2.76
0.333	2.17	1.383	12.18	2.433	4.80	3.48	2.76
0.350	2.38	1.400	12.18	2.450	4.80	3.50	2.76
0.367	2.38	1.417	12.18	2.467	4.80	3.52	2.62
0.383	2.38	1.433	12.18	2.483	4.80	3.53	2.62
0.400	2.38	1.450	12.18	2.500	4.80	3.55	2.62
0.417	2.38	1.467	12.18	2.517	4.21	3.57	2.62
0.433	2.38	1.483	12.18	2.533	4.21	3.58	2.62
0.450	2.38	1.500	12.18	2.550	4.21	3.60	2.62
0.467	2.38	1.517	41.67	2.567	4.21	3.62	2.62
0.483	2.38	1.533	41.67	2.583	4.21	3.63	2.62
0.500	2.38	1.550	41.67	2.600	4.21	3.65	2.62
0.517	2.66	1.567	41.67	2.617	4.21	3.67	2.62
0.533	2.66	1.583	41.67	2.633	4.21	3.68	2.47
0.550	2.66	1.600	41.67	2.650	4.21	3.70	2.47
0.567	2.66	1.617	41.67	2.667	4.21	3.72	2.47
0.583	2.66	1.633	41.67	2.683	3.78	3.73	2.47
0.600	2.66	1.650	41.67	2.700	3.78	3.75	2.47
0.617	2.66	1.667	41.67	2.717	3.78	3.77	2.47
0.633	2.66	1.683	15.28	2.733	3.78	3.78	2.47
0.650	2.66	1.700	15.28	2.750	3.78	3.80	2.47
0.667	2.66	1.717	15.28	2.767	3.78	3.82	2.47
0.683	3.03	1.733	15.28	2.783	3.78	3.83	2.47
0.700	3.03	1.750	15.28	2.800	3.78	3.85	2.35
0.717	3.03	1.767	15.28	2.817	3.78	3.87	2.35
0.733	3.03	1.783	15.28	2.833	3.78	3.88	2.35
0.750	3.03	1.800	15.28	2.850	3.45	3.90	2.35
0.767	3.03	1.817	15.28	2.867	3.45	3.92	2.35
0.783	3.03	1.833	15.28	2.883	3.45	3.93	2.35
0.800	3.03	1.850	9.22	2.900	3.45	3.95	2.35
0.817	3.03	1.867	9.22	2.917	3.45	3.97	2.35
0.833	3.03	1.883	9.22	2.933	3.45	3.98	2.35
0.850	3.58	1.900	9.22	2.950	3.45	4.00	2.35
0.867	3.58	1.917	9.22	2.967	3.45	4.02	2.23
0.883	3.58	1.933	9.22	2.983	3.45	4.03	2.23
0.900	3.58	1.950	9.22	3.000	3.45	4.05	2.23
0.917	3.58	1.967	9.22	3.017	3.18	4.07	2.23

0.933	3.58	1.983	9.22	3.033	3.18	4.08	2.23
0.950	3.58	2.000	9.22	3.050	3.18	4.10	2.23
0.967	3.58	2.017	6.88	3.067	3.18	4.12	2.23
0.983	3.58	2.033	6.88	3.083	3.18	4.13	2.23
1.000	3.58	2.050	6.88	3.100	3.18	4.15	2.23
1.017	4.47	2.067	6.88	3.117	3.18	4.17	2.23
1.033	4.47	2.083	6.88	3.133	3.18		
1.050	4.47	2.100	6.88	3.150	3.18		

Max.Eff.Inten.(mm/hr)=	41.67	6.36		
over (min)	6.00	11.00		
Storage Coeff. (min)=	6.39 (ii)	10.55 (ii)		
Unit Hyd. Tpeak (min)=	6.00	11.00		
Unit Hyd. peak (cms)=	0.18	0.11		
			TOTALS	
PEAK FLOW (cms)=	0.81	0.01	0.815 (iii)	
TIME TO PEAK (hrs)=	1.70	1.88	1.70	
RUNOFF VOLUME (mm)=	24.02	5.67	22.19	
TOTAL RAINFALL (mm)=	25.02	25.02	25.02	
RUNOFF COEFFICIENT =	0.96	0.23	0.89	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	0.815	1.70	22.19
OUTFLOW: ID= 1 (0904)	9.900	0.502	1.87	22.18

PEAK FLOW REDUCTION [Qout/Qin](%)= 61.60
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.0477

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
Ptotal= 25.02 mm	Comments: 4hr25mmPickering

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.00	1.33	6.20	2.50	4.80	3.67	2.62
0.33	2.17	1.50	12.18	2.67	4.21	3.83	2.47
0.50	2.38	1.67	41.67	2.83	3.78	4.00	2.35
0.67	2.66	1.83	15.28	3.00	3.45	4.17	2.23
0.83	3.03	2.00	9.22	3.17	3.18		
1.00	3.58	2.17	6.88	3.33	2.95		
1.17	4.47	2.33	5.62	3.50	2.76		

CALIB					
NASHYD (0104)	Area	(ha)=	43.69	Curve Number	(CN)= 80.0
ID= 1 DT= 5.0 min	Ia	(mm)=	6.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		2.61		

Pre Development

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.167	4.47	2.250	5.62	3.33	2.95
0.167	0.00	1.250	6.20	2.333	5.62	3.42	2.76
0.250	2.17	1.333	6.20	2.417	4.80	3.50	2.76
0.333	2.17	1.417	12.18	2.500	4.80	3.58	2.62
0.417	2.38	1.500	12.18	2.583	4.21	3.67	2.62
0.500	2.38	1.583	41.67	2.667	4.21	3.75	2.47
0.583	2.66	1.667	41.67	2.750	3.78	3.83	2.47
0.667	2.66	1.750	15.28	2.833	3.78	3.92	2.35
0.750	3.03	1.833	15.28	2.917	3.45	4.00	2.35
0.833	3.03	1.917	9.22	3.000	3.45	4.08	2.23
0.917	3.58	2.000	9.22	3.083	3.18	4.17	2.23
1.000	3.58	2.083	6.88	3.167	3.18		
1.083	4.47	2.167	6.88	3.250	2.95		

Unit Hyd Qpeak (cms)=	0.639	
PEAK FLOW (cms)=	0.101	(i)
TIME TO PEAK (hrs)=	5.250	
RUNOFF VOLUME (mm)=	4.385	
TOTAL RAINFALL (mm)=	25.023	
RUNOFF COEFFICIENT =	0.175	

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
Ptotal= 25.02 mm	Comments: 4hr25mmPickering

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.00	1.33	6.20	2.50	4.80	3.67	2.62
0.33	2.17	1.50	12.18	2.67	4.21	3.83	2.47
0.50	2.38	1.67	41.67	2.83	3.78	4.00	2.35
0.67	2.66	1.83	15.28	3.00	3.45	4.17	2.23
0.83	3.03	2.00	9.22	3.17	3.18		
1.00	3.58	2.17	6.88	3.33	2.95		
1.17	4.47	2.33	5.62	3.50	2.76		

CALIB					
NASHYD (0102)	Area	(ha)=	7.18	Curve Number	(CN)= 73.0
ID= 1 DT= 5.0 min	Ia	(mm)=	6.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=		0.40		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.167	4.47	2.250	5.62	3.33	2.95
0.167	0.00	1.250	6.20	2.333	5.62	3.42	2.76
0.250	2.17	1.333	6.20	2.417	4.80	3.50	2.76

0.333	2.17	1.417	12.18	2.500	4.80	3.58	2.62
0.417	2.38	1.500	12.18	2.583	4.21	3.67	2.62
0.500	2.38	1.583	41.67	2.667	4.21	3.75	2.47
0.583	2.66	1.667	41.67	2.750	3.78	3.83	2.47
0.667	2.66	1.750	15.28	2.833	3.78	3.92	2.35
0.750	3.03	1.833	15.28	2.917	3.45	4.00	2.35
0.833	3.03	1.917	9.22	3.000	3.45	4.08	2.23
0.917	3.58	2.000	9.22	3.083	3.18	4.17	2.23
1.000	3.58	2.083	6.88	3.167	3.18		
1.083	4.47	2.167	6.88	3.250	2.95		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.032 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 3.203
TOTAL RAINFALL (mm)= 25.023
RUNOFF COEFFICIENT = 0.128

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
Ptotal= 25.02 mm	Comments: 4hr25mmPickering

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.00	1.33	6.20	2.50	4.80	3.67	2.62
0.33	2.17	1.50	12.18	2.67	4.21	3.83	2.47
0.50	2.38	1.67	41.67	2.83	3.78	4.00	2.35
0.67	2.66	1.83	15.28	3.00	3.45	4.17	2.23
0.83	3.03	2.00	9.22	3.17	3.18		
1.00	3.58	2.17	6.88	3.33	2.95		
1.17	4.47	2.33	5.62	3.50	2.76		

CALIB	
STANDHYD (0101)	Area (ha)= 1.60
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.167	4.47	2.250	5.62	3.33	2.95
0.167	0.00	1.250	6.20	2.333	5.62	3.42	2.76
0.250	2.17	1.333	6.20	2.417	4.80	3.50	2.76
0.333	2.17	1.417	12.18	2.500	4.80	3.58	2.62
0.417	2.38	1.500	12.18	2.583	4.21	3.67	2.62
0.500	2.38	1.583	41.67	2.667	4.21	3.75	2.47
0.583	2.66	1.667	41.67	2.750	3.78	3.83	2.47
0.667	2.66	1.750	15.28	2.833	3.78	3.92	2.35
0.750	3.03	1.833	15.28	2.917	3.45	4.00	2.35

Pre Development

0.833	3.03	1.917	9.22	3.000	3.45	4.08	2.23
0.917	3.58	2.000	9.22	3.083	3.18	4.17	2.23
1.000	3.58	2.083	6.88	3.167	3.18		
1.083	4.47	2.167	6.88	3.250	2.95		

				TOTALS
Max.Eff.Inten.(mm/hr)=		41.67	25.82	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.70 (ii)	5.29 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.25	0.16	
PEAK FLOW	(cms)=	0.17	0.00	0.175 (iii)
TIME TO PEAK	(hrs)=	1.67	1.75	1.67
RUNOFF VOLUME	(mm)=	24.02	15.43	23.94
TOTAL RAINFALL	(mm)=	25.02	25.02	25.02
RUNOFF COEFFICIENT	=	0.96	0.62	0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0101):	1.60	0.175	1.67	23.94
	+ ID2= 2 (0102):	7.18	0.032	2.33	3.20
	ID = 3 (0601):	8.78	0.179	1.67	6.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0601)		8.780	0.179	1.67	6.98
OUTFLOW: ID= 1 (0702)		8.780	0.000	6.50	0.00
	PEAK FLOW REDUCTION [Qout/Qin](%)=		0.00		
	TIME SHIFT OF PEAK FLOW (min)=		290.00		
	MAXIMUM STORAGE USED (ha.m.)=		0.0613		

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel

2.62	87.50	0.0300	Main Channel	
3.31	87.75	0.0500		
3.99	88.00	0.0500		
4.59	88.22	0.0500		

<-------------------- TRAVEL TIME TABLE ---------------------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)	8.78	0.00	6.50	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	8.78	0.00	6.42	0.00	0.00	0.17

ROUTE CHN(0704) / IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<-------------------- TRAVEL TIME TABLE ---------------------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40

0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.00	6.42	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.00	6.42	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
Ptotal= 25.02 mm	Comments: 4hr25mmPickering

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.00	1.33	6.20	2.50	4.80	3.67	2.62
0.33	2.17	1.50	12.18	2.67	4.21	3.83	2.47
0.50	2.38	1.67	41.67	2.83	3.78	4.00	2.35
0.67	2.66	1.83	15.28	3.00	3.45	4.17	2.23
0.83	3.03	2.00	9.22	3.17	3.18		
1.00	3.58	2.17	6.88	3.33	2.95		
1.17	4.47	2.33	5.62	3.50	2.76		

CALIB STANDHYD (0105) ID= 1 DT= 5.0 min	Area (ha)= 3.13 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	1.167	4.47	2.250	5.62	3.33	2.95
0.167	0.00	1.250	6.20	2.333	5.62	3.42	2.76
0.250	2.17	1.333	6.20	2.417	4.80	3.50	2.76
0.333	2.17	1.417	12.18	2.500	4.80	3.58	2.62
0.417	2.38	1.500	12.18	2.583	4.21	3.67	2.62
0.500	2.38	1.583	41.67	2.667	4.21	3.75	2.47
0.583	2.66	1.667	41.67	2.750	3.78	3.83	2.47
0.667	2.66	1.750	15.28	2.833	3.78	3.92	2.35
0.750	3.03	1.833	15.28	2.917	3.45	4.00	2.35
0.833	3.03	1.917	9.22	3.000	3.45	4.08	2.23
0.917	3.58	2.000	9.22	3.083	3.18	4.17	2.23
1.000	3.58	2.083	6.88	3.167	3.18		
1.083	4.47	2.167	6.88	3.250	2.95		

Max.Eff.Inten.(mm/hr)=		41.67	6.24
	over (min)	5.00	10.00
Storage Coeff. (min)=		4.52 (ii)	6.12 (ii)
Unit Hyd. Tpeak (min)=		5.00	10.00

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                                        Pre Development
     Unit Hyd. peak  (cms)=       0.23         0.15
                                                *TOTALS*
     PEAK FLOW       (cms)=       0.33         0.00          0.331 (iii)
     TIME TO PEAK    (hrs)=       1.67         1.75           1.67
     RUNOFF VOLUME    (mm)=      24.02         5.67          23.84
     TOTAL RAINFALL   (mm)=      25.02        25.02          25.02
     RUNOFF COEFFICIENT   =       0.96         0.23           0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  85.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
| Ptotal= 25.02 mm |    Comments: 4hr25mmPickering
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.00 |  1.33    6.20 |  2.50    4.80 |  3.67    2.62
                0.33    2.17 |  1.50   12.18 |  2.67    4.21 |  3.83    2.47
                0.50    2.38 |  1.67   41.67 |  2.83    3.78 |  4.00    2.35
                0.67    2.66 |  1.83   15.28 |  3.00    3.45 |  4.17    2.23
                0.83    3.03 |  2.00    9.22 |  3.17    3.18 |
                1.00    3.58 |  2.17    6.88 |  3.33    2.95 |
                1.17    4.47 |  2.33    5.62 |  3.50    2.76 |

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| CALIB            |
| STANDHYD (  0103)|   Area    (ha)=   1.83
|ID= 1 DT= 5.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.65         0.18
     Dep. Storage     (mm)=       1.00         6.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     110.45        40.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 1.167    4.47 | 2.250    5.62 |  3.33    2.95
               0.167    0.00 | 1.250    6.20 | 2.333    5.62 |  3.42    2.76
               0.250    2.17 | 1.333    6.20 | 2.417    4.80 |  3.50    2.76
               0.333    2.17 | 1.417   12.18 | 2.500    4.80 |  3.58    2.62
               0.417    2.38 | 1.500   12.18 | 2.583    4.21 |  3.67    2.62
               0.500    2.38 | 1.583   41.67 | 2.667    4.21 |  3.75    2.47
               0.583    2.66 | 1.667   41.67 | 2.750    3.78 |  3.83    2.47
               0.667    2.66 | 1.750   15.28 | 2.833    3.78 |  3.92    2.35
               0.750    3.03 | 1.833   15.28 | 2.917    3.45 |  4.00    2.35
               0.833    3.03 | 1.917    9.22 | 3.000    3.45 |  4.08    2.23
               0.917    3.58 | 2.000    9.22 | 3.083    3.18 |  4.17    2.23
               1.000    3.58 | 2.083    6.88 | 3.167    3.18 |
               1.083    4.47 | 2.167    6.88 | 3.250    2.95 |
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                                        Pre Development
     Max.Eff.Inten.(mm/hr)=     41.67         6.24
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       3.85 (ii)    8.01 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.25         0.13
                                                *TOTALS*
     PEAK FLOW       (cms)=       0.18         0.00          0.182 (iii)
     TIME TO PEAK    (hrs)=       1.67         1.75           1.67
     RUNOFF VOLUME    (mm)=      24.02         5.67          22.19
     TOTAL RAINFALL   (mm)=      25.02        25.02          25.02
     RUNOFF COEFFICIENT   =       0.96         0.23           0.89

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  85.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD  (  0602)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0103):     1.83   0.182     1.67    22.19
     + ID2= 2 (  0105):     3.13   0.331     1.67    23.84
       ================================================
       ID = 3 (  0602):     4.96   0.512     1.67    23.23

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR(  0705)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |  0.4450      0.1950
                          0.0120     0.1170   |  0.6080      0.2145
                          0.0650     0.1365   |  0.7950      0.2340
                          0.1670     0.1560   |  0.9980      0.2535
                          0.2940     0.1755   |  1.4680      0.2632

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0602)     4.960      0.512      1.67      23.23
   OUTFLOW: ID= 1 (  0705)     4.960      0.011      4.25      22.73

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.12
                  TIME SHIFT OF PEAK FLOW         (min)=155.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1060

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--------------------
| ADD HYD  (  0901)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0104):    43.69   0.101     5.25     4.39
     + ID2= 2 (  0704):     8.78   0.000     6.42     0.00
       ================================================
       ID = 3 (  0901):    52.47   0.101     5.25     3.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0901):	52.47	0.101	5.25	3.65
	+ ID2= 2 (0705):	4.96	0.011	4.25	22.73
	ID = 1 (0901):	57.43	0.111	5.25	5.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
Ptotal= 25.02 mm	Comments: 4hr25mmPickering

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.00	1.33	6.20	2.50	4.80	3.67	2.62
0.33	2.17	1.50	12.18	2.67	4.21	3.83	2.47
0.50	2.38	1.67	41.67	2.83	3.78	4.00	2.35
0.67	2.66	1.83	15.28	3.00	3.45	4.17	2.23
0.83	3.03	2.00	9.22	3.17	3.18		
1.00	3.58	2.17	6.88	3.33	2.95		
1.17	4.47	2.33	5.62	3.50	2.76		

CALIB	
STANDHYD (2011)	Area (ha)= 4.69
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	1.067	4.47	2.117	6.88	3.17	3.18
0.033	0.00	1.083	4.47	2.133	6.88	3.18	2.95
0.050	0.00	1.100	4.47	2.150	6.88	3.20	2.95
0.067	0.00	1.117	4.47	2.167	6.88	3.22	2.95
0.083	0.00	1.133	4.47	2.183	5.62	3.23	2.95
0.100	0.00	1.150	4.47	2.200	5.62	3.25	2.95
0.117	0.00	1.167	4.47	2.217	5.62	3.27	2.95
0.133	0.00	1.183	6.20	2.233	5.62	3.28	2.95
0.150	0.00	1.200	6.20	2.250	5.62	3.30	2.95
0.167	0.00	1.217	6.20	2.267	5.62	3.32	2.95
0.183	2.17	1.233	6.20	2.283	5.62	3.33	2.95
0.200	2.17	1.250	6.20	2.300	5.62	3.35	2.76
0.217	2.17	1.267	6.20	2.317	5.62	3.37	2.76
0.233	2.17	1.283	6.20	2.333	5.62	3.38	2.76
0.250	2.17	1.300	6.20	2.350	4.80	3.40	2.76
0.267	2.17	1.317	6.20	2.367	4.80	3.42	2.76
0.283	2.17	1.333	6.20	2.383	4.80	3.43	2.76
0.300	2.17	1.350	12.18	2.400	4.80	3.45	2.76

0.317	2.17	1.367	12.18	2.417	4.80	3.47	2.76
0.333	2.17	1.383	12.18	2.433	4.80	3.48	2.76
0.350	2.38	1.400	12.18	2.450	4.80	3.50	2.76
0.367	2.38	1.417	12.18	2.467	4.80	3.52	2.62
0.383	2.38	1.433	12.18	2.483	4.80	3.53	2.62
0.400	2.38	1.450	12.18	2.500	4.80	3.55	2.62
0.417	2.38	1.467	12.18	2.517	4.21	3.57	2.62
0.433	2.38	1.483	12.18	2.533	4.21	3.58	2.62
0.450	2.38	1.500	12.18	2.550	4.21	3.60	2.62
0.467	2.38	1.517	41.67	2.567	4.21	3.62	2.62
0.483	2.38	1.533	41.67	2.583	4.21	3.63	2.62
0.500	2.38	1.550	41.67	2.600	4.21	3.65	2.62
0.517	2.66	1.567	41.67	2.617	4.21	3.67	2.62
0.533	2.66	1.583	41.67	2.633	4.21	3.68	2.47
0.550	2.66	1.600	41.67	2.650	4.21	3.70	2.47
0.567	2.66	1.617	41.67	2.667	4.21	3.72	2.47
0.583	2.66	1.633	41.67	2.683	3.78	3.73	2.47
0.600	2.66	1.650	41.67	2.700	3.78	3.75	2.47
0.617	2.66	1.667	41.67	2.717	3.78	3.77	2.47
0.633	2.66	1.683	15.28	2.733	3.78	3.78	2.47
0.650	2.66	1.700	15.28	2.750	3.78	3.80	2.47
0.667	2.66	1.717	15.28	2.767	3.78	3.82	2.47
0.683	3.03	1.733	15.28	2.783	3.78	3.83	2.47
0.700	3.03	1.750	15.28	2.800	3.78	3.85	2.35
0.717	3.03	1.767	15.28	2.817	3.78	3.87	2.35
0.733	3.03	1.783	15.28	2.833	3.78	3.88	2.35
0.750	3.03	1.800	15.28	2.850	3.45	3.90	2.35
0.767	3.03	1.817	15.28	2.867	3.45	3.92	2.35
0.783	3.03	1.833	15.28	2.883	3.45	3.93	2.35
0.800	3.03	1.850	9.22	2.900	3.45	3.95	2.35
0.817	3.03	1.867	9.22	2.917	3.45	3.97	2.35
0.833	3.03	1.883	9.22	2.933	3.45	3.98	2.35
0.850	3.58	1.900	9.22	2.950	3.45	4.00	2.35
0.867	3.58	1.917	9.22	2.967	3.45	4.02	2.23
0.883	3.58	1.933	9.22	2.983	3.45	4.03	2.23
0.900	3.58	1.950	9.22	3.000	3.45	4.05	2.23
0.917	3.58	1.967	9.22	3.017	3.18	4.07	2.23
0.933	3.58	1.983	9.22	3.033	3.18	4.08	2.23
0.950	3.58	2.000	9.22	3.050	3.18	4.10	2.23
0.967	3.58	2.017	6.88	3.067	3.18	4.12	2.23
0.983	3.58	2.033	6.88	3.083	3.18	4.13	2.23
1.000	3.58	2.050	6.88	3.100	3.18	4.15	2.23
1.017	4.47	2.067	6.88	3.117	3.18	4.17	2.23
1.033	4.47	2.083	6.88	3.133	3.18		
1.050	4.47	2.100	6.88	3.150	3.18		

				TOTALS
Max.Eff.Inten.(mm/hr)=		41.67	6.36	
over (min)		5.00	7.00	
Storage Coeff. (min)=		5.10 (ii)	6.70 (ii)	
Unit Hyd. Tpeak (min)=		5.00	7.00	
Unit Hyd. peak (cms)=		0.22	0.17	
PEAK FLOW	(cms)=	0.46	0.00	0.456 (iii)
TIME TO PEAK	(hrs)=	1.68	1.77	1.68
RUNOFF VOLUME	(mm)=	24.02	5.67	23.84
TOTAL RAINFALL	(mm)=	25.02	25.02	25.02
RUNOFF COEFFICIENT	=	0.96	0.23	0.95

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
Ptotal= 25.02 mm	Comments: 4hr25mmPickering

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	0.00	1.33	6.20	2.50	4.80	3.67	2.62
0.33	2.17	1.50	12.18	2.67	4.21	3.83	2.47
0.50	2.38	1.67	41.67	2.83	3.78	4.00	2.35
0.67	2.66	1.83	15.28	3.00	3.45	4.17	2.23
0.83	3.03	2.00	9.22	3.17	3.18		
1.00	3.58	2.17	6.88	3.33	2.95		
1.17	4.47	2.33	5.62	3.50	2.76		

CALIB	
STANDHYD (2012)	Area (ha)= 2.37
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	1.067	4.47	2.117	6.88	3.17	3.18
0.033	0.00	1.083	4.47	2.133	6.88	3.18	2.95
0.050	0.00	1.100	4.47	2.150	6.88	3.20	2.95
0.067	0.00	1.117	4.47	2.167	6.88	3.22	2.95
0.083	0.00	1.133	4.47	2.183	5.62	3.23	2.95
0.100	0.00	1.150	4.47	2.200	5.62	3.25	2.95
0.117	0.00	1.167	4.47	2.217	5.62	3.27	2.95
0.133	0.00	1.183	6.20	2.233	5.62	3.28	2.95
0.150	0.00	1.200	6.20	2.250	5.62	3.30	2.95
0.167	0.00	1.217	6.20	2.267	5.62	3.32	2.95
0.183	2.17	1.233	6.20	2.283	5.62	3.33	2.95
0.200	2.17	1.250	6.20	2.300	5.62	3.35	2.76
0.217	2.17	1.267	6.20	2.317	5.62	3.37	2.76
0.233	2.17	1.283	6.20	2.333	5.62	3.38	2.76
0.250	2.17	1.300	6.20	2.350	4.80	3.40	2.76
0.267	2.17	1.317	6.20	2.367	4.80	3.42	2.76
0.283	2.17	1.333	6.20	2.383	4.80	3.43	2.76
0.300	2.17	1.350	12.18	2.400	4.80	3.45	2.76
0.317	2.17	1.367	12.18	2.417	4.80	3.47	2.76
0.333	2.17	1.383	12.18	2.433	4.80	3.48	2.76
0.350	2.38	1.400	12.18	2.450	4.80	3.50	2.76
0.367	2.38	1.417	12.18	2.467	4.80	3.52	2.62
0.383	2.38	1.433	12.18	2.483	4.80	3.53	2.62
0.400	2.38	1.450	12.18	2.500	4.80	3.55	2.62
0.417	2.38	1.467	12.18	2.517	4.21	3.57	2.62
0.433	2.38	1.483	12.18	2.533	4.21	3.58	2.62
0.450	2.38	1.500	12.18	2.550	4.21	3.60	2.62
0.467	2.38	1.517	41.67	2.567	4.21	3.62	2.62
0.483	2.38	1.533	41.67	2.583	4.21	3.63	2.62
0.500	2.38	1.550	41.67	2.600	4.21	3.65	2.62
0.517	2.66	1.567	41.67	2.617	4.21	3.67	2.62
0.533	2.66	1.583	41.67	2.633	4.21	3.68	2.47
0.550	2.66	1.600	41.67	2.650	4.21	3.70	2.47

Pre Development

0.567	2.66	1.617	41.67	2.667	4.21	3.72	2.47
0.583	2.66	1.633	41.67	2.683	3.78	3.73	2.47
0.600	2.66	1.650	41.67	2.700	3.78	3.75	2.47
0.617	2.66	1.667	41.67	2.717	3.78	3.77	2.47
0.633	2.66	1.683	15.28	2.733	3.78	3.78	2.47
0.650	2.66	1.700	15.28	2.750	3.78	3.80	2.47
0.667	2.66	1.717	15.28	2.767	3.78	3.82	2.47
0.683	3.03	1.733	15.28	2.783	3.78	3.83	2.47
0.700	3.03	1.750	15.28	2.800	3.78	3.85	2.35
0.717	3.03	1.767	15.28	2.817	3.78	3.87	2.35
0.733	3.03	1.783	15.28	2.833	3.78	3.88	2.35
0.750	3.03	1.800	15.28	2.850	3.45	3.90	2.35
0.767	3.03	1.817	15.28	2.867	3.45	3.92	2.35
0.783	3.03	1.833	15.28	2.883	3.45	3.93	2.35
0.800	3.03	1.850	9.22	2.900	3.45	3.95	2.35
0.817	3.03	1.867	9.22	2.917	3.45	3.97	2.35
0.833	3.03	1.883	9.22	2.933	3.45	3.98	2.35
0.850	3.58	1.900	9.22	2.950	3.45	4.00	2.35
0.867	3.58	1.917	9.22	2.967	3.45	4.02	2.23
0.883	3.58	1.933	9.22	2.983	3.45	4.03	2.23
0.900	3.58	1.950	9.22	3.000	3.45	4.05	2.23
0.917	3.58	1.967	9.22	3.017	3.18	4.07	2.23
0.933	3.58	1.983	9.22	3.033	3.18	4.08	2.23
0.950	3.58	2.000	9.22	3.050	3.18	4.10	2.23
0.967	3.58	2.017	6.88	3.067	3.18	4.12	2.23
0.983	3.58	2.033	6.88	3.083	3.18	4.13	2.23
1.000	3.58	2.050	6.88	3.100	3.18	4.15	2.23
1.017	4.47	2.067	6.88	3.117	3.18	4.17	2.23
1.033	4.47	2.083	6.88	3.133	3.18		
1.050	4.47	2.100	6.88	3.150	3.18		

				TOTALS
Max.Eff.Inten.(mm/hr)=		41.67	6.36	
over (min)		5.00	6.00	
Storage Coeff. (min)=		4.16 (ii)	5.75 (ii)	
Unit Hyd. Tpeak (min)=		5.00	6.00	
Unit Hyd. peak (cms)=		0.25	0.19	
PEAK FLOW	(cms)=	0.24	0.00	0.241 (iii)
TIME TO PEAK	(hrs)=	1.68	1.75	1.68
RUNOFF VOLUME	(mm)=	24.02	5.67	23.84
TOTAL RAINFALL	(mm)=	25.02	25.02	25.02
RUNOFF COEFFICIENT	=	0.96	0.23	0.95

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2011):		4.69	0.456	1.68	23.84
+ ID2= 2 (2012):		2.37	0.241	1.68	23.84
ID = 3 (0201):		7.06	0.697	1.68	23.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE

```
                                        Pre Development
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   1.7670      0.2467
                          0.0160     0.1530   |   2.5170      0.2702
                          0.2020     0.1763   |   2.9010      0.2820
                          0.5480     0.1997   |   3.3030      0.2937
                          1.0770     0.2232   |   0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)      7.060      0.697      1.68      23.84
   OUTFLOW: ID= 1 (  0902)      7.060      0.025      4.25      16.52

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.56
                  TIME SHIFT OF PEAK FLOW         (min)=154.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1541

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-------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\23fa3682
| Ptotal= 25.02 mm |    Comments: 4hr25mmPickering
-------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    0.00 |  1.33    6.20 |  2.50    4.80 |  3.67    2.62
                0.33    2.17 |  1.50   12.18 |  2.67    4.21 |  3.83    2.47
                0.50    2.38 |  1.67   41.67 |  2.83    3.78 |  4.00    2.35
                0.67    2.66 |  1.83   15.28 |  3.00    3.45 |  4.17    2.23
                0.83    3.03 |  2.00    9.22 |  3.17    3.18 |
                1.00    3.58 |  2.17    6.88 |  3.33    2.95 |
                1.17    4.47 |  2.33    5.62 |  3.50    2.76 |

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| CALIB            |
| STANDHYD (  0301)|   Area    (ha)=   6.15
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
-------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       6.09         0.06
     Dep. Storage     (mm)=       1.00         6.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     202.48        40.00
     Mannings n           =      0.013        0.250

          NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    0.00 | 1.167    4.47 | 2.250    5.62 |  3.33    2.95
               0.167    0.00 | 1.250    6.20 | 2.333    5.62 |  3.42    2.76
               0.250    2.17 | 1.333    6.20 | 2.417    4.80 |  3.50    2.76
               0.333    2.17 | 1.417   12.18 | 2.500    4.80 |  3.58    2.62
               0.417    2.38 | 1.500   12.18 | 2.583    4.21 |  3.67    2.62
               0.500    2.38 | 1.583   41.67 | 2.667    4.21 |  3.75    2.47
               0.583    2.66 | 1.667   41.67 | 2.750    3.78 |  3.83    2.47
               0.667    2.66 | 1.750   15.28 | 2.833    3.78 |  3.92    2.35
               0.750    3.03 | 1.833   15.28 | 2.917    3.45 |  4.00    2.35
               0.833    3.03 | 1.917    9.22 | 3.000    3.45 |  4.08    2.23
               0.917    3.58 | 2.000    9.22 | 3.083    3.18 |  4.17    2.23
               1.000    3.58 | 2.083    6.88 | 3.167    3.18 |
               1.083    4.47 | 2.167    6.88 | 3.250    2.95 |
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                                        Pre Development
     Max.Eff.Inten.(mm/hr)=      41.67         6.24
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       5.54 (ii)    7.13 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.20         0.14
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.62         0.00          0.620 (iii)
     TIME TO PEAK    (hrs)=       1.67         1.75          1.67
     RUNOFF VOLUME    (mm)=      24.02         5.67         23.84
     TOTAL RAINFALL   (mm)=      25.02        25.02         25.02
     RUNOFF COEFFICIENT   =       0.96         0.23          0.95


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  85.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| RESERVOIR(  0903)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.6480      0.2350

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0301)     6.150     0.620      1.67      23.84
   OUTFLOW: ID= 1 (  0903)     6.150     0.173      2.00      23.83

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 27.86
                TIME SHIFT OF PEAK FLOW         (min)= 20.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0628

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================================================================================================================

      V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
      V    V   I    SS     U   U   A A   L
       V  V    I     SS    U   U  AAAAA  L
       V  V    I      SS   U   U  A   A  L
        VV     I    SSSSS  UUUUU  A   A  LLLLL

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

  Output  filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\ff222f77-ae91-4b46-b52c-3108610
b063f\scena
  Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\ff222f77-ae91-4b46-b52c-3108610
b063f\scena


DATE: 02-03-2020                          TIME: 04:44:14
```

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 002-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB STANDHYD (0401)	Area (ha)= 9.90
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42
0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42

0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42
0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42
0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42
0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42
0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42
0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42
1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42
1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42

1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42
1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42
1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42
2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42
2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42
2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42
2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42
2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42

Pre Development

2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42
2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42
2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.68	
over (min)	9.00	15.00	
Storage Coeff. (min)=	8.69 (ii)	14.34 (ii)	
Unit Hyd. Tpeak (min)=	9.00	15.00	
Unit Hyd. peak (cms)=	0.13	0.08	
			TOTALS
PEAK FLOW (cms)=	0.48	0.02	0.502 (iii)
TIME TO PEAK (hrs)=	5.25	5.32	5.25
RUNOFF VOLUME (mm)=	41.00	16.03	38.50
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.38	0.92

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	0.502	5.25	38.50
OUTFLOW: ID= 1 (0904)	9.900	0.480	5.30	38.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 95.66
TIME SHIFT OF PEAK FLOW (min)= 3.00
MAXIMUM STORAGE USED (ha.m.)= 0.0456

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB NASHYD (0104) ID= 1 DT= 5.0 min	Area (ha)= 43.69 Curve Number (CN)= 80.0 Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.61

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42

2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.253 (i)
TIME TO PEAK (hrs)= 8.333
RUNOFF VOLUME (mm)= 13.025
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.310

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB NASHYD (0102) ID= 1 DT= 5.0 min	Area (ha)= 7.18 Curve Number (CN)= 73.0 Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.40

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42

0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.094 (i)
TIME TO PEAK (hrs)= 5.417
RUNOFF VOLUME (mm)= 9.972
TOTAL RAINFALL (mm)= 42.000
RUNOFF COEFFICIENT = 0.237

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB	
STANDHYD (0101)	Area (ha)= 1.60
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=		19.32	17.22	
over (min)		5.00	10.00	
Storage Coeff. (min)=		5.03 (ii)	7.20 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.21	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.09	0.00	0.086 (iii)
TIME TO PEAK	(hrs)=	5.25	5.25	5.25
RUNOFF VOLUME	(mm)=	41.00	30.92	40.90
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.74	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)| 1 + 2 = 3		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):		1.60	0.086	5.25	40.90
+ ID2= 2 (0102):		7.18	0.094	5.42	9.97
ID = 3 (0601):		8.78	0.172	5.25	15.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)| IN= 2---> OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0601)	8.780	0.172	5.25	15.61
OUTFLOW: ID= 1 (0702)	8.780	0.000	14.25	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=540.00
MAXIMUM STORAGE USED (ha.m.)= 0.1370

| ROUTE CHN(0703)| IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67

0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)	8.78	0.00	14.25	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	8.78	0.00	14.17	0.00	0.00	0.17

| ROUTE CHN(0704)| IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.00	14.17	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.00	14.17	0.00	0.00	0.10

| READ STORM | Ptotal= 42.00 mm | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB	
STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42

Pre Development

2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

				TOTALS
Max.Eff.Inten.(mm/hr)=		19.32	10.68	
over (min)		5.00	10.00	
Storage Coeff. (min)=		6.15 (ii)	8.32 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.19	0.13	
PEAK FLOW	(cms)=	0.17	0.00	0.167 (iii)
TIME TO PEAK	(hrs)=	5.25	5.25	5.25
RUNOFF VOLUME	(mm)=	41.00	16.03	40.75
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.38	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB	
STANDHYD (0103)	Area (ha)= 1.83
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

			TOTALS
Max.Eff.Inten.(mm/hr)=	19.32	10.23	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.23 (ii)	22.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.21	0.05	
PEAK FLOW (cms)=	0.09	0.00	0.092 (iii)
TIME TO PEAK (hrs)=	5.25	5.42	5.25
RUNOFF VOLUME (mm)=	41.00	16.03	38.50
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.38	0.92

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0103):	1.83	0.092	5.25	38.50
	+ ID2= 2 (0105):	3.13	0.167	5.25	40.75
	ID = 3 (0602):	4.96	0.259	5.25	39.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1				
DT= 5.0 min	0.0000	0.0000	0.4450	0.1950
	0.0120	0.1170	0.6080	0.2145
	0.0650	0.1365	0.7950	0.2340
	0.1670	0.1560	0.9980	0.2535
	0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	0.259	5.25	39.92
OUTFLOW: ID= 1 (0705)	4.960	0.067	6.25	39.42

PEAK FLOW REDUCTION [Qout/Qin](%)= 25.87
TIME SHIFT OF PEAK FLOW (min)= 60.00
MAXIMUM STORAGE USED (ha.m.)= 0.1370

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	43.69	0.253	8.33	13.02
	+ ID2= 2 (0704):	8.78	0.000	14.17	0.00
	ID = 3 (0901):	52.47	0.253	8.33	10.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0901):	52.47	0.253	8.33	10.85
	+ ID2= 2 (0705):	4.96	0.067	6.25	39.42
	ID = 1 (0901):	57.43	0.288	8.08	13.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42

2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

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| CALIB            |
| STANDHYD (  2011)|   Area    (ha)=   4.69
|ID= 1 DT= 1.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       4.64         0.05
     Dep. Storage     (mm)=       1.00         6.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     176.82        40.00
     Mannings n             =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42
0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42
0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42
0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42

Pre Development

0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42
0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42
0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42
0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42
1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42
1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42
1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42
1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42

1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42
2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42
2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42
2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42
2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42
2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42
2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42
2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42

2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Max.Eff.Inten.(mm/hr)=		19.32	10.68	
over (min)		7.00	10.00	
Storage Coeff. (min)=		6.94 (ii)	9.11 (ii)	
Unit Hyd. Tpeak (min)=		7.00	10.00	
Unit Hyd. peak (cms)=		0.16	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.25	0.00	0.250 (iii)
TIME TO PEAK	(hrs)=	5.25	5.27	5.25
RUNOFF VOLUME	(mm)=	40.99	16.03	40.75
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.38	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm | Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB | STANDHYD (2012) | ID= 1 DT= 1.0 min | Area (ha)= 2.37 | Total Imp(%)= 99.00 | Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

Pre Development

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	2.52	6.150	5.46	9.22	0.84
0.033	0.00	3.100	2.52	6.167	5.46	9.23	0.84
0.050	0.00	3.117	2.52	6.183	5.46	9.25	0.84
0.067	0.00	3.133	2.52	6.200	5.46	9.27	0.42
0.083	0.00	3.150	2.52	6.217	5.46	9.28	0.42
0.100	0.00	3.167	2.52	6.233	5.46	9.30	0.42
0.117	0.00	3.183	2.52	6.250	5.46	9.32	0.42
0.133	0.00	3.200	2.52	6.267	2.94	9.33	0.42
0.150	0.00	3.217	2.52	6.283	2.94	9.35	0.42
0.167	0.00	3.233	2.52	6.300	2.94	9.37	0.42
0.183	0.00	3.250	2.52	6.317	2.94	9.38	0.42
0.200	0.00	3.267	7.14	6.333	2.94	9.40	0.42
0.217	0.00	3.283	7.14	6.350	2.94	9.42	0.42
0.233	0.00	3.300	7.14	6.367	2.94	9.43	0.42
0.250	0.00	3.317	7.14	6.383	2.94	9.45	0.42
0.267	0.42	3.333	7.14	6.400	2.94	9.47	0.42
0.283	0.42	3.350	7.14	6.417	2.94	9.48	0.42
0.300	0.42	3.367	7.14	6.433	2.94	9.50	0.42
0.317	0.42	3.383	7.14	6.450	2.94	9.52	0.42
0.333	0.42	3.400	7.14	6.467	2.94	9.53	0.42
0.350	0.42	3.417	7.14	6.483	2.94	9.55	0.42
0.367	0.42	3.433	7.14	6.500	2.94	9.57	0.42
0.383	0.42	3.450	7.14	6.517	2.94	9.58	0.42
0.400	0.42	3.467	7.14	6.533	2.94	9.60	0.42
0.417	0.42	3.483	7.14	6.550	2.94	9.62	0.42
0.433	0.42	3.500	7.14	6.567	2.94	9.63	0.42
0.450	0.42	3.517	7.14	6.583	2.94	9.65	0.42
0.467	0.42	3.533	7.14	6.600	2.94	9.67	0.42
0.483	0.42	3.550	7.14	6.617	2.94	9.68	0.42
0.500	0.42	3.567	7.14	6.633	2.94	9.70	0.42
0.517	0.42	3.583	7.14	6.650	2.94	9.72	0.42
0.533	0.42	3.600	7.14	6.667	2.94	9.73	0.42
0.550	0.42	3.617	7.14	6.683	2.94	9.75	0.42
0.567	0.42	3.633	7.14	6.700	2.94	9.77	0.42
0.583	0.42	3.650	7.14	6.717	2.94	9.78	0.42
0.600	0.42	3.667	7.14	6.733	2.94	9.80	0.42
0.617	0.42	3.683	7.14	6.750	2.94	9.82	0.42
0.633	0.42	3.700	7.14	6.767	2.94	9.83	0.42
0.650	0.42	3.717	7.14	6.783	2.94	9.85	0.42
0.667	0.42	3.733	7.14	6.800	2.94	9.87	0.42
0.683	0.42	3.750	7.14	6.817	2.94	9.88	0.42
0.700	0.42	3.767	7.14	6.833	2.94	9.90	0.42
0.717	0.42	3.783	7.14	6.850	2.94	9.92	0.42
0.733	0.42	3.800	7.14	6.867	2.94	9.93	0.42
0.750	0.42	3.817	7.14	6.883	2.94	9.95	0.42
0.767	0.42	3.833	7.14	6.900	2.94	9.97	0.42
0.783	0.42	3.850	7.14	6.917	2.94	9.98	0.42
0.800	0.42	3.867	7.14	6.933	2.94	10.00	0.42
0.817	0.42	3.883	7.14	6.950	2.94	10.02	0.42
0.833	0.42	3.900	7.14	6.967	2.94	10.03	0.42
0.850	0.42	3.917	7.14	6.983	2.94	10.05	0.42
0.867	0.42	3.933	7.14	7.000	2.94	10.07	0.42
0.883	0.42	3.950	7.14	7.017	2.94	10.08	0.42
0.900	0.42	3.967	7.14	7.033	2.94	10.10	0.42
0.917	0.42	3.983	7.14	7.050	2.94	10.12	0.42
0.933	0.42	4.000	7.14	7.067	2.94	10.13	0.42
0.950	0.42	4.017	7.14	7.083	2.94	10.15	0.42
0.967	0.42	4.033	7.14	7.100	2.94	10.17	0.42
0.983	0.42	4.050	7.14	7.117	2.94	10.18	0.42
1.000	0.42	4.067	7.14	7.133	2.94	10.20	0.42
1.017	0.42	4.083	7.14	7.150	2.94	10.22	0.42
1.033	0.42	4.100	7.14	7.167	2.94	10.23	0.42
1.050	0.42	4.117	7.14	7.183	2.94	10.25	0.42
1.067	0.42	4.133	7.14	7.200	2.94	10.27	0.42
1.083	0.42	4.150	7.14	7.217	2.94	10.28	0.42

1.100	0.42	4.167	7.14	7.233	2.94	10.30	0.42
1.117	0.42	4.183	7.14	7.250	2.94	10.32	0.42
1.133	0.42	4.200	7.14	7.267	1.68	10.33	0.42
1.150	0.42	4.217	7.14	7.283	1.68	10.35	0.42
1.167	0.42	4.233	7.14	7.300	1.68	10.37	0.42
1.183	0.42	4.250	7.14	7.317	1.68	10.38	0.42
1.200	0.42	4.267	19.32	7.333	1.68	10.40	0.42
1.217	0.42	4.283	19.32	7.350	1.68	10.42	0.42
1.233	0.42	4.300	19.32	7.367	1.68	10.43	0.42
1.250	0.42	4.317	19.32	7.383	1.68	10.45	0.42
1.267	0.42	4.333	19.32	7.400	1.68	10.47	0.42
1.283	0.42	4.350	19.32	7.417	1.68	10.48	0.42
1.300	0.42	4.367	19.32	7.433	1.68	10.50	0.42
1.317	0.42	4.383	19.32	7.450	1.68	10.52	0.42
1.333	0.42	4.400	19.32	7.467	1.68	10.53	0.42
1.350	0.42	4.417	19.32	7.483	1.68	10.55	0.42
1.367	0.42	4.433	19.32	7.500	1.68	10.57	0.42
1.383	0.42	4.450	19.32	7.517	1.68	10.58	0.42
1.400	0.42	4.467	19.32	7.533	1.68	10.60	0.42
1.417	0.42	4.483	19.32	7.550	1.68	10.62	0.42
1.433	0.42	4.500	19.32	7.567	1.68	10.63	0.42
1.450	0.42	4.517	19.32	7.583	1.68	10.65	0.42
1.467	0.42	4.533	19.32	7.600	1.68	10.67	0.42
1.483	0.42	4.550	19.32	7.617	1.68	10.68	0.42
1.500	0.42	4.567	19.32	7.633	1.68	10.70	0.42
1.517	0.42	4.583	19.32	7.650	1.68	10.72	0.42
1.533	0.42	4.600	19.32	7.667	1.68	10.73	0.42
1.550	0.42	4.617	19.32	7.683	1.68	10.75	0.42
1.567	0.42	4.633	19.32	7.700	1.68	10.77	0.42
1.583	0.42	4.650	19.32	7.717	1.68	10.78	0.42
1.600	0.42	4.667	19.32	7.733	1.68	10.80	0.42
1.617	0.42	4.683	19.32	7.750	1.68	10.82	0.42
1.633	0.42	4.700	19.32	7.767	1.68	10.83	0.42
1.650	0.42	4.717	19.32	7.783	1.68	10.85	0.42
1.667	0.42	4.733	19.32	7.800	1.68	10.87	0.42
1.683	0.42	4.750	19.32	7.817	1.68	10.88	0.42
1.700	0.42	4.767	19.32	7.833	1.68	10.90	0.42
1.717	0.42	4.783	19.32	7.850	1.68	10.92	0.42
1.733	0.42	4.800	19.32	7.867	1.68	10.93	0.42
1.750	0.42	4.817	19.32	7.883	1.68	10.95	0.42
1.767	0.42	4.833	19.32	7.900	1.68	10.97	0.42
1.783	0.42	4.850	19.32	7.917	1.68	10.98	0.42
1.800	0.42	4.867	19.32	7.933	1.68	11.00	0.42
1.817	0.42	4.883	19.32	7.950	1.68	11.02	0.42
1.833	0.42	4.900	19.32	7.967	1.68	11.03	0.42
1.850	0.42	4.917	19.32	7.983	1.68	11.05	0.42
1.867	0.42	4.933	19.32	8.000	1.68	11.07	0.42
1.883	0.42	4.950	19.32	8.017	1.68	11.08	0.42
1.900	0.42	4.967	19.32	8.033	1.68	11.10	0.42
1.917	0.42	4.983	19.32	8.050	1.68	11.12	0.42
1.933	0.42	5.000	19.32	8.067	1.68	11.13	0.42
1.950	0.42	5.017	19.32	8.083	1.68	11.15	0.42
1.967	0.42	5.033	19.32	8.100	1.68	11.17	0.42
1.983	0.42	5.050	19.32	8.117	1.68	11.18	0.42
2.000	0.42	5.067	19.32	8.133	1.68	11.20	0.42
2.017	0.42	5.083	19.32	8.150	1.68	11.22	0.42
2.033	0.42	5.100	19.32	8.167	1.68	11.23	0.42
2.050	0.42	5.117	19.32	8.183	1.68	11.25	0.42
2.067	0.42	5.133	19.32	8.200	1.68	11.27	0.42
2.083	0.42	5.150	19.32	8.217	1.68	11.28	0.42
2.100	0.42	5.167	19.32	8.233	1.68	11.30	0.42
2.117	0.42	5.183	19.32	8.250	1.68	11.32	0.42
2.133	0.42	5.200	19.32	8.267	0.84	11.33	0.42
2.150	0.42	5.217	19.32	8.283	0.84	11.35	0.42
2.167	0.42	5.233	19.32	8.300	0.84	11.37	0.42
2.183	0.42	5.250	19.31	8.317	0.84	11.38	0.42
2.200	0.42	5.267	5.46	8.333	0.84	11.40	0.42
2.217	0.42	5.283	5.46	8.350	0.84	11.42	0.42

2.233	0.42	5.300	5.46	8.367	0.84	11.43	0.42
2.250	0.42	5.317	5.46	8.383	0.84	11.45	0.42
2.267	2.52	5.333	5.46	8.400	0.84	11.47	0.42
2.283	2.52	5.350	5.46	8.417	0.84	11.48	0.42
2.300	2.52	5.367	5.46	8.433	0.84	11.50	0.42
2.317	2.52	5.383	5.46	8.450	0.84	11.52	0.42
2.333	2.52	5.400	5.46	8.467	0.84	11.53	0.42
2.350	2.52	5.417	5.46	8.483	0.84	11.55	0.42
2.367	2.52	5.433	5.46	8.500	0.84	11.57	0.42
2.383	2.52	5.450	5.46	8.517	0.84	11.58	0.42
2.400	2.52	5.467	5.46	8.533	0.84	11.60	0.42
2.417	2.52	5.483	5.46	8.550	0.84	11.62	0.42
2.433	2.52	5.500	5.46	8.567	0.84	11.63	0.42
2.450	2.52	5.517	5.46	8.583	0.84	11.65	0.42
2.467	2.52	5.533	5.46	8.600	0.84	11.67	0.42
2.483	2.52	5.550	5.46	8.617	0.84	11.68	0.42
2.500	2.52	5.567	5.46	8.633	0.84	11.70	0.42
2.517	2.52	5.583	5.46	8.650	0.84	11.72	0.42
2.533	2.52	5.600	5.46	8.667	0.84	11.73	0.42
2.550	2.52	5.617	5.46	8.683	0.84	11.75	0.42
2.567	2.52	5.633	5.46	8.700	0.84	11.77	0.42
2.583	2.52	5.650	5.46	8.717	0.84	11.78	0.42
2.600	2.52	5.667	5.46	8.733	0.84	11.80	0.42
2.617	2.52	5.683	5.46	8.750	0.84	11.82	0.42
2.633	2.52	5.700	5.46	8.767	0.84	11.83	0.42
2.650	2.52	5.717	5.46	8.783	0.84	11.85	0.42
2.667	2.52	5.733	5.46	8.800	0.84	11.87	0.42
2.683	2.52	5.750	5.46	8.817	0.84	11.88	0.42
2.700	2.52	5.767	5.46	8.833	0.84	11.90	0.42
2.717	2.52	5.783	5.46	8.850	0.84	11.92	0.42
2.733	2.52	5.800	5.46	8.867	0.84	11.93	0.42
2.750	2.52	5.817	5.46	8.883	0.84	11.95	0.42
2.767	2.52	5.833	5.46	8.900	0.84	11.97	0.42
2.783	2.52	5.850	5.46	8.917	0.84	11.98	0.42
2.800	2.52	5.867	5.46	8.933	0.84	12.00	0.42
2.817	2.52	5.883	5.46	8.950	0.84	12.02	0.42
2.833	2.52	5.900	5.46	8.967	0.84	12.03	0.42
2.850	2.52	5.917	5.46	8.983	0.84	12.05	0.42
2.867	2.52	5.933	5.46	9.000	0.84	12.07	0.42
2.883	2.52	5.950	5.46	9.017	0.84	12.08	0.42
2.900	2.52	5.967	5.46	9.033	0.84	12.10	0.42
2.917	2.52	5.983	5.46	9.050	0.84	12.12	0.42
2.933	2.52	6.000	5.46	9.067	0.84	12.13	0.42
2.950	2.52	6.017	5.46	9.083	0.84	12.15	0.42
2.967	2.52	6.033	5.46	9.100	0.84	12.17	0.42
2.983	2.52	6.050	5.46	9.117	0.84	12.18	0.42
3.000	2.52	6.067	5.46	9.133	0.84	12.20	0.42
3.017	2.52	6.083	5.46	9.150	0.84	12.22	0.42
3.033	2.52	6.100	5.46	9.167	0.84	12.23	0.42
3.050	2.52	6.117	5.46	9.183	0.84	12.25	0.42
3.067	2.52	6.133	5.46	9.200	0.84		

Max.Eff.Inten.(mm/hr)=	19.32	10.68	
over (min)	6.00	8.00	
Storage Coeff. (min)=	5.66 (ii)	7.82 (ii)	
Unit Hyd. Tpeak (min)=	6.00	8.00	
Unit Hyd. peak (cms)=	0.20	0.14	
			TOTALS
PEAK FLOW (cms)=	0.13	0.00	0.127 (iii)
TIME TO PEAK (hrs)=	5.23	5.27	5.25
RUNOFF VOLUME (mm)=	40.99	16.04	40.75
TOTAL RAINFALL (mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT =	0.98	0.38	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (2011):	4.69	0.250	5.25	40.75
	+ ID2= 2 (2012):	2.37	0.127	5.25	40.75
	ID = 3 (0201):	7.06	0.377	5.25	40.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.7670	0.2467
	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937
	1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	0.377	5.25	40.75
OUTFLOW: ID= 1 (0902)	7.060	0.211	5.42	31.39

PEAK FLOW REDUCTION [Qout/Qin](%)= 55.95
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1769

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\cebf2730
Ptotal= 42.00 mm	Comments: 2 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	7.14	6.75	2.94	10.00	0.42
0.50	0.42	3.75	7.14	7.00	2.94	10.25	0.42
0.75	0.42	4.00	7.14	7.25	2.94	10.50	0.42
1.00	0.42	4.25	7.14	7.50	1.68	10.75	0.42
1.25	0.42	4.50	19.32	7.75	1.68	11.00	0.42
1.50	0.42	4.75	19.32	8.00	1.68	11.25	0.42
1.75	0.42	5.00	19.32	8.25	1.68	11.50	0.42
2.00	0.42	5.25	19.32	8.50	0.84	11.75	0.42
2.25	0.42	5.50	5.46	8.75	0.84	12.00	0.42
2.50	2.52	5.75	5.46	9.00	0.84	12.25	0.42
2.75	2.52	6.00	5.46	9.25	0.84		
3.00	2.52	6.25	5.46	9.50	0.42		
3.25	2.52	6.50	2.94	9.75	0.42		

CALIB		
STANDHYD (0301)	Area (ha)=	6.15
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.52	6.250	5.46	9.33	0.42
0.167	0.00	3.250	2.52	6.333	2.94	9.42	0.42
0.250	0.00	3.333	7.14	6.417	2.94	9.50	0.42
0.333	0.42	3.417	7.14	6.500	2.94	9.58	0.42
0.417	0.42	3.500	7.14	6.583	2.94	9.67	0.42
0.500	0.42	3.583	7.14	6.667	2.94	9.75	0.42
0.583	0.42	3.667	7.14	6.750	2.94	9.83	0.42
0.667	0.42	3.750	7.14	6.833	2.94	9.92	0.42
0.750	0.42	3.833	7.14	6.917	2.94	10.00	0.42
0.833	0.42	3.917	7.14	7.000	2.94	10.08	0.42
0.917	0.42	4.000	7.14	7.083	2.94	10.17	0.42
1.000	0.42	4.083	7.14	7.167	2.94	10.25	0.42
1.083	0.42	4.167	7.14	7.250	2.94	10.33	0.42
1.167	0.42	4.250	7.14	7.333	1.68	10.42	0.42
1.250	0.42	4.333	19.32	7.417	1.68	10.50	0.42
1.333	0.42	4.417	19.32	7.500	1.68	10.58	0.42
1.417	0.42	4.500	19.32	7.583	1.68	10.67	0.42
1.500	0.42	4.583	19.32	7.667	1.68	10.75	0.42
1.583	0.42	4.667	19.32	7.750	1.68	10.83	0.42
1.667	0.42	4.750	19.32	7.833	1.68	10.92	0.42
1.750	0.42	4.833	19.32	7.917	1.68	11.00	0.42
1.833	0.42	4.917	19.32	8.000	1.68	11.08	0.42
1.917	0.42	5.000	19.32	8.083	1.68	11.17	0.42
2.000	0.42	5.083	19.32	8.167	1.68	11.25	0.42
2.083	0.42	5.167	19.32	8.250	1.68	11.33	0.42
2.167	0.42	5.250	19.32	8.333	0.84	11.42	0.42
2.250	0.42	5.333	5.46	8.417	0.84	11.50	0.42
2.333	2.52	5.417	5.46	8.500	0.84	11.58	0.42
2.417	2.52	5.500	5.46	8.583	0.84	11.67	0.42
2.500	2.52	5.583	5.46	8.667	0.84	11.75	0.42
2.583	2.52	5.667	5.46	8.750	0.84	11.83	0.42
2.667	2.52	5.750	5.46	8.833	0.84	11.92	0.42
2.750	2.52	5.833	5.46	8.917	0.84	12.00	0.42
2.833	2.52	5.917	5.46	9.000	0.84	12.08	0.42
2.917	2.52	6.000	5.46	9.083	0.84	12.17	0.42
3.000	2.52	6.083	5.46	9.167	0.84	12.25	0.42
3.083	2.52	6.167	5.46	9.250	0.84		

Max.Eff.Inten.(mm/hr)=		19.32	10.68	
over (min)		10.00	10.00	
Storage Coeff. (min)=		7.53 (ii)	9.70 (ii)	
Unit Hyd. Tpeak (min)=		10.00	10.00	
Unit Hyd. peak (cms)=		0.13	0.11	
				TOTALS
PEAK FLOW	(cms)=	0.33	0.00	0.328 (iii)
TIME TO PEAK	(hrs)=	5.25	5.25	5.25
RUNOFF VOLUME	(mm)=	41.00	16.03	40.75
TOTAL RAINFALL	(mm)=	42.00	42.00	42.00
RUNOFF COEFFICIENT	=	0.98	0.38	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	0.328	5.25	40.75
OUTFLOW: ID= 1 (0903)	6.150	0.227	5.42	40.74

PEAK FLOW REDUCTION [Qout/Qin](%)= 69.21
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.0830

FINISH

V V I SSSSS U U A L (v 5.1.2002)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\355969ab-6b4a-4c00-b04b-0a75e2b9f0e0\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\355969ab-6b4a-4c00-b04b-0a75e2b9f0e0\scena

DATE: 02-03-2020 TIME: 04:44:13

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 005-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB	
STANDHYD (0401)	Area (ha)= 9.90
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.26	6.150	7.07	9.22	1.09
0.033	0.00	3.100	3.26	6.167	7.07	9.23	1.09
0.050	0.00	3.117	3.26	6.183	7.07	9.25	1.09
0.067	0.00	3.133	3.26	6.200	7.07	9.27	0.54
0.083	0.00	3.150	3.26	6.217	7.07	9.28	0.54
0.100	0.00	3.167	3.26	6.233	7.07	9.30	0.54
0.117	0.00	3.183	3.26	6.250	7.06	9.32	0.54
0.133	0.00	3.200	3.26	6.267	3.81	9.33	0.54
0.150	0.00	3.217	3.26	6.283	3.81	9.35	0.54
0.167	0.00	3.233	3.26	6.300	3.81	9.37	0.54
0.183	0.00	3.250	3.26	6.317	3.81	9.38	0.54
0.200	0.00	3.267	9.25	6.333	3.81	9.40	0.54
0.217	0.00	3.283	9.25	6.350	3.81	9.42	0.54
0.233	0.00	3.300	9.25	6.367	3.81	9.43	0.54
0.250	0.00	3.317	9.25	6.383	3.81	9.45	0.54
0.267	0.54	3.333	9.25	6.400	3.81	9.47	0.54
0.283	0.54	3.350	9.25	6.417	3.81	9.48	0.54
0.300	0.54	3.367	9.25	6.433	3.81	9.50	0.54
0.317	0.54	3.383	9.25	6.450	3.81	9.52	0.54
0.333	0.54	3.400	9.25	6.467	3.81	9.53	0.54
0.350	0.54	3.417	9.25	6.483	3.81	9.55	0.54
0.367	0.54	3.433	9.25	6.500	3.81	9.57	0.54
0.383	0.54	3.450	9.25	6.517	3.81	9.58	0.54
0.400	0.54	3.467	9.25	6.533	3.81	9.60	0.54
0.417	0.54	3.483	9.25	6.550	3.81	9.62	0.54

0.433	0.54	3.500	9.25	6.567	3.81	9.63	0.54
0.450	0.54	3.517	9.25	6.583	3.81	9.65	0.54
0.467	0.54	3.533	9.25	6.600	3.81	9.67	0.54
0.483	0.54	3.550	9.25	6.617	3.81	9.68	0.54
0.500	0.54	3.567	9.25	6.633	3.81	9.70	0.54
0.517	0.54	3.583	9.25	6.650	3.81	9.72	0.54
0.533	0.54	3.600	9.25	6.667	3.81	9.73	0.54
0.550	0.54	3.617	9.25	6.683	3.81	9.75	0.54
0.567	0.54	3.633	9.25	6.700	3.81	9.77	0.54
0.583	0.54	3.650	9.25	6.717	3.81	9.78	0.54
0.600	0.54	3.667	9.25	6.733	3.81	9.80	0.54
0.617	0.54	3.683	9.25	6.750	3.81	9.82	0.54
0.633	0.54	3.700	9.25	6.767	3.81	9.83	0.54
0.650	0.54	3.717	9.25	6.783	3.81	9.85	0.54
0.667	0.54	3.733	9.25	6.800	3.81	9.87	0.54
0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54
0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54
0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54
1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54
1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54
1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54

1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54
1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54
1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54
1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54
2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54
2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54
2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54
2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54

Pre Development

2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54
2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54
2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54
3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.16	
over (min)	8.00	13.00	
Storage Coeff. (min)=	7.83 (ii)	12.93 (ii)	
Unit Hyd. Tpeak (min)=	8.00	13.00	
Unit Hyd. peak (cms)=	0.14	0.09	
			TOTALS
PEAK FLOW (cms)=	0.62	0.04	0.658 (iii)
TIME TO PEAK (hrs)=	5.25	5.28	5.25
RUNOFF VOLUME (mm)=	53.37	25.11	50.55
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.46	0.93

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	0.658	5.25	50.55
OUTFLOW: ID= 1 (0904)	9.900	0.632	5.30	50.55

PEAK FLOW REDUCTION [Qout/Qin](%)= 95.97
TIME SHIFT OF PEAK FLOW (min)= 3.00
MAXIMUM STORAGE USED (ha.m.)= 0.0600

READ STORM Ptotal= 54.38 mm	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB / NASHYD (0104) / ID= 1 DT= 5.0 min			
	Area (ha)=	43.69	Curve Number (CN)= 80.0
	Ia (mm)=	6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	2.61	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.409 (i)
TIME TO PEAK (hrs)= 8.250
RUNOFF VOLUME (mm)= 20.921
TOTAL RAINFALL (mm)= 54.380
RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM / Ptotal= 54.38 mm	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB / NASHYD (0102) / ID= 1 DT= 5.0 min			
	Area (ha)=	7.18	Curve Number (CN)= 73.0
	Ia (mm)=	6.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.40	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54

1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.156 (i)
TIME TO PEAK (hrs)= 5.417
RUNOFF VOLUME (mm)= 16.443
TOTAL RAINFALL (mm)= 54.380
RUNOFF COEFFICIENT = 0.302

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB	
STANDHYD (0101)	Area (ha)= 1.60
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.58	0.02
Dep. Storage (mm)=	1.00	1.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

			TOTALS
Max.Eff.Inten.(mm/hr)=	25.02	23.15	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.53 (ii)	6.49 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.23	0.14	
PEAK FLOW (cms)=	0.11	0.00	0.111 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	42.69	53.27
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.79	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)

ID1= 1 (0101):	1.60	0.111	5.25	53.27
+ ID2= 2 (0102):	7.18	0.156	5.42	16.44
ID = 3 (0601):	8.78	0.257	5.25	23.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0601)	8.780	0.257	5.25	23.15
OUTFLOW: ID= 1 (0702)	8.780	0.005	12.50	1.91

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.98
TIME SHIFT OF PEAK FLOW (min)=435.00
MAXIMUM STORAGE USED (ha.m.)= 0.1975

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)	8.78	0.01	12.50	1.91	0.08	0.28
OUTFLOW: ID= 1 (0703)	8.78	0.01	12.67	1.90	0.08	0.28

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.01	12.67	1.90	0.02	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.00	14.75	1.85	0.01	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54

2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB	
STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=		25.02	16.16
	over (min)	5.00	10.00
Storage Coeff. (min)=		5.54 (ii)	7.50 (ii)
Unit Hyd. Tpeak (min)=		5.00	10.00
Unit Hyd. peak (cms)=		0.20	0.13

			TOTALS
PEAK FLOW	(cms)=	0.22	0.00 0.217 (iii)
TIME TO PEAK	(hrs)=	5.25	5.25 5.25
RUNOFF VOLUME	(mm)=	53.38	25.11 53.10
TOTAL RAINFALL	(mm)=	54.38	54.38 54.38
RUNOFF COEFFICIENT	=	0.98	0.46 0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB	
STANDHYD (0103)	Area (ha)= 1.83
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54

0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	15.90	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.72 (ii)	19.45 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			TOTALS
PEAK FLOW (cms)=	0.11	0.01	0.121 (iii)
TIME TO PEAK (hrs)=	5.25	5.33	5.25
RUNOFF VOLUME (mm)=	53.38	25.11	50.55
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.46	0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0103):	1.83	0.121	5.25	50.55
+ ID2= 2 (0105):	3.13	0.217	5.25	53.10
ID = 3 (0602):	4.96	0.338	5.25	52.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4450	0.1950
	0.0120	0.1170	0.6080	0.2145
	0.0650	0.1365	0.7950	0.2340
	0.1670	0.1560	0.9980	0.2535
	0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	0.338	5.25	52.16
OUTFLOW: ID= 1 (0705)	4.960	0.174	5.33	51.66

PEAK FLOW REDUCTION [Qout/Qin](%)= 51.44
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1573

ADD HYD (0901)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	43.69	0.409	8.25	20.92
+ ID2= 2 (0704):	8.78	0.004	14.75	1.85
ID = 3 (0901):	52.47	0.409	8.25	17.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0901):	52.47	0.409	8.25	17.73
+ ID2= 2 (0705):	4.96	0.174	5.33	51.66
ID = 1 (0901):	57.43	0.454	8.00	20.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB

| STANDHYD (2011)| Area (ha)= 4.69
|ID= 1 DT= 1.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.64	0.05
Dep. Storage (mm)=	1.00	6.00
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.26	6.150	7.07	9.22	1.09
0.033	0.00	3.100	3.26	6.167	7.07	9.23	1.09
0.050	0.00	3.117	3.26	6.183	7.07	9.25	1.09
0.067	0.00	3.133	3.26	6.200	7.07	9.27	0.54
0.083	0.00	3.150	3.26	6.217	7.07	9.28	0.54
0.100	0.00	3.167	3.26	6.233	7.07	9.30	0.54
0.117	0.00	3.183	3.26	6.250	7.06	9.32	0.54
0.133	0.00	3.200	3.26	6.267	3.81	9.33	0.54
0.150	0.00	3.217	3.26	6.283	3.81	9.35	0.54
0.167	0.00	3.233	3.26	6.300	3.81	9.37	0.54
0.183	0.00	3.250	3.26	6.317	3.81	9.38	0.54
0.200	0.00	3.267	9.25	6.333	3.81	9.40	0.54
0.217	0.00	3.283	9.25	6.350	3.81	9.42	0.54
0.233	0.00	3.300	9.25	6.367	3.81	9.43	0.54
0.250	0.00	3.317	9.25	6.383	3.81	9.45	0.54
0.267	0.54	3.333	9.25	6.400	3.81	9.47	0.54
0.283	0.54	3.350	9.25	6.417	3.81	9.48	0.54
0.300	0.54	3.367	9.25	6.433	3.81	9.50	0.54
0.317	0.54	3.383	9.25	6.450	3.81	9.52	0.54
0.333	0.54	3.400	9.25	6.467	3.81	9.53	0.54
0.350	0.54	3.417	9.25	6.483	3.81	9.55	0.54
0.367	0.54	3.433	9.25	6.500	3.81	9.57	0.54
0.383	0.54	3.450	9.25	6.517	3.81	9.58	0.54
0.400	0.54	3.467	9.25	6.533	3.81	9.60	0.54
0.417	0.54	3.483	9.25	6.550	3.81	9.62	0.54
0.433	0.54	3.500	9.25	6.567	3.81	9.63	0.54
0.450	0.54	3.517	9.25	6.583	3.81	9.65	0.54
0.467	0.54	3.533	9.25	6.600	3.81	9.67	0.54
0.483	0.54	3.550	9.25	6.617	3.81	9.68	0.54
0.500	0.54	3.567	9.25	6.633	3.81	9.70	0.54
0.517	0.54	3.583	9.25	6.650	3.81	9.72	0.54
0.533	0.54	3.600	9.25	6.667	3.81	9.73	0.54
0.550	0.54	3.617	9.25	6.683	3.81	9.75	0.54
0.567	0.54	3.633	9.25	6.700	3.81	9.77	0.54
0.583	0.54	3.650	9.25	6.717	3.81	9.78	0.54
0.600	0.54	3.667	9.25	6.733	3.81	9.80	0.54
0.617	0.54	3.683	9.25	6.750	3.81	9.82	0.54
0.633	0.54	3.700	9.25	6.767	3.81	9.83	0.54
0.650	0.54	3.717	9.25	6.783	3.81	9.85	0.54
0.667	0.54	3.733	9.25	6.800	3.81	9.87	0.54
0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54
0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54

Pre Development

0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54
1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54
1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54
1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54
1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54
1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54
1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54
1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54

2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54
2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54
2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54
2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54
2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54
2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54
2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54
3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.16	
over (min)	6.00	9.00	
Storage Coeff. (min)=	6.26 (ii)	8.21 (ii)	

Unit Hyd. Tpeak (min)=	6.00	9.00		
Unit Hyd. peak (cms)=	0.18	0.13		
			TOTALS	
PEAK FLOW (cms)=	0.32	0.00	0.325 (iii)	
TIME TO PEAK (hrs)=	5.25	5.27	5.25	
RUNOFF VOLUME (mm)=	53.38	25.11	53.10	
TOTAL RAINFALL (mm)=	54.38	54.38	54.38	
RUNOFF COEFFICIENT =	0.98	0.46	0.98	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
Ptotal= 54.38 mm | Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB
STANDHYD (2012) | Area (ha)= 2.37
ID= 1 DT= 1.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.26	6.150	7.07	9.22	1.09
0.033	0.00	3.100	3.26	6.167	7.07	9.23	1.09
0.050	0.00	3.117	3.26	6.183	7.07	9.25	1.09
0.067	0.00	3.133	3.26	6.200	7.07	9.27	0.54
0.083	0.00	3.150	3.26	6.217	7.07	9.28	0.54
0.100	0.00	3.167	3.26	6.233	7.07	9.30	0.54
0.117	0.00	3.183	3.26	6.250	7.06	9.32	0.54
0.133	0.00	3.200	3.26	6.267	3.81	9.33	0.54

Pre Development

0.150	0.00	3.217	3.26	6.283	3.81	9.35	0.54
0.167	0.00	3.233	3.26	6.300	3.81	9.37	0.54
0.183	0.00	3.250	3.26	6.317	3.81	9.38	0.54
0.200	0.00	3.267	9.25	6.333	3.81	9.40	0.54
0.217	0.00	3.283	9.25	6.350	3.81	9.42	0.54
0.233	0.00	3.300	9.25	6.367	3.81	9.43	0.54
0.250	0.00	3.317	9.25	6.383	3.81	9.45	0.54
0.267	0.54	3.333	9.25	6.400	3.81	9.47	0.54
0.283	0.54	3.350	9.25	6.417	3.81	9.48	0.54
0.300	0.54	3.367	9.25	6.433	3.81	9.50	0.54
0.317	0.54	3.383	9.25	6.450	3.81	9.52	0.54
0.333	0.54	3.400	9.25	6.467	3.81	9.53	0.54
0.350	0.54	3.417	9.25	6.483	3.81	9.55	0.54
0.367	0.54	3.433	9.25	6.500	3.81	9.57	0.54
0.383	0.54	3.450	9.25	6.517	3.81	9.58	0.54
0.400	0.54	3.467	9.25	6.533	3.81	9.60	0.54
0.417	0.54	3.483	9.25	6.550	3.81	9.62	0.54
0.433	0.54	3.500	9.25	6.567	3.81	9.63	0.54
0.450	0.54	3.517	9.25	6.583	3.81	9.65	0.54
0.467	0.54	3.533	9.25	6.600	3.81	9.67	0.54
0.483	0.54	3.550	9.25	6.617	3.81	9.68	0.54
0.500	0.54	3.567	9.25	6.633	3.81	9.70	0.54
0.517	0.54	3.583	9.25	6.650	3.81	9.72	0.54
0.533	0.54	3.600	9.25	6.667	3.81	9.73	0.54
0.550	0.54	3.617	9.25	6.683	3.81	9.75	0.54
0.567	0.54	3.633	9.25	6.700	3.81	9.77	0.54
0.583	0.54	3.650	9.25	6.717	3.81	9.78	0.54
0.600	0.54	3.667	9.25	6.733	3.81	9.80	0.54
0.617	0.54	3.683	9.25	6.750	3.81	9.82	0.54
0.633	0.54	3.700	9.25	6.767	3.81	9.83	0.54
0.650	0.54	3.717	9.25	6.783	3.81	9.85	0.54
0.667	0.54	3.733	9.25	6.800	3.81	9.87	0.54
0.683	0.54	3.750	9.25	6.817	3.81	9.88	0.54
0.700	0.54	3.767	9.25	6.833	3.81	9.90	0.54
0.717	0.54	3.783	9.25	6.850	3.81	9.92	0.54
0.733	0.54	3.800	9.25	6.867	3.81	9.93	0.54
0.750	0.54	3.817	9.25	6.883	3.81	9.95	0.54
0.767	0.54	3.833	9.25	6.900	3.81	9.97	0.54
0.783	0.54	3.850	9.25	6.917	3.81	9.98	0.54
0.800	0.54	3.867	9.25	6.933	3.81	10.00	0.54
0.817	0.54	3.883	9.25	6.950	3.81	10.02	0.54
0.833	0.54	3.900	9.25	6.967	3.81	10.03	0.54
0.850	0.54	3.917	9.25	6.983	3.81	10.05	0.54
0.867	0.54	3.933	9.25	7.000	3.81	10.07	0.54
0.883	0.54	3.950	9.25	7.017	3.81	10.08	0.54
0.900	0.54	3.967	9.25	7.033	3.81	10.10	0.54
0.917	0.54	3.983	9.25	7.050	3.81	10.12	0.54
0.933	0.54	4.000	9.25	7.067	3.81	10.13	0.54
0.950	0.54	4.017	9.25	7.083	3.81	10.15	0.54
0.967	0.54	4.033	9.25	7.100	3.81	10.17	0.54
0.983	0.54	4.050	9.25	7.117	3.81	10.18	0.54
1.000	0.54	4.067	9.25	7.133	3.81	10.20	0.54
1.017	0.54	4.083	9.25	7.150	3.81	10.22	0.54
1.033	0.54	4.100	9.25	7.167	3.81	10.23	0.54
1.050	0.54	4.117	9.25	7.183	3.81	10.25	0.54
1.067	0.54	4.133	9.25	7.200	3.81	10.27	0.54
1.083	0.54	4.150	9.25	7.217	3.81	10.28	0.54
1.100	0.54	4.167	9.25	7.233	3.81	10.30	0.54
1.117	0.54	4.183	9.25	7.250	3.81	10.32	0.54
1.133	0.54	4.200	9.25	7.267	2.18	10.33	0.54
1.150	0.54	4.217	9.25	7.283	2.18	10.35	0.54
1.167	0.54	4.233	9.25	7.300	2.18	10.37	0.54
1.183	0.54	4.250	9.25	7.317	2.18	10.38	0.54
1.200	0.54	4.267	25.02	7.333	2.18	10.40	0.54
1.217	0.54	4.283	25.02	7.350	2.18	10.42	0.54
1.233	0.54	4.300	25.02	7.367	2.18	10.43	0.54
1.250	0.54	4.317	25.02	7.383	2.18	10.45	0.54
1.267	0.54	4.333	25.02	7.400	2.18	10.47	0.54

Pre Development

1.283	0.54	4.350	25.02	7.417	2.18	10.48	0.54
1.300	0.54	4.367	25.02	7.433	2.18	10.50	0.54
1.317	0.54	4.383	25.02	7.450	2.18	10.52	0.54
1.333	0.54	4.400	25.02	7.467	2.18	10.53	0.54
1.350	0.54	4.417	25.02	7.483	2.18	10.55	0.54
1.367	0.54	4.433	25.02	7.500	2.18	10.57	0.54
1.383	0.54	4.450	25.02	7.517	2.18	10.58	0.54
1.400	0.54	4.467	25.02	7.533	2.18	10.60	0.54
1.417	0.54	4.483	25.02	7.550	2.18	10.62	0.54
1.433	0.54	4.500	25.02	7.567	2.18	10.63	0.54
1.450	0.54	4.517	25.02	7.583	2.18	10.65	0.54
1.467	0.54	4.533	25.02	7.600	2.18	10.67	0.54
1.483	0.54	4.550	25.02	7.617	2.18	10.68	0.54
1.500	0.54	4.567	25.02	7.633	2.18	10.70	0.54
1.517	0.54	4.583	25.02	7.650	2.18	10.72	0.54
1.533	0.54	4.600	25.02	7.667	2.18	10.73	0.54
1.550	0.54	4.617	25.02	7.683	2.18	10.75	0.54
1.567	0.54	4.633	25.02	7.700	2.18	10.77	0.54
1.583	0.54	4.650	25.02	7.717	2.18	10.78	0.54
1.600	0.54	4.667	25.02	7.733	2.18	10.80	0.54
1.617	0.54	4.683	25.02	7.750	2.18	10.82	0.54
1.633	0.54	4.700	25.02	7.767	2.18	10.83	0.54
1.650	0.54	4.717	25.02	7.783	2.18	10.85	0.54
1.667	0.54	4.733	25.02	7.800	2.18	10.87	0.54
1.683	0.54	4.750	25.02	7.817	2.18	10.88	0.54
1.700	0.54	4.767	25.02	7.833	2.18	10.90	0.54
1.717	0.54	4.783	25.02	7.850	2.18	10.92	0.54
1.733	0.54	4.800	25.02	7.867	2.18	10.93	0.54
1.750	0.54	4.817	25.02	7.883	2.18	10.95	0.54
1.767	0.54	4.833	25.02	7.900	2.18	10.97	0.54
1.783	0.54	4.850	25.02	7.917	2.18	10.98	0.54
1.800	0.54	4.867	25.02	7.933	2.18	11.00	0.54
1.817	0.54	4.883	25.02	7.950	2.18	11.02	0.54
1.833	0.54	4.900	25.02	7.967	2.18	11.03	0.54
1.850	0.54	4.917	25.02	7.983	2.18	11.05	0.54
1.867	0.54	4.933	25.02	8.000	2.18	11.07	0.54
1.883	0.54	4.950	25.02	8.017	2.18	11.08	0.54
1.900	0.54	4.967	25.02	8.033	2.18	11.10	0.54
1.917	0.54	4.983	25.02	8.050	2.18	11.12	0.54
1.933	0.54	5.000	25.02	8.067	2.18	11.13	0.54
1.950	0.54	5.017	25.02	8.083	2.18	11.15	0.54
1.967	0.54	5.033	25.02	8.100	2.18	11.17	0.54
1.983	0.54	5.050	25.02	8.117	2.18	11.18	0.54
2.000	0.54	5.067	25.02	8.133	2.18	11.20	0.54
2.017	0.54	5.083	25.02	8.150	2.18	11.22	0.54
2.033	0.54	5.100	25.02	8.167	2.18	11.23	0.54
2.050	0.54	5.117	25.02	8.183	2.18	11.25	0.54
2.067	0.54	5.133	25.02	8.200	2.18	11.27	0.54
2.083	0.54	5.150	25.02	8.217	2.18	11.28	0.54
2.100	0.54	5.167	25.02	8.233	2.18	11.30	0.54
2.117	0.54	5.183	25.02	8.250	2.18	11.32	0.54
2.133	0.54	5.200	25.02	8.267	1.09	11.33	0.54
2.150	0.54	5.217	25.02	8.283	1.09	11.35	0.54
2.167	0.54	5.233	25.02	8.300	1.09	11.37	0.54
2.183	0.54	5.250	25.01	8.317	1.09	11.38	0.54
2.200	0.54	5.267	7.07	8.333	1.09	11.40	0.54
2.217	0.54	5.283	7.07	8.350	1.09	11.42	0.54
2.233	0.54	5.300	7.07	8.367	1.09	11.43	0.54
2.250	0.54	5.317	7.07	8.383	1.09	11.45	0.54
2.267	3.26	5.333	7.07	8.400	1.09	11.47	0.54
2.283	3.26	5.350	7.07	8.417	1.09	11.48	0.54
2.300	3.26	5.367	7.07	8.433	1.09	11.50	0.54
2.317	3.26	5.383	7.07	8.450	1.09	11.52	0.54
2.333	3.26	5.400	7.07	8.467	1.09	11.53	0.54
2.350	3.26	5.417	7.07	8.483	1.09	11.55	0.54
2.367	3.26	5.433	7.07	8.500	1.09	11.57	0.54
2.383	3.26	5.450	7.07	8.517	1.09	11.58	0.54
2.400	3.26	5.467	7.07	8.533	1.09	11.60	0.54

2.417	3.26	5.483	7.07	8.550	1.09	11.62	0.54
2.433	3.26	5.500	7.07	8.567	1.09	11.63	0.54
2.450	3.26	5.517	7.07	8.583	1.09	11.65	0.54
2.467	3.26	5.533	7.07	8.600	1.09	11.67	0.54
2.483	3.26	5.550	7.07	8.617	1.09	11.68	0.54
2.500	3.26	5.567	7.07	8.633	1.09	11.70	0.54
2.517	3.26	5.583	7.07	8.650	1.09	11.72	0.54
2.533	3.26	5.600	7.07	8.667	1.09	11.73	0.54
2.550	3.26	5.617	7.07	8.683	1.09	11.75	0.54
2.567	3.26	5.633	7.07	8.700	1.09	11.77	0.54
2.583	3.26	5.650	7.07	8.717	1.09	11.78	0.54
2.600	3.26	5.667	7.07	8.733	1.09	11.80	0.54
2.617	3.26	5.683	7.07	8.750	1.09	11.82	0.54
2.633	3.26	5.700	7.07	8.767	1.09	11.83	0.54
2.650	3.26	5.717	7.07	8.783	1.09	11.85	0.54
2.667	3.26	5.733	7.07	8.800	1.09	11.87	0.54
2.683	3.26	5.750	7.07	8.817	1.09	11.88	0.54
2.700	3.26	5.767	7.07	8.833	1.09	11.90	0.54
2.717	3.26	5.783	7.07	8.850	1.09	11.92	0.54
2.733	3.26	5.800	7.07	8.867	1.09	11.93	0.54
2.750	3.26	5.817	7.07	8.883	1.09	11.95	0.54
2.767	3.26	5.833	7.07	8.900	1.09	11.97	0.54
2.783	3.26	5.850	7.07	8.917	1.09	11.98	0.54
2.800	3.26	5.867	7.07	8.933	1.09	12.00	0.54
2.817	3.26	5.883	7.07	8.950	1.09	12.02	0.54
2.833	3.26	5.900	7.07	8.967	1.09	12.03	0.54
2.850	3.26	5.917	7.07	8.983	1.09	12.05	0.54
2.867	3.26	5.933	7.07	9.000	1.09	12.07	0.54
2.883	3.26	5.950	7.07	9.017	1.09	12.08	0.54
2.900	3.26	5.967	7.07	9.033	1.09	12.10	0.54
2.917	3.26	5.983	7.07	9.050	1.09	12.12	0.54
2.933	3.26	6.000	7.07	9.067	1.09	12.13	0.54
2.950	3.26	6.017	7.07	9.083	1.09	12.15	0.54
2.967	3.26	6.033	7.07	9.100	1.09	12.17	0.54
2.983	3.26	6.050	7.07	9.117	1.09	12.18	0.54
3.000	3.26	6.067	7.07	9.133	1.09	12.20	0.54
3.017	3.26	6.083	7.07	9.150	1.09	12.22	0.54
3.033	3.26	6.100	7.07	9.167	1.09	12.23	0.54
3.050	3.26	6.117	7.07	9.183	1.09	12.25	0.54
3.067	3.26	6.133	7.07	9.200	1.09		

Max.Eff.Inten.(mm/hr)=	25.02	16.16	
over (min)	5.00	8.00	
Storage Coeff. (min)=	5.10 (ii)	7.06 (ii)	
Unit Hyd. Tpeak (min)=	5.00	8.00	
Unit Hyd. peak (cms)=	0.22	0.15	
			TOTALS
PEAK FLOW (cms)=	0.16	0.00	0.164 (iii)
TIME TO PEAK (hrs)=	5.23	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.11	53.10
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.46	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2011):		4.69	0.325	5.25	53.10
+ ID2= 2 (2012):		2.37	0.164	5.25	53.10

ID = 3 (0201): 7.06 0.489 5.25 53.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902) / IN= 2---> OUT= 1 / DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.7670	0.2467
	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937
	1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	0.489	5.25	53.10
OUTFLOW: ID= 1 (0902)	7.060	0.437	5.30	43.57

PEAK FLOW REDUCTION [Qout/Qin](%)= 89.49
TIME SHIFT OF PEAK FLOW (min)= 3.00
MAXIMUM STORAGE USED (ha.m.)= 0.1922

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\e1eed8ab
Ptotal= 54.38 mm	Comments: 5 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	9.25	6.75	3.81	10.00	0.54
0.50	0.54	3.75	9.25	7.00	3.81	10.25	0.54
0.75	0.54	4.00	9.25	7.25	3.81	10.50	0.54
1.00	0.54	4.25	9.25	7.50	2.18	10.75	0.54
1.25	0.54	4.50	25.02	7.75	2.18	11.00	0.54
1.50	0.54	4.75	25.02	8.00	2.18	11.25	0.54
1.75	0.54	5.00	25.02	8.25	2.18	11.50	0.54
2.00	0.54	5.25	25.02	8.50	1.09	11.75	0.54
2.25	0.54	5.50	7.07	8.75	1.09	12.00	0.54
2.50	3.26	5.75	7.07	9.00	1.09	12.25	0.54
2.75	3.26	6.00	7.07	9.25	1.09		
3.00	3.26	6.25	7.07	9.50	0.54		
3.25	3.26	6.50	3.81	9.75	0.54		

CALIB / STANDHYD (0301) / ID= 1 DT= 5.0 min	Area (ha)= 6.15	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.26	6.250	7.07	9.33	0.54
0.167	0.00	3.250	3.26	6.333	3.81	9.42	0.54
0.250	0.00	3.333	9.25	6.417	3.81	9.50	0.54
0.333	0.54	3.417	9.25	6.500	3.81	9.58	0.54
0.417	0.54	3.500	9.25	6.583	3.81	9.67	0.54
0.500	0.54	3.583	9.25	6.667	3.81	9.75	0.54
0.583	0.54	3.667	9.25	6.750	3.81	9.83	0.54
0.667	0.54	3.750	9.25	6.833	3.81	9.92	0.54
0.750	0.54	3.833	9.25	6.917	3.81	10.00	0.54
0.833	0.54	3.917	9.25	7.000	3.81	10.08	0.54
0.917	0.54	4.000	9.25	7.083	3.81	10.17	0.54
1.000	0.54	4.083	9.25	7.167	3.81	10.25	0.54
1.083	0.54	4.167	9.25	7.250	3.81	10.33	0.54
1.167	0.54	4.250	9.25	7.333	2.18	10.42	0.54
1.250	0.54	4.333	25.02	7.417	2.18	10.50	0.54
1.333	0.54	4.417	25.02	7.500	2.18	10.58	0.54
1.417	0.54	4.500	25.02	7.583	2.18	10.67	0.54
1.500	0.54	4.583	25.02	7.667	2.18	10.75	0.54
1.583	0.54	4.667	25.02	7.750	2.18	10.83	0.54
1.667	0.54	4.750	25.02	7.833	2.18	10.92	0.54
1.750	0.54	4.833	25.02	7.917	2.18	11.00	0.54
1.833	0.54	4.917	25.02	8.000	2.18	11.08	0.54
1.917	0.54	5.000	25.02	8.083	2.18	11.17	0.54
2.000	0.54	5.083	25.02	8.167	2.18	11.25	0.54
2.083	0.54	5.167	25.02	8.250	2.18	11.33	0.54
2.167	0.54	5.250	25.02	8.333	1.09	11.42	0.54
2.250	0.54	5.333	7.07	8.417	1.09	11.50	0.54
2.333	3.26	5.417	7.07	8.500	1.09	11.58	0.54
2.417	3.26	5.500	7.07	8.583	1.09	11.67	0.54
2.500	3.26	5.583	7.07	8.667	1.09	11.75	0.54
2.583	3.26	5.667	7.07	8.750	1.09	11.83	0.54
2.667	3.26	5.750	7.07	8.833	1.09	11.92	0.54
2.750	3.26	5.833	7.07	8.917	1.09	12.00	0.54
2.833	3.26	5.917	7.07	9.000	1.09	12.08	0.54
2.917	3.26	6.000	7.07	9.083	1.09	12.17	0.54
3.000	3.26	6.083	7.07	9.167	1.09	12.25	0.54
3.083	3.26	6.167	7.07	9.250	1.09		

			TOTALS
Max.Eff.Inten.(mm/hr)=	25.02	16.16	
over (min)	5.00	10.00	
Storage Coeff. (min)=	6.79 (ii)	8.74 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.18	0.12	
PEAK FLOW (cms)=	0.42	0.00	0.426 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	53.38	25.11	53.10
TOTAL RAINFALL (mm)=	54.38	54.38	54.38
RUNOFF COEFFICIENT =	0.98	0.46	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6480	0.2350

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0301)	6.150	0.426	5.25	53.10
OUTFLOW: ID= 1 (0903)	6.150	0.298	5.33	53.08

PEAK FLOW REDUCTION [Qout/Qin](%)= 69.95
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1085

```
V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    H   H    Y    M   M  O   O
 OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\50a22bb4-4f85-4e21-85b6-7499a1bab0e3\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\50a22bb4-4f85-4e21-85b6-7499a1bab0e3\scena

DATE: 02-03-2020 TIME: 04:44:14

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 010-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63

1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB
STANDHYD (0401) | Area (ha)= 9.90
ID= 1 DT= 1.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63
0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63
0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63
0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63
0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63

Pre Development

0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63
0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63
1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63
1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63
1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63
1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63
1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63
1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63

1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63
1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63
2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63
2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63
2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63
2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63
2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63
2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63

Pre Development

2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63
3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.99	
over (min)	7.00	13.00	
Storage Coeff. (min)=	7.40 (ii)	12.22 (ii)	
Unit Hyd. Tpeak (min)=	7.00	13.00	
Unit Hyd. peak (cms)=	0.16	0.09	
			TOTALS
PEAK FLOW (cms)=	0.71	0.05	0.763 (iii)
TIME TO PEAK (hrs)=	5.25	5.28	5.25
RUNOFF VOLUME (mm)=	61.71	31.67	58.71
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.51	0.94

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)|				
IN= 2---> OUT= 1 |				
DT= 1.0 min |	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	0.763	5.25	58.71
OUTFLOW: ID= 1 (0904)	9.900	0.734	5.28	58.70

PEAK FLOW REDUCTION [Qout/Qin](%)= 96.14
TIME SHIFT OF PEAK FLOW (min)= 2.00
MAXIMUM STORAGE USED (ha.m.)= 0.0697

READ STORM | Ptotal= 62.71 mm	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

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| CALIB            |
| NASHYD   (  0104)|   Area    (ha)=  43.69   Curve Number   (CN)= 80.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.61

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

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    Unit Hyd Qpeak  (cms)=   0.639

    PEAK FLOW       (cms)=   0.525 (i)
    TIME TO PEAK    (hrs)=   8.167
    RUNOFF VOLUME    (mm)=  26.753
    TOTAL RAINFALL   (mm)=  62.710
    RUNOFF COEFFICIENT   =   0.427

    (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
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|                  |              388d05f5-b393-488a-b44b-69a739b9be50\eb587240
| Ptotal= 62.71 mm |    Comments: 10 Year 12 Hour AES (Bloor, TRCA)
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

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| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   7.18   Curve Number   (CN)= 73.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.40

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63

3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.203 (i)
TIME TO PEAK (hrs)= 5.417
RUNOFF VOLUME (mm)= 21.344
TOTAL RAINFALL (mm)= 62.710
RUNOFF COEFFICIENT = 0.340

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB	
STANDHYD (0101)	Area (ha)= 1.60
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63

Pre Development

1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

				TOTALS
Max.Eff.Inten.(mm/hr)=		28.84	27.10	
over (min)		5.00	10.00	
Storage Coeff. (min)=		4.28 (ii)	6.13 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.23	0.15	
PEAK FLOW	(cms)=	0.13	0.00	0.128 (iii)
TIME TO PEAK	(hrs)=	5.17	5.25	5.25
RUNOFF VOLUME	(mm)=	61.71	50.72	61.60
TOTAL RAINFALL	(mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT	=	0.98	0.81	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		1.60	0.128	5.25	61.60
+ ID2= 2 (0102):		7.18	0.203	5.42	21.34
ID = 3 (0601):		8.78	0.320	5.25	28.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0601)	8.780	0.320	5.25	28.68
OUTFLOW: ID= 1 (0702)	8.780	0.018	9.50	7.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.48
TIME SHIFT OF PEAK FLOW (min)=255.00
MAXIMUM STORAGE USED (ha.m.)= 0.2256

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)	8.78	0.02	9.50	7.43	0.13	0.39
OUTFLOW: ID= 1 (0703)	8.78	0.02	9.58	7.43	0.13	0.39

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel

49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	AREA (ha)	<---- hydrograph ----> QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.02	9.58	7.43	0.04	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.01	13.08	7.37	0.04	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB	
STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00

Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=		28.84	19.99	
over (min)		5.00	10.00	
Storage Coeff. (min)=		5.24 (ii)	7.08 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.21	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.25	0.00	0.250 (iii)
TIME TO PEAK	(hrs)=	5.25	5.25	5.25
RUNOFF VOLUME	(mm)=	61.71	31.67	61.41
TOTAL RAINFALL	(mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT	=	0.98	0.51	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Pre Development

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB	
STANDHYD (0103)	Area (ha)= 1.83
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63
1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63

2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.99	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.46 (ii)	9.28 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.23	0.12	
			TOTALS
PEAK FLOW (cms)=	0.13	0.01	0.142 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	31.67	58.70
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.51	0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0103):	1.83	0.142	5.25	58.70
+ ID2= 2 (0105):	3.13	0.250	5.25	61.41
ID = 3 (0602):	4.96	0.392	5.25	60.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.4450	0.1950
	0.0120	0.1170	0.6080	0.2145
	0.0650	0.1365	0.7950	0.2340
	0.1670	0.1560	0.9980	0.2535
	0.2940	0.1755	1.4680	0.2632

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0602)	4.960	0.392	5.25	60.41
OUTFLOW: ID= 1 (0705)	4.960	0.258	5.33	59.91

PEAK FLOW REDUCTION [Qout/Qin](%)= 66.00
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1707

ADD HYD (0901)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):	43.69	0.525	8.17	26.75
+ ID2= 2 (0704):	8.78	0.014	13.08	7.37
ID = 3 (0901):	52.47	0.529	8.25	23.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0901):	52.47	0.529	8.25	23.51
+ ID2= 2 (0705):	4.96	0.258	5.33	59.91
ID = 1 (0901):	57.43	0.579	8.08	26.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB		
STANDHYD (2011)	Area (ha)=	4.69
ID= 1 DT= 1.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

Pre Development

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63
0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63
0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63
0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63
0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63
0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63
0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63
1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63

Pre Development

1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63
1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63
1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63
1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63
1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63
1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63
1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63
2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63

2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63
2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63
2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63
2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63
2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63
2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63
3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.99	
over (min)	6.00	8.00	
Storage Coeff. (min)=	5.91 (ii)	7.76 (ii)	
Unit Hyd. Tpeak (min)=	6.00	8.00	
Unit Hyd. peak (cms)=	0.19	0.14	
			TOTALS
PEAK FLOW (cms)=	0.37	0.00	0.374 (iii)
TIME TO PEAK (hrs)=	5.23	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	31.67	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.51	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Pre Development

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
Ptotal= 62.71 mm | Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB | STANDHYD (2012) | ID= 1 DT= 1.0 min | Area (ha)= 2.37 | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	3.76	6.150	8.15	9.22	1.25
0.033	0.00	3.100	3.76	6.167	8.15	9.23	1.25
0.050	0.00	3.117	3.76	6.183	8.15	9.25	1.25
0.067	0.00	3.133	3.76	6.200	8.15	9.27	0.63
0.083	0.00	3.150	3.76	6.217	8.15	9.28	0.63
0.100	0.00	3.167	3.76	6.233	8.15	9.30	0.63
0.117	0.00	3.183	3.76	6.250	8.14	9.32	0.63
0.133	0.00	3.200	3.76	6.267	4.39	9.33	0.63
0.150	0.00	3.217	3.76	6.283	4.39	9.35	0.63
0.167	0.00	3.233	3.76	6.300	4.39	9.37	0.63
0.183	0.00	3.250	3.76	6.317	4.39	9.38	0.63
0.200	0.00	3.267	10.66	6.333	4.39	9.40	0.63
0.217	0.00	3.283	10.66	6.350	4.39	9.42	0.63
0.233	0.00	3.300	10.66	6.367	4.39	9.43	0.63
0.250	0.00	3.317	10.66	6.383	4.39	9.45	0.63
0.267	0.63	3.333	10.66	6.400	4.39	9.47	0.63
0.283	0.63	3.350	10.66	6.417	4.39	9.48	0.63
0.300	0.63	3.367	10.66	6.433	4.39	9.50	0.63
0.317	0.63	3.383	10.66	6.450	4.39	9.52	0.63
0.333	0.63	3.400	10.66	6.467	4.39	9.53	0.63
0.350	0.63	3.417	10.66	6.483	4.39	9.55	0.63
0.367	0.63	3.433	10.66	6.500	4.39	9.57	0.63
0.383	0.63	3.450	10.66	6.517	4.39	9.58	0.63

Pre Development

0.400	0.63	3.467	10.66	6.533	4.39	9.60	0.63
0.417	0.63	3.483	10.66	6.550	4.39	9.62	0.63
0.433	0.63	3.500	10.66	6.567	4.39	9.63	0.63
0.450	0.63	3.517	10.66	6.583	4.39	9.65	0.63
0.467	0.63	3.533	10.66	6.600	4.39	9.67	0.63
0.483	0.63	3.550	10.66	6.617	4.39	9.68	0.63
0.500	0.63	3.567	10.66	6.633	4.39	9.70	0.63
0.517	0.63	3.583	10.66	6.650	4.39	9.72	0.63
0.533	0.63	3.600	10.66	6.667	4.39	9.73	0.63
0.550	0.63	3.617	10.66	6.683	4.39	9.75	0.63
0.567	0.63	3.633	10.66	6.700	4.39	9.77	0.63
0.583	0.63	3.650	10.66	6.717	4.39	9.78	0.63
0.600	0.63	3.667	10.66	6.733	4.39	9.80	0.63
0.617	0.63	3.683	10.66	6.750	4.39	9.82	0.63
0.633	0.63	3.700	10.66	6.767	4.39	9.83	0.63
0.650	0.63	3.717	10.66	6.783	4.39	9.85	0.63
0.667	0.63	3.733	10.66	6.800	4.39	9.87	0.63
0.683	0.63	3.750	10.66	6.817	4.39	9.88	0.63
0.700	0.63	3.767	10.66	6.833	4.39	9.90	0.63
0.717	0.63	3.783	10.66	6.850	4.39	9.92	0.63
0.733	0.63	3.800	10.66	6.867	4.39	9.93	0.63
0.750	0.63	3.817	10.66	6.883	4.39	9.95	0.63
0.767	0.63	3.833	10.66	6.900	4.39	9.97	0.63
0.783	0.63	3.850	10.66	6.917	4.39	9.98	0.63
0.800	0.63	3.867	10.66	6.933	4.39	10.00	0.63
0.817	0.63	3.883	10.66	6.950	4.39	10.02	0.63
0.833	0.63	3.900	10.66	6.967	4.39	10.03	0.63
0.850	0.63	3.917	10.66	6.983	4.39	10.05	0.63
0.867	0.63	3.933	10.66	7.000	4.39	10.07	0.63
0.883	0.63	3.950	10.66	7.017	4.39	10.08	0.63
0.900	0.63	3.967	10.66	7.033	4.39	10.10	0.63
0.917	0.63	3.983	10.66	7.050	4.39	10.12	0.63
0.933	0.63	4.000	10.66	7.067	4.39	10.13	0.63
0.950	0.63	4.017	10.66	7.083	4.39	10.15	0.63
0.967	0.63	4.033	10.66	7.100	4.39	10.17	0.63
0.983	0.63	4.050	10.66	7.117	4.39	10.18	0.63
1.000	0.63	4.067	10.66	7.133	4.39	10.20	0.63
1.017	0.63	4.083	10.66	7.150	4.39	10.22	0.63
1.033	0.63	4.100	10.66	7.167	4.39	10.23	0.63
1.050	0.63	4.117	10.66	7.183	4.39	10.25	0.63
1.067	0.63	4.133	10.66	7.200	4.39	10.27	0.63
1.083	0.63	4.150	10.66	7.217	4.39	10.28	0.63
1.100	0.63	4.167	10.66	7.233	4.39	10.30	0.63
1.117	0.63	4.183	10.66	7.250	4.39	10.32	0.63
1.133	0.63	4.200	10.66	7.267	2.51	10.33	0.63
1.150	0.63	4.217	10.66	7.283	2.51	10.35	0.63
1.167	0.63	4.233	10.66	7.300	2.51	10.37	0.63
1.183	0.63	4.250	10.66	7.317	2.51	10.38	0.63
1.200	0.63	4.267	28.84	7.333	2.51	10.40	0.63
1.217	0.63	4.283	28.84	7.350	2.51	10.42	0.63
1.233	0.63	4.300	28.84	7.367	2.51	10.43	0.63
1.250	0.63	4.317	28.84	7.383	2.51	10.45	0.63
1.267	0.63	4.333	28.84	7.400	2.51	10.47	0.63
1.283	0.63	4.350	28.84	7.417	2.51	10.48	0.63
1.300	0.63	4.367	28.84	7.433	2.51	10.50	0.63
1.317	0.63	4.383	28.84	7.450	2.51	10.52	0.63
1.333	0.63	4.400	28.84	7.467	2.51	10.53	0.63
1.350	0.63	4.417	28.84	7.483	2.51	10.55	0.63
1.367	0.63	4.433	28.84	7.500	2.51	10.57	0.63
1.383	0.63	4.450	28.84	7.517	2.51	10.58	0.63
1.400	0.63	4.467	28.84	7.533	2.51	10.60	0.63
1.417	0.63	4.483	28.84	7.550	2.51	10.62	0.63
1.433	0.63	4.500	28.84	7.567	2.51	10.63	0.63
1.450	0.63	4.517	28.84	7.583	2.51	10.65	0.63
1.467	0.63	4.533	28.84	7.600	2.51	10.67	0.63
1.483	0.63	4.550	28.84	7.617	2.51	10.68	0.63
1.500	0.63	4.567	28.84	7.633	2.51	10.70	0.63
1.517	0.63	4.583	28.84	7.650	2.51	10.72	0.63

Pre Development

1.533	0.63	4.600	28.84	7.667	2.51	10.73	0.63
1.550	0.63	4.617	28.84	7.683	2.51	10.75	0.63
1.567	0.63	4.633	28.84	7.700	2.51	10.77	0.63
1.583	0.63	4.650	28.84	7.717	2.51	10.78	0.63
1.600	0.63	4.667	28.84	7.733	2.51	10.80	0.63
1.617	0.63	4.683	28.84	7.750	2.51	10.82	0.63
1.633	0.63	4.700	28.84	7.767	2.51	10.83	0.63
1.650	0.63	4.717	28.84	7.783	2.51	10.85	0.63
1.667	0.63	4.733	28.84	7.800	2.51	10.87	0.63
1.683	0.63	4.750	28.84	7.817	2.51	10.88	0.63
1.700	0.63	4.767	28.84	7.833	2.51	10.90	0.63
1.717	0.63	4.783	28.84	7.850	2.51	10.92	0.63
1.733	0.63	4.800	28.84	7.867	2.51	10.93	0.63
1.750	0.63	4.817	28.84	7.883	2.51	10.95	0.63
1.767	0.63	4.833	28.84	7.900	2.51	10.97	0.63
1.783	0.63	4.850	28.84	7.917	2.51	10.98	0.63
1.800	0.63	4.867	28.84	7.933	2.51	11.00	0.63
1.817	0.63	4.883	28.84	7.950	2.51	11.02	0.63
1.833	0.63	4.900	28.84	7.967	2.51	11.03	0.63
1.850	0.63	4.917	28.84	7.983	2.51	11.05	0.63
1.867	0.63	4.933	28.84	8.000	2.51	11.07	0.63
1.883	0.63	4.950	28.84	8.017	2.51	11.08	0.63
1.900	0.63	4.967	28.84	8.033	2.51	11.10	0.63
1.917	0.63	4.983	28.84	8.050	2.51	11.12	0.63
1.933	0.63	5.000	28.84	8.067	2.51	11.13	0.63
1.950	0.63	5.017	28.84	8.083	2.51	11.15	0.63
1.967	0.63	5.033	28.84	8.100	2.51	11.17	0.63
1.983	0.63	5.050	28.84	8.117	2.51	11.18	0.63
2.000	0.63	5.067	28.84	8.133	2.51	11.20	0.63
2.017	0.63	5.083	28.84	8.150	2.51	11.22	0.63
2.033	0.63	5.100	28.84	8.167	2.51	11.23	0.63
2.050	0.63	5.117	28.84	8.183	2.51	11.25	0.63
2.067	0.63	5.133	28.84	8.200	2.51	11.27	0.63
2.083	0.63	5.150	28.84	8.217	2.51	11.28	0.63
2.100	0.63	5.167	28.84	8.233	2.51	11.30	0.63
2.117	0.63	5.183	28.84	8.250	2.51	11.32	0.63
2.133	0.63	5.200	28.84	8.267	1.25	11.33	0.63
2.150	0.63	5.217	28.84	8.283	1.25	11.35	0.63
2.167	0.63	5.233	28.84	8.300	1.25	11.37	0.63
2.183	0.63	5.250	28.82	8.317	1.25	11.38	0.63
2.200	0.63	5.267	8.15	8.333	1.25	11.40	0.63
2.217	0.63	5.283	8.15	8.350	1.25	11.42	0.63
2.233	0.63	5.300	8.15	8.367	1.25	11.43	0.63
2.250	0.63	5.317	8.15	8.383	1.25	11.45	0.63
2.267	3.76	5.333	8.15	8.400	1.25	11.47	0.63
2.283	3.76	5.350	8.15	8.417	1.25	11.48	0.63
2.300	3.76	5.367	8.15	8.433	1.25	11.50	0.63
2.317	3.76	5.383	8.15	8.450	1.25	11.52	0.63
2.333	3.76	5.400	8.15	8.467	1.25	11.53	0.63
2.350	3.76	5.417	8.15	8.483	1.25	11.55	0.63
2.367	3.76	5.433	8.15	8.500	1.25	11.57	0.63
2.383	3.76	5.450	8.15	8.517	1.25	11.58	0.63
2.400	3.76	5.467	8.15	8.533	1.25	11.60	0.63
2.417	3.76	5.483	8.15	8.550	1.25	11.62	0.63
2.433	3.76	5.500	8.15	8.567	1.25	11.63	0.63
2.450	3.76	5.517	8.15	8.583	1.25	11.65	0.63
2.467	3.76	5.533	8.15	8.600	1.25	11.67	0.63
2.483	3.76	5.550	8.15	8.617	1.25	11.68	0.63
2.500	3.76	5.567	8.15	8.633	1.25	11.70	0.63
2.517	3.76	5.583	8.15	8.650	1.25	11.72	0.63
2.533	3.76	5.600	8.15	8.667	1.25	11.73	0.63
2.550	3.76	5.617	8.15	8.683	1.25	11.75	0.63
2.567	3.76	5.633	8.15	8.700	1.25	11.77	0.63
2.583	3.76	5.650	8.15	8.717	1.25	11.78	0.63
2.600	3.76	5.667	8.15	8.733	1.25	11.80	0.63
2.617	3.76	5.683	8.15	8.750	1.25	11.82	0.63
2.633	3.76	5.700	8.15	8.767	1.25	11.83	0.63
2.650	3.76	5.717	8.15	8.783	1.25	11.85	0.63

2.667	3.76	5.733	8.15	8.800	1.25	11.87	0.63
2.683	3.76	5.750	8.15	8.817	1.25	11.88	0.63
2.700	3.76	5.767	8.15	8.833	1.25	11.90	0.63
2.717	3.76	5.783	8.15	8.850	1.25	11.92	0.63
2.733	3.76	5.800	8.15	8.867	1.25	11.93	0.63
2.750	3.76	5.817	8.15	8.883	1.25	11.95	0.63
2.767	3.76	5.833	8.15	8.900	1.25	11.97	0.63
2.783	3.76	5.850	8.15	8.917	1.25	11.98	0.63
2.800	3.76	5.867	8.15	8.933	1.25	12.00	0.63
2.817	3.76	5.883	8.15	8.950	1.25	12.02	0.63
2.833	3.76	5.900	8.15	8.967	1.25	12.03	0.63
2.850	3.76	5.917	8.15	8.983	1.25	12.05	0.63
2.867	3.76	5.933	8.15	9.000	1.25	12.07	0.63
2.883	3.76	5.950	8.15	9.017	1.25	12.08	0.63
2.900	3.76	5.967	8.15	9.033	1.25	12.10	0.63
2.917	3.76	5.983	8.15	9.050	1.25	12.12	0.63
2.933	3.76	6.000	8.15	9.067	1.25	12.13	0.63
2.950	3.76	6.017	8.15	9.083	1.25	12.15	0.63
2.967	3.76	6.033	8.15	9.100	1.25	12.17	0.63
2.983	3.76	6.050	8.15	9.117	1.25	12.18	0.63
3.000	3.76	6.067	8.15	9.133	1.25	12.20	0.63
3.017	3.76	6.083	8.15	9.150	1.25	12.22	0.63
3.033	3.76	6.100	8.15	9.167	1.25	12.23	0.63
3.050	3.76	6.117	8.15	9.183	1.25	12.25	0.63
3.067	3.76	6.133	8.15	9.200	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.99	
over (min)	5.00	7.00	
Storage Coeff. (min)=	4.82 (ii)	6.67 (ii)	
Unit Hyd. Tpeak (min)=	5.00	7.00	
Unit Hyd. peak (cms)=	0.23	0.17	
			TOTALS
PEAK FLOW (cms)=	0.19	0.00	0.189 (iii)
TIME TO PEAK (hrs)=	5.23	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	31.67	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.51	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2011):		4.69	0.374	5.25	61.41
+ ID2= 2 (2012):		2.37	0.189	5.25	61.41
ID = 3 (0201):		7.06	0.564	5.25	61.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	1.7670	0.2467
	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937

1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	0.564	5.25	61.41
OUTFLOW: ID= 1 (0902)	7.060	0.534	5.28	51.76

PEAK FLOW REDUCTION [Qout/Qin](%)= 94.71
TIME SHIFT OF PEAK FLOW (min)= 2.00
MAXIMUM STORAGE USED (ha.m.)= 0.1988

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\eb587240
Ptotal= 62.71 mm	Comments: 10 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	10.66	6.75	4.39	10.00	0.63
0.50	0.63	3.75	10.66	7.00	4.39	10.25	0.63
0.75	0.63	4.00	10.66	7.25	4.39	10.50	0.63
1.00	0.63	4.25	10.66	7.50	2.51	10.75	0.63
1.25	0.63	4.50	28.84	7.75	2.51	11.00	0.63
1.50	0.63	4.75	28.84	8.00	2.51	11.25	0.63
1.75	0.63	5.00	28.84	8.25	2.51	11.50	0.63
2.00	0.63	5.25	28.84	8.50	1.25	11.75	0.63
2.25	0.63	5.50	8.15	8.75	1.25	12.00	0.63
2.50	3.76	5.75	8.15	9.00	1.25	12.25	0.63
2.75	3.76	6.00	8.15	9.25	1.25		
3.00	3.76	6.25	8.15	9.50	0.63		
3.25	3.76	6.50	4.39	9.75	0.63		

CALIB	
STANDHYD (0301)	Area (ha)= 6.15
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.76	6.250	8.15	9.33	0.63
0.167	0.00	3.250	3.76	6.333	4.39	9.42	0.63
0.250	0.00	3.333	10.66	6.417	4.39	9.50	0.63
0.333	0.63	3.417	10.66	6.500	4.39	9.58	0.63
0.417	0.63	3.500	10.66	6.583	4.39	9.67	0.63
0.500	0.63	3.583	10.66	6.667	4.39	9.75	0.63
0.583	0.63	3.667	10.66	6.750	4.39	9.83	0.63
0.667	0.63	3.750	10.66	6.833	4.39	9.92	0.63
0.750	0.63	3.833	10.66	6.917	4.39	10.00	0.63
0.833	0.63	3.917	10.66	7.000	4.39	10.08	0.63
0.917	0.63	4.000	10.66	7.083	4.39	10.17	0.63
1.000	0.63	4.083	10.66	7.167	4.39	10.25	0.63
1.083	0.63	4.167	10.66	7.250	4.39	10.33	0.63

1.167	0.63	4.250	10.66	7.333	2.51	10.42	0.63
1.250	0.63	4.333	28.84	7.417	2.51	10.50	0.63
1.333	0.63	4.417	28.84	7.500	2.51	10.58	0.63
1.417	0.63	4.500	28.84	7.583	2.51	10.67	0.63
1.500	0.63	4.583	28.84	7.667	2.51	10.75	0.63
1.583	0.63	4.667	28.84	7.750	2.51	10.83	0.63
1.667	0.63	4.750	28.84	7.833	2.51	10.92	0.63
1.750	0.63	4.833	28.84	7.917	2.51	11.00	0.63
1.833	0.63	4.917	28.84	8.000	2.51	11.08	0.63
1.917	0.63	5.000	28.84	8.083	2.51	11.17	0.63
2.000	0.63	5.083	28.84	8.167	2.51	11.25	0.63
2.083	0.63	5.167	28.84	8.250	2.51	11.33	0.63
2.167	0.63	5.250	28.84	8.333	1.25	11.42	0.63
2.250	0.63	5.333	8.15	8.417	1.25	11.50	0.63
2.333	3.76	5.417	8.15	8.500	1.25	11.58	0.63
2.417	3.76	5.500	8.15	8.583	1.25	11.67	0.63
2.500	3.76	5.583	8.15	8.667	1.25	11.75	0.63
2.583	3.76	5.667	8.15	8.750	1.25	11.83	0.63
2.667	3.76	5.750	8.15	8.833	1.25	11.92	0.63
2.750	3.76	5.833	8.15	8.917	1.25	12.00	0.63
2.833	3.76	5.917	8.15	9.000	1.25	12.08	0.63
2.917	3.76	6.000	8.15	9.083	1.25	12.17	0.63
3.000	3.76	6.083	8.15	9.167	1.25	12.25	0.63
3.083	3.76	6.167	8.15	9.250	1.25		

Max.Eff.Inten.(mm/hr)=	28.84	19.99	
over (min)	5.00	10.00	
Storage Coeff. (min)=	6.41 (ii)	8.26 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.18	0.13	
			TOTALS
PEAK FLOW (cms)=	0.49	0.00	0.491 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	61.71	31.67	61.41
TOTAL RAINFALL (mm)=	62.71	62.71	62.71
RUNOFF COEFFICIENT =	0.98	0.51	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	0.491	5.25	61.41
OUTFLOW: ID= 1 (0903)	6.150	0.344	5.33	61.40

PEAK FLOW REDUCTION [Qout/Qin](%)= 70.10
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1255

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V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
  V V    I      SS   U   U  A   A  L
```



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 VV     I    SSSSS  UUUUU  A   A  LLLLL

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    H   H    Y    M   M  O   O
 OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\6492085f-9b07-41ec-aac1-042c2b4fb3fd\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\6492085f-9b07-41ec-aac1-042c2b4fb3fd\scena

DATE: 02-03-2020 TIME: 04:44:14

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 025-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB	
STANDHYD (0401)	Area (ha)= 9.90
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73
0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73
0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73
0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73
0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73
0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73
0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73

0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73
1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73
1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73
1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73
1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73
1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73
1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73

2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73
2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73
2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73
2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73
2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73
2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.88	
over (min)	7.00	12.00	
Storage Coeff. (min)=	6.96 (ii)	11.49 (ii)	
Unit Hyd. Tpeak (min)=	7.00	12.00	
Unit Hyd. peak (cms)=	0.16	0.10	
			TOTALS

PEAK FLOW	(cms)=	0.83	0.06	0.895 (iii)
TIME TO PEAK	(hrs)=	5.25	5.27	5.25
RUNOFF VOLUME	(mm)=	72.09	40.22	68.91
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.55	0.94

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	0.895	5.25	68.91
OUTFLOW: ID= 1 (0904)	9.900	0.862	5.28	68.91

PEAK FLOW REDUCTION [Qout/Qin](%)= 96.30
TIME SHIFT OF PEAK FLOW (min)= 2.00
MAXIMUM STORAGE USED (ha.m.)= 0.0819

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB			
NASHYD (0104)| ID= 1 DT= 5.0 min	Area (ha)= 43.69	Curve Number (CN)= 80.0	
	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.61		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.679 (i)
TIME TO PEAK (hrs)= 8.167
RUNOFF VOLUME (mm)= 34.475
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.472

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73

Pre Development

2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB			
NASHYD (0102)	Area (ha)= 7.18	Curve Number (CN)= 73.0	
ID= 1 DT= 5.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.40		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.267 (i)
TIME TO PEAK (hrs)= 5.417
RUNOFF VOLUME (mm)= 27.954
TOTAL RAINFALL (mm)= 73.100
RUNOFF COEFFICIENT = 0.382

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB STANDHYD (0101)	Area (ha)= 1.60
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73

2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	32.04		
over (min)	5.00	10.00		
Storage Coeff. (min)=	4.03 (ii)	5.76 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.24	0.15		
			TOTALS	
PEAK FLOW (cms)=	0.15	0.00	0.149 (iii)	
TIME TO PEAK (hrs)=	5.17	5.25	5.25	
RUNOFF VOLUME (mm)=	72.10	60.82	71.98	
TOTAL RAINFALL (mm)=	73.10	73.10	73.10	
RUNOFF COEFFICIENT =	0.99	0.83	0.98	

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0101):	1.60	0.149	5.25	71.98
	+ ID2= 2 (0102):	7.18	0.267	5.42	27.95
	ID = 3 (0601):	8.78	0.404	5.25	35.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)	IN= 2---> OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
			0.0000	0.0000	0.0430	0.2830
			0.0000	0.1860	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0601)	8.780	0.404	5.25	35.98
OUTFLOW: ID= 1 (0702)	8.780	0.035	8.75	14.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.69
TIME SHIFT OF PEAK FLOW (min)=210.00
MAXIMUM STORAGE USED (ha.m.)= 0.2652

ROUTE CHN(0703)	IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)	8.78	0.04	8.75	14.73	0.16	0.46
OUTFLOW: ID= 1 (0703)	8.78	0.04	8.83	14.73	0.16	0.46

ROUTE CHN(0704)
IN= 2---> OUT= 1

Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84

0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ----> AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	<-pipe / channel-> MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.04	8.83	14.73	0.05	0.12
OUTFLOW: ID= 1 (0704)	8.78	0.03	11.58	14.67	0.05	0.11

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB	
STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73

0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.88	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.93 (ii)	6.66 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.22	0.14	
			TOTALS
PEAK FLOW (cms)=	0.29	0.00	0.292 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	40.23	71.78
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.55	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73

Pre Development

1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB	
STANDHYD (0103)	Area (ha)= 1.83
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73
2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.88

over (min)		5.00	10.00	
Storage Coeff. (min)=		4.19 (ii)	8.73 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.24	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.15	0.01	0.166 (iii)
TIME TO PEAK	(hrs)=	5.17	5.25	5.25
RUNOFF VOLUME	(mm)=	72.10	40.23	68.91
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.55	0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0103):	1.83	0.166	5.25	68.91
+ ID2= 2 (0105):	3.13	0.292	5.25	71.78
ID = 3 (0602):	4.96	0.458	5.25	70.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4450	0.1950
0.0120	0.1170	0.6080	0.2145
0.0650	0.1365	0.7950	0.2340
0.1670	0.1560	0.9980	0.2535
0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	0.458	5.25	70.72
OUTFLOW: ID= 1 (0705)	4.960	0.348	5.33	70.22

PEAK FLOW REDUCTION [Qout/Qin](%)= 76.16
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1841

ADD HYD (0901)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	43.69	0.679	8.17	34.47
+ ID2= 2 (0704):	8.78	0.028	11.58	14.67
ID = 3 (0901):	52.47	0.694	8.25	31.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0901):	52.47	0.694	8.25	31.16
+ ID2= 2 (0705):	4.96	0.348	5.33	70.22
ID = 1 (0901):	57.43	0.749	8.08	34.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm
Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB
STANDHYD (2011)
ID= 1 DT= 1.0 min
Area (ha)= 4.69
Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73
0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73
0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73

Pre Development

0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73
0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73
0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73
0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73
0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73
1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73
1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73

Pre Development

1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73
1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73
1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73
1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73
2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73
2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73
2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73

2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73
2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73
2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Max.Eff.Inten.(mm/hr)=		33.63	24.88	
over (min)		6.00	8.00	
Storage Coeff. (min)=		5.56 (ii)	7.30 (ii)	
Unit Hyd. Tpeak (min)=		6.00	8.00	
Unit Hyd. peak (cms)=		0.20	0.15	
				TOTALS
PEAK FLOW	(cms)=	0.43	0.00	0.437 (iii)
TIME TO PEAK	(hrs)=	5.23	5.25	5.25
RUNOFF VOLUME	(mm)=	72.09	40.22	71.78
TOTAL RAINFALL	(mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT	=	0.99	0.55	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73

Pre Development

1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB STANDHYD (2012) ID= 1 DT= 1.0 min	Area (ha)=	2.37
	Total Imp(%)=	99.00
	Dir. Conn.(%)=	99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.39	6.150	9.50	9.22	1.46
0.033	0.00	3.100	4.39	6.167	9.50	9.23	1.46
0.050	0.00	3.117	4.39	6.183	9.50	9.25	1.46
0.067	0.00	3.133	4.39	6.200	9.50	9.27	0.73
0.083	0.00	3.150	4.39	6.217	9.50	9.28	0.73
0.100	0.00	3.167	4.39	6.233	9.50	9.30	0.73
0.117	0.00	3.183	4.39	6.250	9.49	9.32	0.73
0.133	0.00	3.200	4.39	6.267	5.12	9.33	0.73
0.150	0.00	3.217	4.39	6.283	5.12	9.35	0.73
0.167	0.00	3.233	4.39	6.300	5.12	9.37	0.73
0.183	0.00	3.250	4.39	6.317	5.12	9.38	0.73
0.200	0.00	3.267	12.43	6.333	5.12	9.40	0.73
0.217	0.00	3.283	12.43	6.350	5.12	9.42	0.73
0.233	0.00	3.300	12.43	6.367	5.12	9.43	0.73
0.250	0.00	3.317	12.43	6.383	5.12	9.45	0.73
0.267	0.73	3.333	12.43	6.400	5.12	9.47	0.73
0.283	0.73	3.350	12.43	6.417	5.12	9.48	0.73
0.300	0.73	3.367	12.43	6.433	5.12	9.50	0.73
0.317	0.73	3.383	12.43	6.450	5.12	9.52	0.73
0.333	0.73	3.400	12.43	6.467	5.12	9.53	0.73
0.350	0.73	3.417	12.43	6.483	5.12	9.55	0.73
0.367	0.73	3.433	12.43	6.500	5.12	9.57	0.73
0.383	0.73	3.450	12.43	6.517	5.12	9.58	0.73
0.400	0.73	3.467	12.43	6.533	5.12	9.60	0.73
0.417	0.73	3.483	12.43	6.550	5.12	9.62	0.73
0.433	0.73	3.500	12.43	6.567	5.12	9.63	0.73
0.450	0.73	3.517	12.43	6.583	5.12	9.65	0.73
0.467	0.73	3.533	12.43	6.600	5.12	9.67	0.73
0.483	0.73	3.550	12.43	6.617	5.12	9.68	0.73
0.500	0.73	3.567	12.43	6.633	5.12	9.70	0.73
0.517	0.73	3.583	12.43	6.650	5.12	9.72	0.73
0.533	0.73	3.600	12.43	6.667	5.12	9.73	0.73
0.550	0.73	3.617	12.43	6.683	5.12	9.75	0.73
0.567	0.73	3.633	12.43	6.700	5.12	9.77	0.73
0.583	0.73	3.650	12.43	6.717	5.12	9.78	0.73
0.600	0.73	3.667	12.43	6.733	5.12	9.80	0.73
0.617	0.73	3.683	12.43	6.750	5.12	9.82	0.73

Pre Development

0.633	0.73	3.700	12.43	6.767	5.12	9.83	0.73
0.650	0.73	3.717	12.43	6.783	5.12	9.85	0.73
0.667	0.73	3.733	12.43	6.800	5.12	9.87	0.73
0.683	0.73	3.750	12.43	6.817	5.12	9.88	0.73
0.700	0.73	3.767	12.43	6.833	5.12	9.90	0.73
0.717	0.73	3.783	12.43	6.850	5.12	9.92	0.73
0.733	0.73	3.800	12.43	6.867	5.12	9.93	0.73
0.750	0.73	3.817	12.43	6.883	5.12	9.95	0.73
0.767	0.73	3.833	12.43	6.900	5.12	9.97	0.73
0.783	0.73	3.850	12.43	6.917	5.12	9.98	0.73
0.800	0.73	3.867	12.43	6.933	5.12	10.00	0.73
0.817	0.73	3.883	12.43	6.950	5.12	10.02	0.73
0.833	0.73	3.900	12.43	6.967	5.12	10.03	0.73
0.850	0.73	3.917	12.43	6.983	5.12	10.05	0.73
0.867	0.73	3.933	12.43	7.000	5.12	10.07	0.73
0.883	0.73	3.950	12.43	7.017	5.12	10.08	0.73
0.900	0.73	3.967	12.43	7.033	5.12	10.10	0.73
0.917	0.73	3.983	12.43	7.050	5.12	10.12	0.73
0.933	0.73	4.000	12.43	7.067	5.12	10.13	0.73
0.950	0.73	4.017	12.43	7.083	5.12	10.15	0.73
0.967	0.73	4.033	12.43	7.100	5.12	10.17	0.73
0.983	0.73	4.050	12.43	7.117	5.12	10.18	0.73
1.000	0.73	4.067	12.43	7.133	5.12	10.20	0.73
1.017	0.73	4.083	12.43	7.150	5.12	10.22	0.73
1.033	0.73	4.100	12.43	7.167	5.12	10.23	0.73
1.050	0.73	4.117	12.43	7.183	5.12	10.25	0.73
1.067	0.73	4.133	12.43	7.200	5.12	10.27	0.73
1.083	0.73	4.150	12.43	7.217	5.12	10.28	0.73
1.100	0.73	4.167	12.43	7.233	5.12	10.30	0.73
1.117	0.73	4.183	12.43	7.250	5.11	10.32	0.73
1.133	0.73	4.200	12.43	7.267	2.92	10.33	0.73
1.150	0.73	4.217	12.43	7.283	2.92	10.35	0.73
1.167	0.73	4.233	12.43	7.300	2.92	10.37	0.73
1.183	0.73	4.250	12.43	7.317	2.92	10.38	0.73
1.200	0.73	4.267	33.63	7.333	2.92	10.40	0.73
1.217	0.73	4.283	33.63	7.350	2.92	10.42	0.73
1.233	0.73	4.300	33.63	7.367	2.92	10.43	0.73
1.250	0.73	4.317	33.63	7.383	2.92	10.45	0.73
1.267	0.73	4.333	33.63	7.400	2.92	10.47	0.73
1.283	0.73	4.350	33.63	7.417	2.92	10.48	0.73
1.300	0.73	4.367	33.63	7.433	2.92	10.50	0.73
1.317	0.73	4.383	33.63	7.450	2.92	10.52	0.73
1.333	0.73	4.400	33.63	7.467	2.92	10.53	0.73
1.350	0.73	4.417	33.63	7.483	2.92	10.55	0.73
1.367	0.73	4.433	33.63	7.500	2.92	10.57	0.73
1.383	0.73	4.450	33.63	7.517	2.92	10.58	0.73
1.400	0.73	4.467	33.63	7.533	2.92	10.60	0.73
1.417	0.73	4.483	33.63	7.550	2.92	10.62	0.73
1.433	0.73	4.500	33.63	7.567	2.92	10.63	0.73
1.450	0.73	4.517	33.63	7.583	2.92	10.65	0.73
1.467	0.73	4.533	33.63	7.600	2.92	10.67	0.73
1.483	0.73	4.550	33.63	7.617	2.92	10.68	0.73
1.500	0.73	4.567	33.63	7.633	2.92	10.70	0.73
1.517	0.73	4.583	33.63	7.650	2.92	10.72	0.73
1.533	0.73	4.600	33.63	7.667	2.92	10.73	0.73
1.550	0.73	4.617	33.63	7.683	2.92	10.75	0.73
1.567	0.73	4.633	33.63	7.700	2.92	10.77	0.73
1.583	0.73	4.650	33.63	7.717	2.92	10.78	0.73
1.600	0.73	4.667	33.63	7.733	2.92	10.80	0.73
1.617	0.73	4.683	33.63	7.750	2.92	10.82	0.73
1.633	0.73	4.700	33.63	7.767	2.92	10.83	0.73
1.650	0.73	4.717	33.63	7.783	2.92	10.85	0.73
1.667	0.73	4.733	33.63	7.800	2.92	10.87	0.73
1.683	0.73	4.750	33.63	7.817	2.92	10.88	0.73
1.700	0.73	4.767	33.63	7.833	2.92	10.90	0.73
1.717	0.73	4.783	33.63	7.850	2.92	10.92	0.73
1.733	0.73	4.800	33.63	7.867	2.92	10.93	0.73
1.750	0.73	4.817	33.63	7.883	2.92	10.95	0.73

Pre Development

1.767	0.73	4.833	33.63	7.900	2.92	10.97	0.73
1.783	0.73	4.850	33.63	7.917	2.92	10.98	0.73
1.800	0.73	4.867	33.63	7.933	2.92	11.00	0.73
1.817	0.73	4.883	33.63	7.950	2.92	11.02	0.73
1.833	0.73	4.900	33.63	7.967	2.92	11.03	0.73
1.850	0.73	4.917	33.63	7.983	2.92	11.05	0.73
1.867	0.73	4.933	33.63	8.000	2.92	11.07	0.73
1.883	0.73	4.950	33.63	8.017	2.92	11.08	0.73
1.900	0.73	4.967	33.63	8.033	2.92	11.10	0.73
1.917	0.73	4.983	33.63	8.050	2.92	11.12	0.73
1.933	0.73	5.000	33.63	8.067	2.92	11.13	0.73
1.950	0.73	5.017	33.63	8.083	2.92	11.15	0.73
1.967	0.73	5.033	33.63	8.100	2.92	11.17	0.73
1.983	0.73	5.050	33.63	8.117	2.92	11.18	0.73
2.000	0.73	5.067	33.63	8.133	2.92	11.20	0.73
2.017	0.73	5.083	33.63	8.150	2.92	11.22	0.73
2.033	0.73	5.100	33.63	8.167	2.92	11.23	0.73
2.050	0.73	5.117	33.63	8.183	2.92	11.25	0.73
2.067	0.73	5.133	33.63	8.200	2.92	11.27	0.73
2.083	0.73	5.150	33.63	8.217	2.92	11.28	0.73
2.100	0.73	5.167	33.63	8.233	2.92	11.30	0.73
2.117	0.73	5.183	33.63	8.250	2.92	11.32	0.73
2.133	0.73	5.200	33.63	8.267	1.46	11.33	0.73
2.150	0.73	5.217	33.63	8.283	1.46	11.35	0.73
2.167	0.73	5.233	33.63	8.300	1.46	11.37	0.73
2.183	0.73	5.250	33.61	8.317	1.46	11.38	0.73
2.200	0.73	5.267	9.50	8.333	1.46	11.40	0.73
2.217	0.73	5.283	9.50	8.350	1.46	11.42	0.73
2.233	0.73	5.300	9.50	8.367	1.46	11.43	0.73
2.250	0.73	5.317	9.50	8.383	1.46	11.45	0.73
2.267	4.39	5.333	9.50	8.400	1.46	11.47	0.73
2.283	4.39	5.350	9.50	8.417	1.46	11.48	0.73
2.300	4.39	5.367	9.50	8.433	1.46	11.50	0.73
2.317	4.39	5.383	9.50	8.450	1.46	11.52	0.73
2.333	4.39	5.400	9.50	8.467	1.46	11.53	0.73
2.350	4.39	5.417	9.50	8.483	1.46	11.55	0.73
2.367	4.39	5.433	9.50	8.500	1.46	11.57	0.73
2.383	4.39	5.450	9.50	8.517	1.46	11.58	0.73
2.400	4.39	5.467	9.50	8.533	1.46	11.60	0.73
2.417	4.39	5.483	9.50	8.550	1.46	11.62	0.73
2.433	4.39	5.500	9.50	8.567	1.46	11.63	0.73
2.450	4.39	5.517	9.50	8.583	1.46	11.65	0.73
2.467	4.39	5.533	9.50	8.600	1.46	11.67	0.73
2.483	4.39	5.550	9.50	8.617	1.46	11.68	0.73
2.500	4.39	5.567	9.50	8.633	1.46	11.70	0.73
2.517	4.39	5.583	9.50	8.650	1.46	11.72	0.73
2.533	4.39	5.600	9.50	8.667	1.46	11.73	0.73
2.550	4.39	5.617	9.50	8.683	1.46	11.75	0.73
2.567	4.39	5.633	9.50	8.700	1.46	11.77	0.73
2.583	4.39	5.650	9.50	8.717	1.46	11.78	0.73
2.600	4.39	5.667	9.50	8.733	1.46	11.80	0.73
2.617	4.39	5.683	9.50	8.750	1.46	11.82	0.73
2.633	4.39	5.700	9.50	8.767	1.46	11.83	0.73
2.650	4.39	5.717	9.50	8.783	1.46	11.85	0.73
2.667	4.39	5.733	9.50	8.800	1.46	11.87	0.73
2.683	4.39	5.750	9.50	8.817	1.46	11.88	0.73
2.700	4.39	5.767	9.50	8.833	1.46	11.90	0.73
2.717	4.39	5.783	9.50	8.850	1.46	11.92	0.73
2.733	4.39	5.800	9.50	8.867	1.46	11.93	0.73
2.750	4.39	5.817	9.50	8.883	1.46	11.95	0.73
2.767	4.39	5.833	9.50	8.900	1.46	11.97	0.73
2.783	4.39	5.850	9.50	8.917	1.46	11.98	0.73
2.800	4.39	5.867	9.50	8.933	1.46	12.00	0.73
2.817	4.39	5.883	9.50	8.950	1.46	12.02	0.73
2.833	4.39	5.900	9.50	8.967	1.46	12.03	0.73
2.850	4.39	5.917	9.50	8.983	1.46	12.05	0.73
2.867	4.39	5.933	9.50	9.000	1.46	12.07	0.73
2.883	4.39	5.950	9.50	9.017	1.46	12.08	0.73

2.900	4.39	5.967	9.50	9.033	1.46	12.10	0.73
2.917	4.39	5.983	9.50	9.050	1.46	12.12	0.73
2.933	4.39	6.000	9.50	9.067	1.46	12.13	0.73
2.950	4.39	6.017	9.50	9.083	1.46	12.15	0.73
2.967	4.39	6.033	9.50	9.100	1.46	12.17	0.73
2.983	4.39	6.050	9.50	9.117	1.46	12.18	0.73
3.000	4.39	6.067	9.50	9.133	1.46	12.20	0.73
3.017	4.39	6.083	9.50	9.150	1.46	12.22	0.73
3.033	4.39	6.100	9.50	9.167	1.46	12.23	0.73
3.050	4.39	6.117	9.50	9.183	1.46	12.25	0.73
3.067	4.39	6.133	9.50	9.200	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.88		
over (min)	5.00	7.00		
Storage Coeff. (min)=	4.53 (ii)	6.27 (ii)		
Unit Hyd. Tpeak (min)=	5.00	7.00		
Unit Hyd. peak (cms)=	0.24	0.17		
			TOTALS	
PEAK FLOW (cms)=	0.22	0.00	0.221 (iii)	
TIME TO PEAK (hrs)=	5.23	5.25	5.25	
RUNOFF VOLUME (mm)=	72.10	40.23	71.78	
TOTAL RAINFALL (mm)=	73.10	73.10	73.10	
RUNOFF COEFFICIENT =	0.99	0.55	0.98	

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2011):	4.69	0.437	5.25	71.78
+ ID2= 2 (2012):	2.37	0.221	5.25	71.78
ID = 3 (0201):	7.06	0.658	5.25	71.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.7670	0.2467
	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937
	1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	0.658	5.25	71.78
OUTFLOW: ID= 1 (0902)	7.060	0.650	5.27	62.01

PEAK FLOW REDUCTION [Qout/Qin](%)= 98.83
TIME SHIFT OF PEAK FLOW (min)= 1.00
MAXIMUM STORAGE USED (ha.m.)= 0.2042

Pre Development

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\46ca7ce4
Ptotal= 73.10 mm	Comments: 25 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	12.43	6.75	5.12	10.00	0.73
0.50	0.73	3.75	12.43	7.00	5.12	10.25	0.73
0.75	0.73	4.00	12.43	7.25	5.12	10.50	0.73
1.00	0.73	4.25	12.43	7.50	2.92	10.75	0.73
1.25	0.73	4.50	33.63	7.75	2.92	11.00	0.73
1.50	0.73	4.75	33.63	8.00	2.92	11.25	0.73
1.75	0.73	5.00	33.63	8.25	2.92	11.50	0.73
2.00	0.73	5.25	33.63	8.50	1.46	11.75	0.73
2.25	0.73	5.50	9.50	8.75	1.46	12.00	0.73
2.50	4.39	5.75	9.50	9.00	1.46	12.25	0.73
2.75	4.39	6.00	9.50	9.25	1.46		
3.00	4.39	6.25	9.50	9.50	0.73		
3.25	4.39	6.50	5.12	9.75	0.73		

CALIB		
STANDHYD (0301)	Area (ha)= 6.15	
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.39	6.250	9.50	9.33	0.73
0.167	0.00	3.250	4.39	6.333	5.12	9.42	0.73
0.250	0.00	3.333	12.43	6.417	5.12	9.50	0.73
0.333	0.73	3.417	12.43	6.500	5.12	9.58	0.73
0.417	0.73	3.500	12.43	6.583	5.12	9.67	0.73
0.500	0.73	3.583	12.43	6.667	5.12	9.75	0.73
0.583	0.73	3.667	12.43	6.750	5.12	9.83	0.73
0.667	0.73	3.750	12.43	6.833	5.12	9.92	0.73
0.750	0.73	3.833	12.43	6.917	5.12	10.00	0.73
0.833	0.73	3.917	12.43	7.000	5.12	10.08	0.73
0.917	0.73	4.000	12.43	7.083	5.12	10.17	0.73
1.000	0.73	4.083	12.43	7.167	5.12	10.25	0.73
1.083	0.73	4.167	12.43	7.250	5.12	10.33	0.73
1.167	0.73	4.250	12.43	7.333	2.92	10.42	0.73
1.250	0.73	4.333	33.63	7.417	2.92	10.50	0.73
1.333	0.73	4.417	33.63	7.500	2.92	10.58	0.73
1.417	0.73	4.500	33.63	7.583	2.92	10.67	0.73
1.500	0.73	4.583	33.63	7.667	2.92	10.75	0.73
1.583	0.73	4.667	33.63	7.750	2.92	10.83	0.73
1.667	0.73	4.750	33.63	7.833	2.92	10.92	0.73
1.750	0.73	4.833	33.63	7.917	2.92	11.00	0.73
1.833	0.73	4.917	33.63	8.000	2.92	11.08	0.73
1.917	0.73	5.000	33.63	8.083	2.92	11.17	0.73
2.000	0.73	5.083	33.63	8.167	2.92	11.25	0.73
2.083	0.73	5.167	33.63	8.250	2.92	11.33	0.73
2.167	0.73	5.250	33.63	8.333	1.46	11.42	0.73
2.250	0.73	5.333	9.50	8.417	1.46	11.50	0.73

2.333	4.39	5.417	9.50	8.500	1.46	11.58	0.73
2.417	4.39	5.500	9.50	8.583	1.46	11.67	0.73
2.500	4.39	5.583	9.50	8.667	1.46	11.75	0.73
2.583	4.39	5.667	9.50	8.750	1.46	11.83	0.73
2.667	4.39	5.750	9.50	8.833	1.46	11.92	0.73
2.750	4.39	5.833	9.50	8.917	1.46	12.00	0.73
2.833	4.39	5.917	9.50	9.000	1.46	12.08	0.73
2.917	4.39	6.000	9.50	9.083	1.46	12.17	0.73
3.000	4.39	6.083	9.50	9.167	1.46	12.25	0.73
3.083	4.39	6.167	9.50	9.250	1.46		

Max.Eff.Inten.(mm/hr)=	33.63	24.88	
over (min)	5.00	10.00	
Storage Coeff. (min)=	6.03 (ii)	7.77 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.19	0.13	
			TOTALS
PEAK FLOW (cms)=	0.57	0.00	0.573 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	72.10	40.23	71.78
TOTAL RAINFALL (mm)=	73.10	73.10	73.10
RUNOFF COEFFICIENT =	0.99	0.55	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	0.573	5.25	71.78
OUTFLOW: ID= 1 (0903)	6.150	0.402	5.33	71.77

PEAK FLOW REDUCTION [Qout/Qin](%)= 70.25
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1468

```
       V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\661a9b84-4fd0-4176-8d06-b68522090c62\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\661a9b84-4fd0-4176-8d06-b68522090c62\scena

DATE: 02-03-2020 TIME: 04:44:14

USER:

COMMENTS: _____

```
  ************************************************
  ** SIMULATION : 12hr AES 050-Year             **
  ************************************************
```

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB		
STANDHYD (0401)	Area (ha)= 9.90	
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62

Pre Development

0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81
0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81
0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81
0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81
0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81
1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81
1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81
1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81

Pre Development

1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81
1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81
1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81
1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81
2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81
2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81
2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81
2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81

2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81
2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81
2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81
2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.54	
over (min)	7.00	12.00	
Storage Coeff. (min)=	6.69 (ii)	11.04 (ii)	
Unit Hyd. Tpeak (min)=	7.00	12.00	
Unit Hyd. peak (cms)=	0.17	0.10	
			TOTALS
PEAK FLOW (cms)=	0.92	0.07	0.993 (iii)
TIME TO PEAK (hrs)=	5.25	5.27	5.25
RUNOFF VOLUME (mm)=	79.81	46.78	76.52
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.58	0.95

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	0.993	5.25	76.52
OUTFLOW: ID= 1 (0904)	9.900	0.957	5.28	76.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 96.39
TIME SHIFT OF PEAK FLOW (min)= 2.00
MAXIMUM STORAGE USED (ha.m.)= 0.0910

READ STORM	Filename: C:\Users\wburke\AppD ata\Local\Temp\ 388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB			
NASHYD (0104)	Area (ha)= 43.69	Curve Number (CN)= 80.0	
ID= 1 DT= 5.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.61		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81

1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.798 (i)
TIME TO PEAK (hrs)= 8.083
RUNOFF VOLUME (mm)= 40.471
TOTAL RAINFALL (mm)= 80.820
RUNOFF COEFFICIENT = 0.501

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm | Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB
NASHYD (0102) | Area (ha)= 7.18 Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min | Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.40

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.318 (i)
TIME TO PEAK (hrs)= 5.333
RUNOFF VOLUME (mm)= 33.166
TOTAL RAINFALL (mm)= 80.820
RUNOFF COEFFICIENT = 0.410

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm | Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81

1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB
STANDHYD (0101) | Area (ha)= 1.60
ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=		37.17	35.67
over (min)		5.00	10.00

Storage Coeff. (min)=		3.87 (ii)	5.54 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.25	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.16	0.00	0.165 (iii)
TIME TO PEAK	(hrs)=	5.17	5.25	5.25
RUNOFF VOLUME	(mm)=	79.82	68.37	79.70
TOTAL RAINFALL	(mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT	=	0.99	0.85	0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):		1.60	0.165	5.25	79.70
+ ID2= 2 (0102):		7.18	0.318	5.33	33.17
ID = 3 (0601):		8.78	0.469	5.25	41.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0430	0.2830
0.0000	0.1860	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (	0601)	8.780	0.469	5.25	41.65
OUTFLOW: ID= 1 (	0702)	8.780	0.049	8.50	20.40

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.39
TIME SHIFT OF PEAK FLOW (min)=195.00
MAXIMUM STORAGE USED (ha.m.)= 0.2960

ROUTE CHN(0703)
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME

(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

		<---- hydrograph ---->			<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0702)	8.78	0.05	8.50	20.40	0.19	0.51
OUTFLOW: ID= 1 (0703)	8.78	0.05	8.58	20.40	0.18	0.51

ROUTE CHN(0704) IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

		<---- hydrograph ---->			<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL

	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0703)	8.78	0.05	8.58	20.40	0.06	0.13
OUTFLOW: ID= 1 (0704)	8.78	0.04	10.75	20.34	0.06	0.12

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB STANDHYD (0105) ID= 1 DT= 5.0 min	Area (ha)= 3.13 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81

1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=		37.17	28.55	
over (min)		5.00	10.00	
Storage Coeff. (min)=		4.73 (ii)	6.40 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.22	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.32	0.00	0.322 (iii)
TIME TO PEAK	(hrs)=	5.25	5.25	5.25
RUNOFF VOLUME	(mm)=	79.82	46.79	79.49
TOTAL RAINFALL	(mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT	=	0.99	0.58	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm | Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB STANDHYD (0103) | Area (ha)= 1.83

|ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=		37.17	28.55	
over (min)		5.00	10.00	
Storage Coeff. (min)=		4.03 (ii)	8.38 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.24	0.12	
				TOTALS
PEAK FLOW	(cms)=	0.17	0.01	0.184 (iii)
TIME TO PEAK	(hrs)=	5.17	5.25	5.25
RUNOFF VOLUME	(mm)=	79.82	46.79	76.51
TOTAL RAINFALL	(mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT	=	0.99	0.58	0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0103):		1.83	0.184	5.25	76.51
+ ID2= 2 (0105):		3.13	0.322	5.25	79.49
ID = 3 (0602):		4.96	0.506	5.25	78.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4450	0.1950
	0.0120	0.1170	0.6080	0.2145
	0.0650	0.1365	0.7950	0.2340
	0.1670	0.1560	0.9980	0.2535
	0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	0.506	5.25	78.39
OUTFLOW: ID= 1 (0705)	4.960	0.414	5.25	77.89

PEAK FLOW REDUCTION [Qout/Qin](%)= 81.67
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.1923

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):		43.69	0.798	8.08	40.47
+ ID2= 2 (0704):		8.78	0.040	10.75	20.34
ID = 3 (0901):		52.47	0.825	8.17	37.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0901):		52.47	0.825	8.17	37.10
+ ID2= 2 (0705):		4.96	0.414	5.25	77.89
ID = 1 (0901):		57.43	0.883	8.08	40.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Pre Development

| READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
| Ptotal= 80.82 mm | Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB			
STANDHYD (2011)	Area (ha)=	4.69	
ID= 1 DT= 1.0 min	Total Imp(%)=	99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62
0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81
0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81

Pre Development

0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81
0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81
0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81
1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81
1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81
1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81
1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81
1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81

Pre Development

1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81
1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81
2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81
2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81
2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81
2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81
2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81
2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81

2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81
2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.54	
over (min)	5.00	8.00	
Storage Coeff. (min)=	5.34 (ii)	7.01 (ii)	
Unit Hyd. Tpeak (min)=	5.00	8.00	
Unit Hyd. peak (cms)=	0.22	0.15	
			TOTALS
PEAK FLOW (cms)=	0.48	0.00	0.483 (iii)
TIME TO PEAK (hrs)=	5.23	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	46.79	79.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.58	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm | Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

CALIB | STANDHYD (2012) | ID= 1 DT= 1.0 min | Area (ha)= 2.37 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	4.85	6.150	10.50	9.22	1.62
0.033	0.00	3.100	4.85	6.167	10.50	9.23	1.62
0.050	0.00	3.117	4.85	6.183	10.50	9.25	1.62
0.067	0.00	3.133	4.85	6.200	10.50	9.27	0.81
0.083	0.00	3.150	4.85	6.217	10.50	9.28	0.81
0.100	0.00	3.167	4.85	6.233	10.50	9.30	0.81
0.117	0.00	3.183	4.85	6.250	10.49	9.32	0.81
0.133	0.00	3.200	4.85	6.267	5.66	9.33	0.81
0.150	0.00	3.217	4.85	6.283	5.66	9.35	0.81
0.167	0.00	3.233	4.85	6.300	5.66	9.37	0.81
0.183	0.00	3.250	4.85	6.317	5.66	9.38	0.81
0.200	0.00	3.267	13.74	6.333	5.66	9.40	0.81
0.217	0.00	3.283	13.74	6.350	5.66	9.42	0.81
0.233	0.00	3.300	13.74	6.367	5.66	9.43	0.81
0.250	0.00	3.317	13.74	6.383	5.66	9.45	0.81
0.267	0.81	3.333	13.74	6.400	5.66	9.47	0.81
0.283	0.81	3.350	13.74	6.417	5.66	9.48	0.81
0.300	0.81	3.367	13.74	6.433	5.66	9.50	0.81
0.317	0.81	3.383	13.74	6.450	5.66	9.52	0.81
0.333	0.81	3.400	13.74	6.467	5.66	9.53	0.81
0.350	0.81	3.417	13.74	6.483	5.66	9.55	0.81
0.367	0.81	3.433	13.74	6.500	5.66	9.57	0.81
0.383	0.81	3.450	13.74	6.517	5.66	9.58	0.81
0.400	0.81	3.467	13.74	6.533	5.66	9.60	0.81
0.417	0.81	3.483	13.74	6.550	5.66	9.62	0.81
0.433	0.81	3.500	13.74	6.567	5.66	9.63	0.81
0.450	0.81	3.517	13.74	6.583	5.66	9.65	0.81
0.467	0.81	3.533	13.74	6.600	5.66	9.67	0.81
0.483	0.81	3.550	13.74	6.617	5.66	9.68	0.81
0.500	0.81	3.567	13.74	6.633	5.66	9.70	0.81
0.517	0.81	3.583	13.74	6.650	5.66	9.72	0.81
0.533	0.81	3.600	13.74	6.667	5.66	9.73	0.81
0.550	0.81	3.617	13.74	6.683	5.66	9.75	0.81
0.567	0.81	3.633	13.74	6.700	5.66	9.77	0.81
0.583	0.81	3.650	13.74	6.717	5.66	9.78	0.81
0.600	0.81	3.667	13.74	6.733	5.66	9.80	0.81
0.617	0.81	3.683	13.74	6.750	5.66	9.82	0.81
0.633	0.81	3.700	13.74	6.767	5.66	9.83	0.81
0.650	0.81	3.717	13.74	6.783	5.66	9.85	0.81
0.667	0.81	3.733	13.74	6.800	5.66	9.87	0.81
0.683	0.81	3.750	13.74	6.817	5.66	9.88	0.81
0.700	0.81	3.767	13.74	6.833	5.66	9.90	0.81
0.717	0.81	3.783	13.74	6.850	5.66	9.92	0.81
0.733	0.81	3.800	13.74	6.867	5.66	9.93	0.81
0.750	0.81	3.817	13.74	6.883	5.66	9.95	0.81
0.767	0.81	3.833	13.74	6.900	5.66	9.97	0.81
0.783	0.81	3.850	13.74	6.917	5.66	9.98	0.81
0.800	0.81	3.867	13.74	6.933	5.66	10.00	0.81
0.817	0.81	3.883	13.74	6.950	5.66	10.02	0.81
0.833	0.81	3.900	13.74	6.967	5.66	10.03	0.81
0.850	0.81	3.917	13.74	6.983	5.66	10.05	0.81

Pre Development

0.867	0.81	3.933	13.74	7.000	5.66	10.07	0.81
0.883	0.81	3.950	13.74	7.017	5.66	10.08	0.81
0.900	0.81	3.967	13.74	7.033	5.66	10.10	0.81
0.917	0.81	3.983	13.74	7.050	5.66	10.12	0.81
0.933	0.81	4.000	13.74	7.067	5.66	10.13	0.81
0.950	0.81	4.017	13.74	7.083	5.66	10.15	0.81
0.967	0.81	4.033	13.74	7.100	5.66	10.17	0.81
0.983	0.81	4.050	13.74	7.117	5.66	10.18	0.81
1.000	0.81	4.067	13.74	7.133	5.66	10.20	0.81
1.017	0.81	4.083	13.74	7.150	5.66	10.22	0.81
1.033	0.81	4.100	13.74	7.167	5.66	10.23	0.81
1.050	0.81	4.117	13.74	7.183	5.66	10.25	0.81
1.067	0.81	4.133	13.74	7.200	5.66	10.27	0.81
1.083	0.81	4.150	13.74	7.217	5.66	10.28	0.81
1.100	0.81	4.167	13.74	7.233	5.66	10.30	0.81
1.117	0.81	4.183	13.74	7.250	5.65	10.32	0.81
1.133	0.81	4.200	13.74	7.267	3.23	10.33	0.81
1.150	0.81	4.217	13.74	7.283	3.23	10.35	0.81
1.167	0.81	4.233	13.74	7.300	3.23	10.37	0.81
1.183	0.81	4.250	13.74	7.317	3.23	10.38	0.81
1.200	0.81	4.267	37.17	7.333	3.23	10.40	0.81
1.217	0.81	4.283	37.17	7.350	3.23	10.42	0.81
1.233	0.81	4.300	37.17	7.367	3.23	10.43	0.81
1.250	0.81	4.317	37.17	7.383	3.23	10.45	0.81
1.267	0.81	4.333	37.17	7.400	3.23	10.47	0.81
1.283	0.81	4.350	37.17	7.417	3.23	10.48	0.81
1.300	0.81	4.367	37.17	7.433	3.23	10.50	0.81
1.317	0.81	4.383	37.17	7.450	3.23	10.52	0.81
1.333	0.81	4.400	37.17	7.467	3.23	10.53	0.81
1.350	0.81	4.417	37.17	7.483	3.23	10.55	0.81
1.367	0.81	4.433	37.17	7.500	3.23	10.57	0.81
1.383	0.81	4.450	37.17	7.517	3.23	10.58	0.81
1.400	0.81	4.467	37.17	7.533	3.23	10.60	0.81
1.417	0.81	4.483	37.17	7.550	3.23	10.62	0.81
1.433	0.81	4.500	37.17	7.567	3.23	10.63	0.81
1.450	0.81	4.517	37.17	7.583	3.23	10.65	0.81
1.467	0.81	4.533	37.17	7.600	3.23	10.67	0.81
1.483	0.81	4.550	37.17	7.617	3.23	10.68	0.81
1.500	0.81	4.567	37.17	7.633	3.23	10.70	0.81
1.517	0.81	4.583	37.17	7.650	3.23	10.72	0.81
1.533	0.81	4.600	37.17	7.667	3.23	10.73	0.81
1.550	0.81	4.617	37.17	7.683	3.23	10.75	0.81
1.567	0.81	4.633	37.17	7.700	3.23	10.77	0.81
1.583	0.81	4.650	37.17	7.717	3.23	10.78	0.81
1.600	0.81	4.667	37.17	7.733	3.23	10.80	0.81
1.617	0.81	4.683	37.17	7.750	3.23	10.82	0.81
1.633	0.81	4.700	37.17	7.767	3.23	10.83	0.81
1.650	0.81	4.717	37.17	7.783	3.23	10.85	0.81
1.667	0.81	4.733	37.17	7.800	3.23	10.87	0.81
1.683	0.81	4.750	37.17	7.817	3.23	10.88	0.81
1.700	0.81	4.767	37.17	7.833	3.23	10.90	0.81
1.717	0.81	4.783	37.17	7.850	3.23	10.92	0.81
1.733	0.81	4.800	37.17	7.867	3.23	10.93	0.81
1.750	0.81	4.817	37.17	7.883	3.23	10.95	0.81
1.767	0.81	4.833	37.17	7.900	3.23	10.97	0.81
1.783	0.81	4.850	37.17	7.917	3.23	10.98	0.81
1.800	0.81	4.867	37.17	7.933	3.23	11.00	0.81
1.817	0.81	4.883	37.17	7.950	3.23	11.02	0.81
1.833	0.81	4.900	37.17	7.967	3.23	11.03	0.81
1.850	0.81	4.917	37.17	7.983	3.23	11.05	0.81
1.867	0.81	4.933	37.17	8.000	3.23	11.07	0.81
1.883	0.81	4.950	37.17	8.017	3.23	11.08	0.81
1.900	0.81	4.967	37.17	8.033	3.23	11.10	0.81
1.917	0.81	4.983	37.17	8.050	3.23	11.12	0.81
1.933	0.81	5.000	37.17	8.067	3.23	11.13	0.81
1.950	0.81	5.017	37.17	8.083	3.23	11.15	0.81
1.967	0.81	5.033	37.17	8.100	3.23	11.17	0.81
1.983	0.81	5.050	37.17	8.117	3.23	11.18	0.81

Pre Development

2.000	0.81	5.067	37.17	8.133	3.23	11.20	0.81
2.017	0.81	5.083	37.17	8.150	3.23	11.22	0.81
2.033	0.81	5.100	37.17	8.167	3.23	11.23	0.81
2.050	0.81	5.117	37.17	8.183	3.23	11.25	0.81
2.067	0.81	5.133	37.17	8.200	3.23	11.27	0.81
2.083	0.81	5.150	37.17	8.217	3.23	11.28	0.81
2.100	0.81	5.167	37.17	8.233	3.23	11.30	0.81
2.117	0.81	5.183	37.17	8.250	3.23	11.32	0.81
2.133	0.81	5.200	37.17	8.267	1.62	11.33	0.81
2.150	0.81	5.217	37.17	8.283	1.62	11.35	0.81
2.167	0.81	5.233	37.17	8.300	1.62	11.37	0.81
2.183	0.81	5.250	37.15	8.317	1.62	11.38	0.81
2.200	0.81	5.267	10.50	8.333	1.62	11.40	0.81
2.217	0.81	5.283	10.50	8.350	1.62	11.42	0.81
2.233	0.81	5.300	10.50	8.367	1.62	11.43	0.81
2.250	0.81	5.317	10.50	8.383	1.62	11.45	0.81
2.267	4.85	5.333	10.50	8.400	1.62	11.47	0.81
2.283	4.85	5.350	10.50	8.417	1.62	11.48	0.81
2.300	4.85	5.367	10.50	8.433	1.62	11.50	0.81
2.317	4.85	5.383	10.50	8.450	1.62	11.52	0.81
2.333	4.85	5.400	10.50	8.467	1.62	11.53	0.81
2.350	4.85	5.417	10.50	8.483	1.62	11.55	0.81
2.367	4.85	5.433	10.50	8.500	1.62	11.57	0.81
2.383	4.85	5.450	10.50	8.517	1.62	11.58	0.81
2.400	4.85	5.467	10.50	8.533	1.62	11.60	0.81
2.417	4.85	5.483	10.50	8.550	1.62	11.62	0.81
2.433	4.85	5.500	10.50	8.567	1.62	11.63	0.81
2.450	4.85	5.517	10.50	8.583	1.62	11.65	0.81
2.467	4.85	5.533	10.50	8.600	1.62	11.67	0.81
2.483	4.85	5.550	10.50	8.617	1.62	11.68	0.81
2.500	4.85	5.567	10.50	8.633	1.62	11.70	0.81
2.517	4.85	5.583	10.50	8.650	1.62	11.72	0.81
2.533	4.85	5.600	10.50	8.667	1.62	11.73	0.81
2.550	4.85	5.617	10.50	8.683	1.62	11.75	0.81
2.567	4.85	5.633	10.50	8.700	1.62	11.77	0.81
2.583	4.85	5.650	10.50	8.717	1.62	11.78	0.81
2.600	4.85	5.667	10.50	8.733	1.62	11.80	0.81
2.617	4.85	5.683	10.50	8.750	1.62	11.82	0.81
2.633	4.85	5.700	10.50	8.767	1.62	11.83	0.81
2.650	4.85	5.717	10.50	8.783	1.62	11.85	0.81
2.667	4.85	5.733	10.50	8.800	1.62	11.87	0.81
2.683	4.85	5.750	10.50	8.817	1.62	11.88	0.81
2.700	4.85	5.767	10.50	8.833	1.62	11.90	0.81
2.717	4.85	5.783	10.50	8.850	1.62	11.92	0.81
2.733	4.85	5.800	10.50	8.867	1.62	11.93	0.81
2.750	4.85	5.817	10.50	8.883	1.62	11.95	0.81
2.767	4.85	5.833	10.50	8.900	1.62	11.97	0.81
2.783	4.85	5.850	10.50	8.917	1.62	11.98	0.81
2.800	4.85	5.867	10.50	8.933	1.62	12.00	0.81
2.817	4.85	5.883	10.50	8.950	1.62	12.02	0.81
2.833	4.85	5.900	10.50	8.967	1.62	12.03	0.81
2.850	4.85	5.917	10.50	8.983	1.62	12.05	0.81
2.867	4.85	5.933	10.50	9.000	1.62	12.07	0.81
2.883	4.85	5.950	10.50	9.017	1.62	12.08	0.81
2.900	4.85	5.967	10.50	9.033	1.62	12.10	0.81
2.917	4.85	5.983	10.50	9.050	1.62	12.12	0.81
2.933	4.85	6.000	10.50	9.067	1.62	12.13	0.81
2.950	4.85	6.017	10.50	9.083	1.62	12.15	0.81
2.967	4.85	6.033	10.50	9.100	1.62	12.17	0.81
2.983	4.85	6.050	10.50	9.117	1.62	12.18	0.81
3.000	4.85	6.067	10.50	9.133	1.62	12.20	0.81
3.017	4.85	6.083	10.50	9.150	1.62	12.22	0.81
3.033	4.85	6.100	10.50	9.167	1.62	12.23	0.81
3.050	4.85	6.117	10.50	9.183	1.62	12.25	0.81
3.067	4.85	6.133	10.50	9.200	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.54	
over (min)	5.00	7.00	

Pre Development

Storage Coeff. (min)=	4.35 (ii)	6.02 (ii)	
Unit Hyd. Tpeak (min)=	5.00	7.00	
Unit Hyd. peak (cms)=	0.25	0.18	
			TOTALS
PEAK FLOW (cms)=	0.24	0.00	0.244 (iii)
TIME TO PEAK (hrs)=	5.23	5.25	5.25
RUNOFF VOLUME (mm)=	79.81	46.79	79.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.58	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (2011):	4.69	0.483	5.25	79.49
	+ ID2= 2 (2012):	2.37	0.244	5.25	79.49
	ID = 3 (0201):	7.06	0.727	5.25	79.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.7670	0.2467
	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937
	1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	0.727	5.25	79.49
OUTFLOW: ID= 1 (0902)	7.060	0.723	5.25	69.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 99.46
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.2075

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\2a34a1d4
Ptotal= 80.82 mm	Comments: 50 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	13.74	6.75	5.66	10.00	0.81
0.50	0.81	3.75	13.74	7.00	5.66	10.25	0.81
0.75	0.81	4.00	13.74	7.25	5.66	10.50	0.81
1.00	0.81	4.25	13.74	7.50	3.23	10.75	0.81
1.25	0.81	4.50	37.17	7.75	3.23	11.00	0.81
1.50	0.81	4.75	37.17	8.00	3.23	11.25	0.81
1.75	0.81	5.00	37.17	8.25	3.23	11.50	0.81
2.00	0.81	5.25	37.17	8.50	1.62	11.75	0.81
2.25	0.81	5.50	10.50	8.75	1.62	12.00	0.81
2.50	4.85	5.75	10.50	9.00	1.62	12.25	0.81
2.75	4.85	6.00	10.50	9.25	1.62		
3.00	4.85	6.25	10.50	9.50	0.81		
3.25	4.85	6.50	5.66	9.75	0.81		

Pre Development

CALIB		
STANDHYD (0301)	Area (ha)=	6.15
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	4.85	6.250	10.50	9.33	0.81
0.167	0.00	3.250	4.85	6.333	5.66	9.42	0.81
0.250	0.00	3.333	13.74	6.417	5.66	9.50	0.81
0.333	0.81	3.417	13.74	6.500	5.66	9.58	0.81
0.417	0.81	3.500	13.74	6.583	5.66	9.67	0.81
0.500	0.81	3.583	13.74	6.667	5.66	9.75	0.81
0.583	0.81	3.667	13.74	6.750	5.66	9.83	0.81
0.667	0.81	3.750	13.74	6.833	5.66	9.92	0.81
0.750	0.81	3.833	13.74	6.917	5.66	10.00	0.81
0.833	0.81	3.917	13.74	7.000	5.66	10.08	0.81
0.917	0.81	4.000	13.74	7.083	5.66	10.17	0.81
1.000	0.81	4.083	13.74	7.167	5.66	10.25	0.81
1.083	0.81	4.167	13.74	7.250	5.66	10.33	0.81
1.167	0.81	4.250	13.74	7.333	3.23	10.42	0.81
1.250	0.81	4.333	37.17	7.417	3.23	10.50	0.81
1.333	0.81	4.417	37.17	7.500	3.23	10.58	0.81
1.417	0.81	4.500	37.17	7.583	3.23	10.67	0.81
1.500	0.81	4.583	37.17	7.667	3.23	10.75	0.81
1.583	0.81	4.667	37.17	7.750	3.23	10.83	0.81
1.667	0.81	4.750	37.17	7.833	3.23	10.92	0.81
1.750	0.81	4.833	37.17	7.917	3.23	11.00	0.81
1.833	0.81	4.917	37.17	8.000	3.23	11.08	0.81
1.917	0.81	5.000	37.17	8.083	3.23	11.17	0.81
2.000	0.81	5.083	37.17	8.167	3.23	11.25	0.81
2.083	0.81	5.167	37.17	8.250	3.23	11.33	0.81
2.167	0.81	5.250	37.17	8.333	1.62	11.42	0.81
2.250	0.81	5.333	10.50	8.417	1.62	11.50	0.81
2.333	4.85	5.417	10.50	8.500	1.62	11.58	0.81
2.417	4.85	5.500	10.50	8.583	1.62	11.67	0.81
2.500	4.85	5.583	10.50	8.667	1.62	11.75	0.81
2.583	4.85	5.667	10.50	8.750	1.62	11.83	0.81
2.667	4.85	5.750	10.50	8.833	1.62	11.92	0.81
2.750	4.85	5.833	10.50	8.917	1.62	12.00	0.81
2.833	4.85	5.917	10.50	9.000	1.62	12.08	0.81
2.917	4.85	6.000	10.50	9.083	1.62	12.17	0.81
3.000	4.85	6.083	10.50	9.167	1.62	12.25	0.81
3.083	4.85	6.167	10.50	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	37.17	28.55	
over (min)	5.00	10.00	
Storage Coeff. (min)=	5.80 (ii)	7.46 (ii)	

Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.20	0.13	
		TOTALS	
PEAK FLOW (cms)=	0.63	0.00	0.633 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	79.82	46.79	79.49
TOTAL RAINFALL (mm)=	80.82	80.82	80.82
RUNOFF COEFFICIENT =	0.99	0.58	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	0.633	5.25	79.49
OUTFLOW: ID= 1 (0903)	6.150	0.445	5.33	79.48

PEAK FLOW REDUCTION [Qout/Qin](%)= 70.33
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1626

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V V I SSSSS U U A L (v 5.1.2002)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\775d9ab8-cd73-45e2-9102-04e855db5359\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\775d9ab8-cd73-45e2-9102-04e855db5359\scena

DATE: 02-03-2020 TIME: 04:44:14

USER:

COMMENTS: _____

****
** SIMULATION : 12hr AES 100-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB STANDHYD (0401) ID= 1 DT= 1.0 min	Area (ha)= 9.90	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89

Pre Development

0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89
0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89
0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89
0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89
0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89
0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89
1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89
1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89

Pre Development

1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89
1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89
1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89
1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89
1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89
2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89
2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89
2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89

2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89
2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89
2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89
3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.23	
over (min)	6.00	11.00	
Storage Coeff. (min)=	6.45 (ii)	10.64 (ii)	
Unit Hyd. Tpeak (min)=	6.00	11.00	
Unit Hyd. peak (cms)=	0.18	0.11	
			TOTALS
PEAK FLOW (cms)=	1.01	0.08	1.091 (iii)
TIME TO PEAK (hrs)=	5.25	5.27	5.25
RUNOFF VOLUME (mm)=	87.53	53.48	84.13
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.60	0.95

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	1.091	5.25	84.13
OUTFLOW: ID= 1 (0904)	9.900	1.054	5.28	84.13

PEAK FLOW REDUCTION [Qout/Qin](%)= 96.55
TIME SHIFT OF PEAK FLOW (min)= 2.00

MAXIMUM STORAGE USED (ha.m.)= 0.1001

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB			
NASHYD (0104)	Area (ha)= 43.69	Curve Number (CN)= 80.0	
ID= 1 DT= 5.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.61		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89

2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.922 (i)
TIME TO PEAK (hrs)= 8.083
RUNOFF VOLUME (mm)= 46.650
TOTAL RAINFALL (mm)= 88.540
RUNOFF COEFFICIENT = 0.527

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm | Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB | NASHYD (0102) | ID= 1 DT= 5.0 min | Area (ha)= 7.18 | Curve Number (CN)= 73.0 | Ia (mm)= 6.00 | # of Linear Res.(N)= 3.00 | U.H. Tp(hrs)= 0.40

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89

Pre Development

0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.371 (i)
TIME TO PEAK (hrs)= 5.333
RUNOFF VOLUME (mm)= 38.598
TOTAL RAINFALL (mm)= 88.540
RUNOFF COEFFICIENT = 0.436

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm | Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB | STANDHYD (0101) | ID= 1 DT= 5.0 min | Area (ha)= 1.60 | Total Imp(%)= 99.00 | Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=		40.71	39.30	
over (min)		5.00	10.00	
Storage Coeff. (min)=		3.73 (ii)	5.34 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.25	0.16	
				TOTALS
PEAK FLOW	(cms)=	0.18	0.00	0.181 (iii)
TIME TO PEAK	(hrs)=	5.08	5.25	5.25
RUNOFF VOLUME	(mm)=	87.54	75.94	87.42
TOTAL RAINFALL	(mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT	=	0.99	0.86	0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	1.60	0.181	5.25	87.42
+ ID2= 2 (0102):	7.18	0.371	5.33	38.60
ID = 3 (0601):	8.78	0.536	5.25	47.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0430	0.2830
0.0000	0.1860	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (	0601)	8.780	0.536	5.25	47.50
OUTFLOW: ID= 1 (	0702)	8.780	0.063	8.33	26.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.72
TIME SHIFT OF PEAK FLOW (min)=185.00
MAXIMUM STORAGE USED (ha.m.)= 0.3279

ROUTE CHN(0703)
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37

0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	<---- hydrograph ---->				<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0702)	8.78	0.06	8.33	26.25	0.20	0.56
OUTFLOW: ID= 1 (0703)	8.78	0.06	8.42	26.24	0.20	0.56

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<---------- DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ---->				<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0703)	8.78	0.06	8.42	26.24	0.07	0.15
OUTFLOW: ID= 1 (0704)	8.78	0.05	10.08	26.19	0.06	0.14

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB	
STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89

2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.23	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.56 (ii)	6.17 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.23	0.15	
			TOTALS
PEAK FLOW (cms)=	0.35	0.00	0.353 (iii)
TIME TO PEAK (hrs)=	5.25	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	53.49	87.20
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.60	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm | Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB | STANDHYD (0103) | Area (ha)= 1.83
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Pre Development

Max.Eff.Inten.(mm/hr)=	40.71	32.23	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.88 (ii)	8.08 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.25	0.13	
			TOTALS
PEAK FLOW (cms)=	0.19	0.02	0.202 (iii)
TIME TO PEAK (hrs)=	5.17	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	53.49	84.13
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.60	0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602) | 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0103):	1.83	0.202	5.25	84.13
+ ID2= 2 (0105):	3.13	0.353	5.25	87.20

ID = 3 (0602): 4.96 0.555 5.25 86.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4450	0.1950
	0.0120	0.1170	0.6080	0.2145
	0.0650	0.1365	0.7950	0.2340
	0.1670	0.1560	0.9980	0.2535
	0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	0.555	5.25	86.07
OUTFLOW: ID= 1 (0705)	4.960	0.475	5.25	85.57

PEAK FLOW REDUCTION [Qout/Qin](%)= 85.61
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.1998

ADD HYD (0901)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	43.69	0.922	8.08	46.65
+ ID2= 2 (0704):	8.78	0.053	10.08	26.19
ID = 3 (0901):	52.47	0.961	8.17	43.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)					
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0901):	52.47	0.961	8.17	43.23
+ ID2= 2 (0705):	4.96	0.475	5.25	85.57
ID = 1 (0901):	57.43	1.023	8.08	46.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

Pre Development

CALIB		
STANDHYD (2011)	Area (ha)= 4.69	
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89
0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89
0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89

Pre Development

0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89
0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89
0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89
0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89
1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89
1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89
1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89
1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89

Pre Development

1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89
1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89
1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89
2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89
2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89
2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89
2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89
2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89

2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89
3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.23	
over (min)	5.00	7.00	
Storage Coeff. (min)=	5.15 (ii)	6.76 (ii)	
Unit Hyd. Tpeak (min)=	5.00	7.00	
Unit Hyd. peak (cms)=	0.22	0.17	
			TOTALS
PEAK FLOW (cms)=	0.53	0.00	0.529 (iii)
TIME TO PEAK (hrs)=	5.23	5.25	5.25
RUNOFF VOLUME (mm)=	87.54	53.49	87.20
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.60	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB	
STANDHYD (2012)	Area (ha)= 2.37
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	0.00	3.083	5.31	6.150	11.51	9.22	1.77
0.033	0.00	3.100	5.31	6.167	11.51	9.23	1.77
0.050	0.00	3.117	5.31	6.183	11.51	9.25	1.77
0.067	0.00	3.133	5.31	6.200	11.51	9.27	0.89
0.083	0.00	3.150	5.31	6.217	11.51	9.28	0.89
0.100	0.00	3.167	5.31	6.233	11.51	9.30	0.89
0.117	0.00	3.183	5.31	6.250	11.50	9.32	0.89
0.133	0.00	3.200	5.31	6.267	6.20	9.33	0.89
0.150	0.00	3.217	5.31	6.283	6.20	9.35	0.89
0.167	0.00	3.233	5.31	6.300	6.20	9.37	0.89
0.183	0.00	3.250	5.31	6.317	6.20	9.38	0.89
0.200	0.00	3.267	15.05	6.333	6.20	9.40	0.89
0.217	0.00	3.283	15.05	6.350	6.20	9.42	0.89
0.233	0.00	3.300	15.05	6.367	6.20	9.43	0.89
0.250	0.00	3.317	15.05	6.383	6.20	9.45	0.89
0.267	0.89	3.333	15.05	6.400	6.20	9.47	0.89
0.283	0.89	3.350	15.05	6.417	6.20	9.48	0.89
0.300	0.89	3.367	15.05	6.433	6.20	9.50	0.89
0.317	0.89	3.383	15.05	6.450	6.20	9.52	0.89
0.333	0.89	3.400	15.05	6.467	6.20	9.53	0.89
0.350	0.89	3.417	15.05	6.483	6.20	9.55	0.89
0.367	0.89	3.433	15.05	6.500	6.20	9.57	0.89
0.383	0.89	3.450	15.05	6.517	6.20	9.58	0.89
0.400	0.89	3.467	15.05	6.533	6.20	9.60	0.89
0.417	0.89	3.483	15.05	6.550	6.20	9.62	0.89
0.433	0.89	3.500	15.05	6.567	6.20	9.63	0.89
0.450	0.89	3.517	15.05	6.583	6.20	9.65	0.89
0.467	0.89	3.533	15.05	6.600	6.20	9.67	0.89
0.483	0.89	3.550	15.05	6.617	6.20	9.68	0.89
0.500	0.89	3.567	15.05	6.633	6.20	9.70	0.89
0.517	0.89	3.583	15.05	6.650	6.20	9.72	0.89
0.533	0.89	3.600	15.05	6.667	6.20	9.73	0.89
0.550	0.89	3.617	15.05	6.683	6.20	9.75	0.89
0.567	0.89	3.633	15.05	6.700	6.20	9.77	0.89
0.583	0.89	3.650	15.05	6.717	6.20	9.78	0.89
0.600	0.89	3.667	15.05	6.733	6.20	9.80	0.89
0.617	0.89	3.683	15.05	6.750	6.20	9.82	0.89
0.633	0.89	3.700	15.05	6.767	6.20	9.83	0.89
0.650	0.89	3.717	15.05	6.783	6.20	9.85	0.89
0.667	0.89	3.733	15.05	6.800	6.20	9.87	0.89
0.683	0.89	3.750	15.05	6.817	6.20	9.88	0.89
0.700	0.89	3.767	15.05	6.833	6.20	9.90	0.89
0.717	0.89	3.783	15.05	6.850	6.20	9.92	0.89
0.733	0.89	3.800	15.05	6.867	6.20	9.93	0.89
0.750	0.89	3.817	15.05	6.883	6.20	9.95	0.89
0.767	0.89	3.833	15.05	6.900	6.20	9.97	0.89
0.783	0.89	3.850	15.05	6.917	6.20	9.98	0.89
0.800	0.89	3.867	15.05	6.933	6.20	10.00	0.89
0.817	0.89	3.883	15.05	6.950	6.20	10.02	0.89
0.833	0.89	3.900	15.05	6.967	6.20	10.03	0.89
0.850	0.89	3.917	15.05	6.983	6.20	10.05	0.89
0.867	0.89	3.933	15.05	7.000	6.20	10.07	0.89
0.883	0.89	3.950	15.05	7.017	6.20	10.08	0.89
0.900	0.89	3.967	15.05	7.033	6.20	10.10	0.89
0.917	0.89	3.983	15.05	7.050	6.20	10.12	0.89
0.933	0.89	4.000	15.05	7.067	6.20	10.13	0.89
0.950	0.89	4.017	15.05	7.083	6.20	10.15	0.89
0.967	0.89	4.033	15.05	7.100	6.20	10.17	0.89
0.983	0.89	4.050	15.05	7.117	6.20	10.18	0.89
1.000	0.89	4.067	15.05	7.133	6.20	10.20	0.89
1.017	0.89	4.083	15.05	7.150	6.20	10.22	0.89
1.033	0.89	4.100	15.05	7.167	6.20	10.23	0.89
1.050	0.89	4.117	15.05	7.183	6.20	10.25	0.89
1.067	0.89	4.133	15.05	7.200	6.20	10.27	0.89
1.083	0.89	4.150	15.05	7.217	6.20	10.28	0.89

1.100	0.89	4.167	15.05	7.233	6.20	10.30	0.89
1.117	0.89	4.183	15.05	7.250	6.19	10.32	0.89
1.133	0.89	4.200	15.05	7.267	3.54	10.33	0.89
1.150	0.89	4.217	15.05	7.283	3.54	10.35	0.89
1.167	0.89	4.233	15.05	7.300	3.54	10.37	0.89
1.183	0.89	4.250	15.05	7.317	3.54	10.38	0.89
1.200	0.89	4.267	40.71	7.333	3.54	10.40	0.89
1.217	0.89	4.283	40.71	7.350	3.54	10.42	0.89
1.233	0.89	4.300	40.71	7.367	3.54	10.43	0.89
1.250	0.89	4.317	40.71	7.383	3.54	10.45	0.89
1.267	0.89	4.333	40.71	7.400	3.54	10.47	0.89
1.283	0.89	4.350	40.71	7.417	3.54	10.48	0.89
1.300	0.89	4.367	40.71	7.433	3.54	10.50	0.89
1.317	0.89	4.383	40.71	7.450	3.54	10.52	0.89
1.333	0.89	4.400	40.71	7.467	3.54	10.53	0.89
1.350	0.89	4.417	40.71	7.483	3.54	10.55	0.89
1.367	0.89	4.433	40.71	7.500	3.54	10.57	0.89
1.383	0.89	4.450	40.71	7.517	3.54	10.58	0.89
1.400	0.89	4.467	40.71	7.533	3.54	10.60	0.89
1.417	0.89	4.483	40.71	7.550	3.54	10.62	0.89
1.433	0.89	4.500	40.71	7.567	3.54	10.63	0.89
1.450	0.89	4.517	40.71	7.583	3.54	10.65	0.89
1.467	0.89	4.533	40.71	7.600	3.54	10.67	0.89
1.483	0.89	4.550	40.71	7.617	3.54	10.68	0.89
1.500	0.89	4.567	40.71	7.633	3.54	10.70	0.89
1.517	0.89	4.583	40.71	7.650	3.54	10.72	0.89
1.533	0.89	4.600	40.71	7.667	3.54	10.73	0.89
1.550	0.89	4.617	40.71	7.683	3.54	10.75	0.89
1.567	0.89	4.633	40.71	7.700	3.54	10.77	0.89
1.583	0.89	4.650	40.71	7.717	3.54	10.78	0.89
1.600	0.89	4.667	40.71	7.733	3.54	10.80	0.89
1.617	0.89	4.683	40.71	7.750	3.54	10.82	0.89
1.633	0.89	4.700	40.71	7.767	3.54	10.83	0.89
1.650	0.89	4.717	40.71	7.783	3.54	10.85	0.89
1.667	0.89	4.733	40.71	7.800	3.54	10.87	0.89
1.683	0.89	4.750	40.71	7.817	3.54	10.88	0.89
1.700	0.89	4.767	40.71	7.833	3.54	10.90	0.89
1.717	0.89	4.783	40.71	7.850	3.54	10.92	0.89
1.733	0.89	4.800	40.71	7.867	3.54	10.93	0.89
1.750	0.89	4.817	40.71	7.883	3.54	10.95	0.89
1.767	0.89	4.833	40.71	7.900	3.54	10.97	0.89
1.783	0.89	4.850	40.71	7.917	3.54	10.98	0.89
1.800	0.89	4.867	40.71	7.933	3.54	11.00	0.89
1.817	0.89	4.883	40.71	7.950	3.54	11.02	0.89
1.833	0.89	4.900	40.71	7.967	3.54	11.03	0.89
1.850	0.89	4.917	40.71	7.983	3.54	11.05	0.89
1.867	0.89	4.933	40.71	8.000	3.54	11.07	0.89
1.883	0.89	4.950	40.71	8.017	3.54	11.08	0.89
1.900	0.89	4.967	40.71	8.033	3.54	11.10	0.89
1.917	0.89	4.983	40.71	8.050	3.54	11.12	0.89
1.933	0.89	5.000	40.71	8.067	3.54	11.13	0.89
1.950	0.89	5.017	40.71	8.083	3.54	11.15	0.89
1.967	0.89	5.033	40.71	8.100	3.54	11.17	0.89
1.983	0.89	5.050	40.71	8.117	3.54	11.18	0.89
2.000	0.89	5.067	40.71	8.133	3.54	11.20	0.89
2.017	0.89	5.083	40.71	8.150	3.54	11.22	0.89
2.033	0.89	5.100	40.71	8.167	3.54	11.23	0.89
2.050	0.89	5.117	40.71	8.183	3.54	11.25	0.89
2.067	0.89	5.133	40.71	8.200	3.54	11.27	0.89
2.083	0.89	5.150	40.71	8.217	3.54	11.28	0.89
2.100	0.89	5.167	40.71	8.233	3.54	11.30	0.89
2.117	0.89	5.183	40.71	8.250	3.54	11.32	0.89
2.133	0.89	5.200	40.71	8.267	1.77	11.33	0.89
2.150	0.89	5.217	40.71	8.283	1.77	11.35	0.89
2.167	0.89	5.233	40.71	8.300	1.77	11.37	0.89
2.183	0.89	5.250	40.69	8.317	1.77	11.38	0.89
2.200	0.89	5.267	11.51	8.333	1.77	11.40	0.89
2.217	0.89	5.283	11.51	8.350	1.77	11.42	0.89

Pre Development

2.233	0.89	5.300	11.51	8.367	1.77	11.43	0.89
2.250	0.89	5.317	11.51	8.383	1.77	11.45	0.89
2.267	5.31	5.333	11.51	8.400	1.77	11.47	0.89
2.283	5.31	5.350	11.51	8.417	1.77	11.48	0.89
2.300	5.31	5.367	11.51	8.433	1.77	11.50	0.89
2.317	5.31	5.383	11.51	8.450	1.77	11.52	0.89
2.333	5.31	5.400	11.51	8.467	1.77	11.53	0.89
2.350	5.31	5.417	11.51	8.483	1.77	11.55	0.89
2.367	5.31	5.433	11.51	8.500	1.77	11.57	0.89
2.383	5.31	5.450	11.51	8.517	1.77	11.58	0.89
2.400	5.31	5.467	11.51	8.533	1.77	11.60	0.89
2.417	5.31	5.483	11.51	8.550	1.77	11.62	0.89
2.433	5.31	5.500	11.51	8.567	1.77	11.63	0.89
2.450	5.31	5.517	11.51	8.583	1.77	11.65	0.89
2.467	5.31	5.533	11.51	8.600	1.77	11.67	0.89
2.483	5.31	5.550	11.51	8.617	1.77	11.68	0.89
2.500	5.31	5.567	11.51	8.633	1.77	11.70	0.89
2.517	5.31	5.583	11.51	8.650	1.77	11.72	0.89
2.533	5.31	5.600	11.51	8.667	1.77	11.73	0.89
2.550	5.31	5.617	11.51	8.683	1.77	11.75	0.89
2.567	5.31	5.633	11.51	8.700	1.77	11.77	0.89
2.583	5.31	5.650	11.51	8.717	1.77	11.78	0.89
2.600	5.31	5.667	11.51	8.733	1.77	11.80	0.89
2.617	5.31	5.683	11.51	8.750	1.77	11.82	0.89
2.633	5.31	5.700	11.51	8.767	1.77	11.83	0.89
2.650	5.31	5.717	11.51	8.783	1.77	11.85	0.89
2.667	5.31	5.733	11.51	8.800	1.77	11.87	0.89
2.683	5.31	5.750	11.51	8.817	1.77	11.88	0.89
2.700	5.31	5.767	11.51	8.833	1.77	11.90	0.89
2.717	5.31	5.783	11.51	8.850	1.77	11.92	0.89
2.733	5.31	5.800	11.51	8.867	1.77	11.93	0.89
2.750	5.31	5.817	11.51	8.883	1.77	11.95	0.89
2.767	5.31	5.833	11.51	8.900	1.77	11.97	0.89
2.783	5.31	5.850	11.51	8.917	1.77	11.98	0.89
2.800	5.31	5.867	11.51	8.933	1.77	12.00	0.89
2.817	5.31	5.883	11.51	8.950	1.77	12.02	0.89
2.833	5.31	5.900	11.51	8.967	1.77	12.03	0.89
2.850	5.31	5.917	11.51	8.983	1.77	12.05	0.89
2.867	5.31	5.933	11.51	9.000	1.77	12.07	0.89
2.883	5.31	5.950	11.51	9.017	1.77	12.08	0.89
2.900	5.31	5.967	11.51	9.033	1.77	12.10	0.89
2.917	5.31	5.983	11.51	9.050	1.77	12.12	0.89
2.933	5.31	6.000	11.51	9.067	1.77	12.13	0.89
2.950	5.31	6.017	11.51	9.083	1.77	12.15	0.89
2.967	5.31	6.033	11.51	9.100	1.77	12.17	0.89
2.983	5.31	6.050	11.51	9.117	1.77	12.18	0.89
3.000	5.31	6.067	11.51	9.133	1.77	12.20	0.89
3.017	5.31	6.083	11.51	9.150	1.77	12.22	0.89
3.033	5.31	6.100	11.51	9.167	1.77	12.23	0.89
3.050	5.31	6.117	11.51	9.183	1.77	12.25	0.89
3.067	5.31	6.133	11.51	9.200	1.77		

Max.Eff.Inten.(mm/hr)=	40.71	32.23	
over (min)	5.00	6.00	
Storage Coeff. (min)=	4.20 (ii)	5.81 (ii)	
Unit Hyd. Tpeak (min)=	5.00	6.00	
Unit Hyd. peak (cms)=	0.25	0.19	
			TOTALS
PEAK FLOW (cms)=	0.27	0.00	0.267 (iii)
TIME TO PEAK (hrs)=	5.23	5.25	5.25
RUNOFF VOLUME (mm)=	87.53	53.49	87.20
TOTAL RAINFALL (mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT =	0.99	0.60	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2011):		4.69	0.529	5.25	87.20
+ ID2= 2 (2012):		2.37	0.267	5.25	87.20
ID = 3 (0201):		7.06	0.797	5.25	87.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.7670	0.2467
	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937
	1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	0.797	5.25	87.20
OUTFLOW: ID= 1 (0902)	7.060	0.794	5.25	77.34

PEAK FLOW REDUCTION [Qout/Qin](%)= 99.69
TIME SHIFT OF PEAK FLOW (min)= 0.00
MAXIMUM STORAGE USED (ha.m.)= 0.2106

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\7feeded2
Ptotal= 88.54 mm	Comments: 100 Year 12 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.00	3.50	15.05	6.75	6.20	10.00	0.89
0.50	0.89	3.75	15.05	7.00	6.20	10.25	0.89
0.75	0.89	4.00	15.05	7.25	6.20	10.50	0.89
1.00	0.89	4.25	15.05	7.50	3.54	10.75	0.89
1.25	0.89	4.50	40.71	7.75	3.54	11.00	0.89
1.50	0.89	4.75	40.71	8.00	3.54	11.25	0.89
1.75	0.89	5.00	40.71	8.25	3.54	11.50	0.89
2.00	0.89	5.25	40.71	8.50	1.77	11.75	0.89
2.25	0.89	5.50	11.51	8.75	1.77	12.00	0.89
2.50	5.31	5.75	11.51	9.00	1.77	12.25	0.89
2.75	5.31	6.00	11.51	9.25	1.77		
3.00	5.31	6.25	11.51	9.50	0.89		
3.25	5.31	6.50	6.20	9.75	0.89		

CALIB		
STANDHYD (0301)	Area (ha)=	6.15
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	5.31	6.250	11.51	9.33	0.89
0.167	0.00	3.250	5.31	6.333	6.20	9.42	0.89
0.250	0.00	3.333	15.05	6.417	6.20	9.50	0.89
0.333	0.89	3.417	15.05	6.500	6.20	9.58	0.89
0.417	0.89	3.500	15.05	6.583	6.20	9.67	0.89
0.500	0.89	3.583	15.05	6.667	6.20	9.75	0.89
0.583	0.89	3.667	15.05	6.750	6.20	9.83	0.89
0.667	0.89	3.750	15.05	6.833	6.20	9.92	0.89
0.750	0.89	3.833	15.05	6.917	6.20	10.00	0.89
0.833	0.89	3.917	15.05	7.000	6.20	10.08	0.89
0.917	0.89	4.000	15.05	7.083	6.20	10.17	0.89
1.000	0.89	4.083	15.05	7.167	6.20	10.25	0.89
1.083	0.89	4.167	15.05	7.250	6.20	10.33	0.89
1.167	0.89	4.250	15.05	7.333	3.54	10.42	0.89
1.250	0.89	4.333	40.71	7.417	3.54	10.50	0.89
1.333	0.89	4.417	40.71	7.500	3.54	10.58	0.89
1.417	0.89	4.500	40.71	7.583	3.54	10.67	0.89
1.500	0.89	4.583	40.71	7.667	3.54	10.75	0.89
1.583	0.89	4.667	40.71	7.750	3.54	10.83	0.89
1.667	0.89	4.750	40.71	7.833	3.54	10.92	0.89
1.750	0.89	4.833	40.71	7.917	3.54	11.00	0.89
1.833	0.89	4.917	40.71	8.000	3.54	11.08	0.89
1.917	0.89	5.000	40.71	8.083	3.54	11.17	0.89
2.000	0.89	5.083	40.71	8.167	3.54	11.25	0.89
2.083	0.89	5.167	40.71	8.250	3.54	11.33	0.89
2.167	0.89	5.250	40.71	8.333	1.77	11.42	0.89
2.250	0.89	5.333	11.51	8.417	1.77	11.50	0.89
2.333	5.31	5.417	11.51	8.500	1.77	11.58	0.89
2.417	5.31	5.500	11.51	8.583	1.77	11.67	0.89
2.500	5.31	5.583	11.51	8.667	1.77	11.75	0.89
2.583	5.31	5.667	11.51	8.750	1.77	11.83	0.89
2.667	5.31	5.750	11.51	8.833	1.77	11.92	0.89
2.750	5.31	5.833	11.51	8.917	1.77	12.00	0.89
2.833	5.31	5.917	11.51	9.000	1.77	12.08	0.89
2.917	5.31	6.000	11.51	9.083	1.77	12.17	0.89
3.000	5.31	6.083	11.51	9.167	1.77	12.25	0.89
3.083	5.31	6.167	11.51	9.250	1.77		

Max.Eff.Inten.(mm/hr)=		40.71	32.23	
over (min)		5.00	10.00	
Storage Coeff. (min)=		5.59 (ii)	7.20 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.20	0.14	
				TOTALS
PEAK FLOW	(cms)=	0.69	0.01	0.694 (iii)
TIME TO PEAK	(hrs)=	5.25	5.25	5.25
RUNOFF VOLUME	(mm)=	87.54	53.49	87.20
TOTAL RAINFALL	(mm)=	88.54	88.54	88.54
RUNOFF COEFFICIENT	=	0.99	0.60	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)						
IN= 2---> OUT= 1						
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)		
	0.0000	0.0000	0.6480	0.2350		

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	0.694	5.25	87.20
OUTFLOW: ID= 1 (0903)	6.150	0.488	5.33	87.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 70.40
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1785

V V I SSSSS U U A L (v 5.1.2002)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\b88fa036-9912-4998-bfd0-1d984af2a942\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\b88fa036-9912-4998-bfd0-1d984af2a942\scena

DATE: 02-03-2020 TIME: 04:44:13

USER:

COMMENTS: _____

** SIMULATION : 1hr AES 002-Year **

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\

Ptotal= 23.80 mm	388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32 Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
STANDHYD (0401)	Area (ha)= 9.90
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86
0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

Max.Eff.Inten.(mm/hr)=		79.97	13.68	
over (min)		5.00	9.00	
Storage Coeff. (min)=		4.92 (ii)	8.13 (ii)	
Unit Hyd. Tpeak (min)=		5.00	9.00	
Unit Hyd. peak (cms)=		0.23	0.13	
				TOTALS
PEAK FLOW	(cms)=	1.45	0.03	1.459 (iii)
TIME TO PEAK	(hrs)=	0.47	0.68	0.47
RUNOFF VOLUME	(mm)=	22.80	5.06	21.03
TOTAL RAINFALL	(mm)=	23.80	23.80	23.80
RUNOFF COEFFICIENT	=	0.96	0.21	0.88

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)	
IN= 2---> OUT= 1	

DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	1.459	0.47	21.03
OUTFLOW: ID= 1 (0904)	9.900	0.847	0.67	21.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 58.04
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.0805

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
NASHYD (0104)	Area (ha)= 43.69 Curve Number (CN)= 80.0
ID= 1 DT= 5.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.098 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 3.898
TOTAL RAINFALL (mm)= 23.802
RUNOFF COEFFICIENT = 0.164

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
NASHYD (0102)	Area (ha)= 7.18 Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.40

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.066 (i)
TIME TO PEAK (hrs)= 1.000
RUNOFF VOLUME (mm)= 2.835
TOTAL RAINFALL (mm)= 23.802
RUNOFF COEFFICIENT = 0.119

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
STANDHYD (0101)	Area (ha)= 1.60
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	79.97	41.29
over (min)		5.00	5.00
Storage Coeff. (min)	=	2.85 (ii)	4.08 (ii)
Unit Hyd. Tpeak (min)	=	5.00	5.00
Unit Hyd. peak (cms)	=	0.28	0.24

		TOTALS
PEAK FLOW	(cms)=	0.322 (iii)
TIME TO PEAK	(hrs)=	0.42
RUNOFF VOLUME	(mm)=	22.72
TOTAL RAINFALL	(mm)=	23.80
RUNOFF COEFFICIENT	=	0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0101):	1.60	0.322	0.42	22.72
	+ ID2= 2 (0102):	7.18	0.066	1.00	2.84
	ID = 3 (0601):	8.78	0.325	0.42	6.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0601)	8.780	0.325	0.42	6.46
OUTFLOW: ID= 1 (0702)	8.780	0.000	3.58	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=190.00
MAXIMUM STORAGE USED (ha.m.)= 0.0567

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)	8.78	0.00	3.58	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	8.78	0.00	3.50	0.00	0.00	0.17

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.00	3.50	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.00	3.50	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB		
STANDHYD (0105)	Area (ha)=	3.13
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00

Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		79.97	12.98
over (min)		5.00	5.00
Storage Coeff.	(min)=	3.48 (ii)	4.71 (ii)
Unit Hyd. Tpeak	(min)=	5.00	5.00
Unit Hyd. peak	(cms)=	0.26	0.22
			TOTALS
PEAK FLOW	(cms)=	0.60	0.00 0.600 (iii)
TIME TO PEAK	(hrs)=	0.42	0.58 0.42
RUNOFF VOLUME	(mm)=	22.80	5.06 22.62
TOTAL RAINFALL	(mm)=	23.80	23.80 23.80
RUNOFF COEFFICIENT	=	0.96	0.21 0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
STANDHYD (0103)	Area (ha)= 1.83
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		79.97	12.98
over (min)		5.00	10.00
Storage Coeff.	(min)=	2.97 (ii)	6.17 (ii)
Unit Hyd. Tpeak	(min)=	5.00	10.00
Unit Hyd. peak	(cms)=	0.28	0.15
			TOTALS
PEAK FLOW	(cms)=	0.33	0.01 0.332 (iii)
TIME TO PEAK	(hrs)=	0.42	0.67 0.42
RUNOFF VOLUME	(mm)=	22.80	5.06 21.02
TOTAL RAINFALL	(mm)=	23.80	23.80 23.80
RUNOFF COEFFICIENT	=	0.96	0.21 0.88

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)

Pre Development

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0103):	1.83	0.332	0.42	21.02
	+ ID2= 2 (0105):	3.13	0.600	0.42	22.62
	ID = 3 (0602):	4.96	0.932	0.42	22.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1		0.0000	0.0000	0.4450	0.1950
DT= 5.0 min		0.0120	0.1170	0.6080	0.2145
		0.0650	0.1365	0.7950	0.2340
		0.1670	0.1560	0.9980	0.2535
		0.2940	0.1755	1.4680	0.2632

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)		4.960	0.932	0.42	22.03
OUTFLOW: ID= 1 (0705)		4.960	0.011	1.08	21.53

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.17
TIME SHIFT OF PEAK FLOW (min)= 40.00
MAXIMUM STORAGE USED (ha.m.)= 0.1068

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0104):	43.69	0.098	3.17	3.90
	+ ID2= 2 (0704):	8.78	0.000	3.50	0.00
	ID = 3 (0901):	52.47	0.098	3.17	3.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1	ID1= 3 (0901):	52.47	0.098	3.17	3.25
	+ ID2= 2 (0705):	4.96	0.011	1.08	21.53
	ID = 1 (0901):	57.43	0.108	3.08	4.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppD

	ata\Local\Temp\
	388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
STANDHYD (2011)	Area (ha)= 4.69
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86
0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

				TOTALS
Max.Eff.Inten.(mm/hr)=		79.97	13.68	
	over (min)	5.00	6.00	
Storage Coeff. (min)=		3.93 (ii)	5.16 (ii)	
Unit Hyd. Tpeak (min)=		5.00	6.00	
Unit Hyd. peak (cms)=		0.26	0.21	
PEAK FLOW	(cms)=	0.80	0.00	0.803 (iii)
TIME TO PEAK	(hrs)=	0.45	0.62	0.45
RUNOFF VOLUME	(mm)=	22.80	5.06	22.62
TOTAL RAINFALL	(mm)=	23.80	23.80	23.80
RUNOFF COEFFICIENT	=	0.96	0.21	0.95

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppD
	ata\Local\Temp\
	388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
Ptotal= 23.80 mm	Comments: 2 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	2.86	0.33	42.84	0.58	34.27	0.83	8.57
0.17	8.57	0.42	79.97	0.67	22.85	0.92	2.86
0.25	22.85	0.50	42.84	0.75	14.28	1.00	2.86

CALIB	
STANDHYD (2012)	Area (ha)= 2.37
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	2.86	0.267	42.84	0.517	34.27	0.77	8.57
0.033	2.86	0.283	42.84	0.533	34.27	0.78	8.57
0.050	2.86	0.300	42.84	0.550	34.27	0.80	8.57
0.067	2.86	0.317	42.84	0.567	34.27	0.82	8.57
0.083	2.86	0.333	42.84	0.583	34.27	0.83	8.57
0.100	8.57	0.350	79.97	0.600	22.85	0.85	2.86
0.117	8.57	0.367	79.97	0.617	22.85	0.87	2.86
0.133	8.57	0.383	79.97	0.633	22.85	0.88	2.86
0.150	8.57	0.400	79.97	0.650	22.85	0.90	2.86
0.167	8.57	0.417	79.97	0.667	22.85	0.92	2.86
0.183	22.85	0.433	42.84	0.683	14.28	0.93	2.86
0.200	22.85	0.450	42.84	0.700	14.28	0.95	2.86
0.217	22.85	0.467	42.84	0.717	14.28	0.97	2.86
0.233	22.85	0.483	42.84	0.733	14.28	0.98	2.86
0.250	22.85	0.500	42.84	0.750	14.28	1.00	2.86

				TOTALS
Max.Eff.Inten.(mm/hr)=		79.97	13.68	
	over (min)	5.00	5.00	
Storage Coeff. (min)=		3.20 (ii)	4.43 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.30	0.24	
PEAK FLOW	(cms)=	0.43	0.00	0.426 (iii)
TIME TO PEAK	(hrs)=	0.45	0.60	0.45
RUNOFF VOLUME	(mm)=	22.80	5.06	22.62
TOTAL RAINFALL	(mm)=	23.80	23.80	23.80
RUNOFF COEFFICIENT	=	0.96	0.21	0.95

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD  (  0201)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  2011):     4.69   0.803     0.45    22.62
      + ID2= 2 (  2012):     2.37   0.426     0.45    22.62
        ================================================
        ID = 3 (  0201):     7.06   1.228     0.45    22.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
--------------------
| RESERVOIR(  0902)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   1.7670     0.2467
                          0.0160     0.1530   |   2.5170     0.2702
                          0.2020     0.1763   |   2.9010     0.2820
                          0.5480     0.1997   |   3.3030     0.2937
                          1.0770     0.2232   |   0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0201)      7.060     1.228      0.45      22.62
   OUTFLOW: ID= 1 (  0902)      7.060     0.033      1.08      16.11

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.72
                  TIME SHIFT OF PEAK FLOW         (min)= 38.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.1552
```

```
--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\ce0e6e32
| Ptotal= 23.80 mm |    Comments: 2 Year 1 Hour AES (Bloor, TRCA)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    2.86 |  0.33   42.84 |  0.58   34.27 |  0.83    8.57
                0.17    8.57 |  0.42   79.97 |  0.67   22.85 |  0.92    2.86
                0.25   22.85 |  0.50   42.84 |  0.75   14.28 |  1.00    2.86
```

```
--------------------
| CALIB            |
| STANDHYD (  0301)|   Area    (ha)=   6.15
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       6.09         0.06
     Dep. Storage     (mm)=       1.00         6.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     202.48        40.00
     Mannings n            =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      79.97        12.98
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       4.27 (ii)    5.49 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.23         0.16
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.11         0.00         1.114 (iii)
     TIME TO PEAK    (hrs)=       0.42         0.67          0.42
```



```
     RUNOFF VOLUME    (mm)=      22.80         5.06         22.62
     TOTAL RAINFALL   (mm)=      23.80        23.80         23.80
     RUNOFF COEFFICIENT   =       0.96         0.21          0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  85.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
| RESERVOIR(  0903)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.6480     0.2350

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0301)      6.150     1.114      0.42      22.62
   OUTFLOW: ID= 1 (  0903)      6.150     0.261      0.75      22.61

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.45
                  TIME SHIFT OF PEAK FLOW         (min)= 20.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0955
```

```
==============================================================================================================

       V    V   I    SSSSS  U   U    A    L              (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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```

***** D E T A I L E D O U T P U T *****

```
  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

  Output  filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\9026fe9f-c4ef-443c-8b86-3afd5876ad61\scena
  Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\9026fe9f-c4ef-443c-8b86-3afd5876ad61\scena


DATE: 02-03-2020                          TIME: 04:44:13

USER:



COMMENTS: _____________________________________________________
```

```
  **********************************************
  ** SIMULATION : 1hr AES 005-Year              **
  **********************************************


--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
| Ptotal= 32.60 mm |    Comments: 5 Year 1 Hour AES (Bloor, TRCA)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    3.91 |  0.33   58.68 |  0.58   46.94 |  0.83   11.74
                0.17   11.74 |  0.42  109.54 |  0.67   31.30 |  0.92    3.91
                0.25   31.30 |  0.50   58.68 |  0.75   19.56 |  1.00    3.91

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0401)|   Area    (ha)=   9.90
|ID= 1 DT= 1.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       8.91         0.99
     Dep. Storage     (mm)=       1.00         6.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     256.90        40.00
     Mannings n            =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.017    3.91 | 0.267   58.68 | 0.517   46.94 |  0.77   11.74
               0.033    3.91 | 0.283   58.68 | 0.533   46.94 |  0.78   11.74
               0.050    3.91 | 0.300   58.68 | 0.550   46.94 |  0.80   11.74
               0.067    3.91 | 0.317   58.68 | 0.567   46.94 |  0.82   11.74
               0.083    3.91 | 0.333   58.68 | 0.583   46.94 |  0.83   11.74
               0.100   11.74 | 0.350  109.54 | 0.600   31.30 |  0.85    3.91
               0.117   11.74 | 0.367  109.54 | 0.617   31.30 |  0.87    3.91
               0.133   11.74 | 0.383  109.54 | 0.633   31.30 |  0.88    3.91
               0.150   11.74 | 0.400  109.54 | 0.650   31.30 |  0.90    3.91
               0.167   11.74 | 0.417  109.54 | 0.667   31.30 |  0.92    3.91
               0.183   31.30 | 0.433   58.68 | 0.683   19.56 |  0.93    3.91
               0.200   31.30 | 0.450   58.68 | 0.700   19.56 |  0.95    3.91
               0.217   31.30 | 0.467   58.68 | 0.717   19.56 |  0.97    3.91
               0.233   31.30 | 0.483   58.68 | 0.733   19.56 |  0.98    3.91
               0.250   31.30 | 0.500   58.68 | 0.750   19.56 |  1.00    3.91

     Max.Eff.Inten.(mm/hr)=     109.54        27.21
               over (min)         5.00         8.00
     Storage Coeff.  (min)=       4.34 (ii)    7.16 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.25         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=       2.06         0.06         2.087 (iii)
     TIME TO PEAK    (hrs)=       0.47         0.63          0.47
     RUNOFF VOLUME    (mm)=      31.60         9.91         29.43
     TOTAL RAINFALL   (mm)=      32.60        32.60         32.60
     RUNOFF COEFFICIENT   =       0.97         0.30          0.90
```



```
      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  85.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0904)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   2.1790      0.2070

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0401)      9.900     2.087      0.47      29.43
   OUTFLOW: ID= 1 (  0904)      9.900     1.194      0.65      29.43

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 57.21
                TIME SHIFT OF PEAK FLOW         (min)= 11.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.1135

--------------------------------------------------------------------------------

--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
| Ptotal= 32.60 mm |    Comments: 5 Year 1 Hour AES (Bloor, TRCA)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    3.91 |  0.33   58.68 |  0.58   46.94 |  0.83   11.74
                0.17   11.74 |  0.42  109.54 |  0.67   31.30 |  0.92    3.91
                0.25   31.30 |  0.50   58.68 |  0.75   19.56 |  1.00    3.91

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0104)|   Area    (ha)=  43.69   Curve Number   (CN)= 80.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   2.61

     Unit Hyd Qpeak  (cms)=   0.639

     PEAK FLOW       (cms)=   0.197 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   7.853
     TOTAL RAINFALL   (mm)=  32.601
     RUNOFF COEFFICIENT   =   0.241

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
| Ptotal= 32.60 mm |    Comments: 5 Year 1 Hour AES (Bloor, TRCA)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    3.91 |  0.33   58.68 |  0.58   46.94 |  0.83   11.74
                0.17   11.74 |  0.42  109.54 |  0.67   31.30 |  0.92    3.91
                0.25   31.30 |  0.50   58.68 |  0.75   19.56 |  1.00    3.91
```

```
--------------------------------------------------------------------------------

--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   7.18   Curve Number   (CN)= 73.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.40

     Unit Hyd Qpeak  (cms)=   0.686

     PEAK FLOW       (cms)=   0.137 (i)
     TIME TO PEAK    (hrs)=   0.917
     RUNOFF VOLUME    (mm)=   5.869
     TOTAL RAINFALL   (mm)=  32.601
     RUNOFF COEFFICIENT   =   0.180

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
| Ptotal= 32.60 mm |    Comments: 5 Year 1 Hour AES (Bloor, TRCA)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    3.91 |  0.33   58.68 |  0.58   46.94 |  0.83   11.74
                0.17   11.74 |  0.42  109.54 |  0.67   31.30 |  0.92    3.91
                0.25   31.30 |  0.50   58.68 |  0.75   19.56 |  1.00    3.91

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0101)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.58         0.02
     Dep. Storage     (mm)=       1.00         1.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     103.28        40.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     109.54        63.93
               over (min)          5.00         5.00
     Storage Coeff.  (min)=       2.51 (ii)    3.59 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.29         0.26
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.45         0.00          0.452 (iii)
     TIME TO PEAK    (hrs)=       0.42         0.42           0.42
     RUNOFF VOLUME    (mm)=      31.60        22.21          31.51
     TOTAL RAINFALL   (mm)=      32.60        32.60          32.60
     RUNOFF COEFFICIENT   =       0.97         0.68           0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  95.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
```



```
--------------------
| ADD HYD  (  0601)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     1.60   0.452     0.42    31.51
     + ID2= 2 (  0102):     7.18   0.137     0.92     5.87
       ================================================
       ID = 3 (  0601):     8.78   0.460     0.42    10.54

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------

--------------------
| RESERVOIR(  0702)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.0430      0.2830
                         0.0000     0.1860    |  0.0000      0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0601)     8.780     0.460      0.42      10.54
   OUTFLOW: ID= 1 (  0702)     8.780     0.000      3.75       0.00

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.00
                TIME SHIFT OF PEAK FLOW         (min)=200.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0926

--------------------------------------------------------------------------------

--------------------
| ROUTE CHN(  0703)|
| IN= 2---> OUT= 1 |     Routing time step (min)'=  5.00
--------------------
             <------ DATA FOR SECTION (   1.1) ------>
             Distance      Elevation       Manning
                 0.00         88.25        0.0500
                 0.61         88.00        0.0500
                 1.21         87.75        0.0500
                 1.82         87.50        0.0300      Main Channel
                 2.20         87.35        0.0300      Main Channel
                 2.62         87.50        0.0300      Main Channel
                 3.31         87.75        0.0500
                 3.99         88.00        0.0500
                 4.59         88.22        0.0500

     <---------------------- TRAVEL TIME TABLE ---------------------->
      DEPTH    ELEV      VOLUME    FLOW RATE    VELOCITY   TRAV.TIME
       (m)      (m)     (cu.m.)      (cms)        (m/s)      (min)
      0.04    87.39    .585E+00       0.0         0.17       15.03
      0.08    87.43    .234E+01       0.0         0.27        9.47
      0.11    87.46    .527E+01       0.0         0.36        7.23
      0.15    87.50    .936E+01       0.0         0.44        5.97
      0.20    87.55    .163E+02       0.1         0.55        4.75
      0.25    87.60    .251E+02       0.1         0.63        4.13
      0.29    87.64    .357E+02       0.2         0.70        3.72
      0.34    87.69    .483E+02       0.2         0.76        3.43
      0.39    87.74    .627E+02       0.3         0.81        3.19
      0.44    87.79    .789E+02       0.5         0.90        2.90
      0.49    87.84    .970E+02       0.6         0.97        2.67
      0.53    87.88    .117E+03       0.8         1.04        2.50
      0.58    87.93    .139E+03       1.0         1.10        2.37
      0.63    87.98    .162E+03       1.2         1.15        2.27
      0.68    88.03    .188E+03       1.4         1.19        2.18
      0.73    88.08    .215E+03       1.7         1.24        2.10
      0.77    88.12    .244E+03       2.0         1.27        2.04
      0.82    88.17    .275E+03       2.3         1.31        1.98
```

0.87	88.22	.308E+03	2.7	1.35	1.93

		<---- hydrograph ---->			<-pipe / channel->	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (| 0702)	8.78	0.00	3.75	0.00	0.00	0.17
OUTFLOW: ID= 1 (| 0703)	8.78	0.00	3.67	0.00	0.00	0.17

ROUTE CHN(0704)|
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

		<---- hydrograph ---->			<-pipe / channel->	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (| 0703)	8.78	0.00	3.67	0.00	0.00	0.10
OUTFLOW: ID= 1 (| 0704)	8.78	0.00	3.67	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB	STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min		Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.10	0.03	
Dep. Storage	(mm)=	1.00	6.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	144.45	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		109.54	26.55	
over (min)		5.00	5.00	
Storage Coeff. (min)=		3.07 (ii)	4.15 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.27	0.24	
				TOTALS
PEAK FLOW	(cms)=	0.85	0.00	0.848 (iii)
TIME TO PEAK	(hrs)=	0.42	0.58	0.42
RUNOFF VOLUME	(mm)=	31.60	9.91	31.38
TOTAL RAINFALL	(mm)=	32.60	32.60	32.60
RUNOFF COEFFICIENT	=	0.97	0.30	0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB	STANDHYD (0103)	Area (ha)= 1.83
ID= 1 DT= 5.0 min		Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.65	0.18	
Dep. Storage	(mm)=	1.00	6.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	110.45	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		109.54	26.55	
over (min)		5.00	10.00	
Storage Coeff. (min)=		2.61 (ii)	5.44 (ii)	
Unit Hyd. Tpeak (min)=		5.00	10.00	
Unit Hyd. peak (cms)=		0.29	0.16	
				TOTALS

PEAK FLOW	(cms)=	0.46	0.01	0.467 (iii)
TIME TO PEAK	(hrs)=	0.42	0.58	0.42
RUNOFF VOLUME	(mm)=	31.60	9.91	29.43
TOTAL RAINFALL	(mm)=	32.60	32.60	32.60
RUNOFF COEFFICIENT	=	0.97	0.30	0.90

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0103):	1.83	0.467	0.42	29.43
+ ID2= 2 (0105):	3.13	0.848	0.42	31.38
ID = 3 (0602):	4.96	1.315	0.42	30.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4450	0.1950
0.0120	0.1170	0.6080	0.2145
0.0650	0.1365	0.7950	0.2340
0.1670	0.1560	0.9980	0.2535
0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	1.315	0.42	30.66
OUTFLOW: ID= 1 (0705)	4.960	0.090	0.92	30.16

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.84
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1414

ADD HYD (0901)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	43.69	0.197	3.08	7.85
+ ID2= 2 (0704):	8.78	0.000	3.67	0.00
ID = 3 (0901):	52.47	0.197	3.08	6.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0901):	52.47	0.197	3.08	6.54

+ ID2= 2 (0705):	4.96	0.090	0.92	30.16
ID = 1 (0901):	57.43	0.209	3.08	8.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM
Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
Ptotal= 32.60 mm
Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB
STANDHYD (2011)
ID= 1 DT= 1.0 min
Area (ha)= 4.69
Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	3.91	0.267	58.68	0.517	46.94	0.77	11.74
0.033	3.91	0.283	58.68	0.533	46.94	0.78	11.74
0.050	3.91	0.300	58.68	0.550	46.94	0.80	11.74
0.067	3.91	0.317	58.68	0.567	46.94	0.82	11.74
0.083	3.91	0.333	58.68	0.583	46.94	0.83	11.74
0.100	11.74	0.350	109.54	0.600	31.30	0.85	3.91
0.117	11.74	0.367	109.54	0.617	31.30	0.87	3.91
0.133	11.74	0.383	109.54	0.633	31.30	0.88	3.91
0.150	11.74	0.400	109.54	0.650	31.30	0.90	3.91
0.167	11.74	0.417	109.54	0.667	31.30	0.92	3.91
0.183	31.30	0.433	58.68	0.683	19.56	0.93	3.91
0.200	31.30	0.450	58.68	0.700	19.56	0.95	3.91
0.217	31.30	0.467	58.68	0.717	19.56	0.97	3.91
0.233	31.30	0.483	58.68	0.733	19.56	0.98	3.91
0.250	31.30	0.500	58.68	0.750	19.56	1.00	3.91

Max.Eff.Inten.(mm/hr)=		109.54	27.21	
over (min)		5.00	5.00	
Storage Coeff. (min)=		3.47 (ii)	4.55 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.28	0.24	
				TOTALS
PEAK FLOW	(cms)=	1.13	0.00	1.137 (iii)
TIME TO PEAK	(hrs)=	0.45	0.57	0.45
RUNOFF VOLUME	(mm)=	31.60	9.91	31.38
TOTAL RAINFALL	(mm)=	32.60	32.60	32.60
RUNOFF COEFFICIENT	=	0.97	0.30	0.96

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB		
STANDHYD (2012)	Area (ha)=	2.37
ID= 1 DT= 1.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	3.91	0.267	58.68	0.517	46.94	0.77	11.74
0.033	3.91	0.283	58.68	0.533	46.94	0.78	11.74
0.050	3.91	0.300	58.68	0.550	46.94	0.80	11.74
0.067	3.91	0.317	58.68	0.567	46.94	0.82	11.74
0.083	3.91	0.333	58.68	0.583	46.94	0.83	11.74
0.100	11.74	0.350	109.54	0.600	31.30	0.85	3.91
0.117	11.74	0.367	109.54	0.617	31.30	0.87	3.91
0.133	11.74	0.383	109.54	0.633	31.30	0.88	3.91
0.150	11.74	0.400	109.54	0.650	31.30	0.90	3.91
0.167	11.74	0.417	109.54	0.667	31.30	0.92	3.91
0.183	31.30	0.433	58.68	0.683	19.56	0.93	3.91
0.200	31.30	0.450	58.68	0.700	19.56	0.95	3.91
0.217	31.30	0.467	58.68	0.717	19.56	0.97	3.91
0.233	31.30	0.483	58.68	0.733	19.56	0.98	3.91
0.250	31.30	0.500	58.68	0.750	19.56	1.00	3.91

				TOTALS
Max.Eff.Inten.(mm/hr)=		109.54	27.21	
over (min)		5.00	4.00	
Storage Coeff. (min)=		2.83 (ii)	3.91 (ii)	
Unit Hyd. Tpeak (min)=		5.00	4.00	
Unit Hyd. peak (cms)=		0.32	0.29	
PEAK FLOW	(cms)=	0.60	0.00	0.599 (iii)
TIME TO PEAK	(hrs)=	0.45	0.53	0.45
RUNOFF VOLUME	(mm)=	31.60	9.91	31.38
TOTAL RAINFALL	(mm)=	32.60	32.60	32.60
RUNOFF COEFFICIENT	=	0.97	0.30	0.96

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (2011):	4.69	1.137	0.45	31.38
+	ID2= 2 (2012):	2.37	0.599	0.45	31.38
	ID = 3 (0201):	7.06	1.735	0.45	31.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	1.7670	0.2467
	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937
	1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	1.735	0.45	31.38
OUTFLOW: ID= 1 (0902)	7.060	0.354	0.83	24.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.38
TIME SHIFT OF PEAK FLOW (min)= 23.00
MAXIMUM STORAGE USED (ha.m.)= 0.1866

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\0a506b81
Ptotal= 32.60 mm	Comments: 5 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	3.91	0.33	58.68	0.58	46.94	0.83	11.74
0.17	11.74	0.42	109.54	0.67	31.30	0.92	3.91
0.25	31.30	0.50	58.68	0.75	19.56	1.00	3.91

CALIB		
STANDHYD (0301)	Area (ha)=	6.15
ID= 1 DT= 5.0 min	Total Imp(%)=	99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00

Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	109.54	26.55
over (min)		5.00	5.00
Storage Coeff. (min)	=	3.76 (ii)	4.84 (ii)
Unit Hyd. Tpeak (min)	=	5.00	5.00
Unit Hyd. peak (cms)	=	0.25	0.22

				TOTALS
PEAK FLOW	(cms)	=	1.58	0.00	1.587 (iii)
TIME TO PEAK	(hrs)	=	0.42	0.58	0.42
RUNOFF VOLUME	(mm)	=	31.60	9.91	31.38
TOTAL RAINFALL	(mm)	=	32.60	32.60	32.60
RUNOFF COEFFICIENT		=	0.97	0.30	0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	1.587	0.42	31.38
OUTFLOW: ID= 1 (0903)	6.150	0.364	0.75	31.37

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.93
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1327

V V I SSSSS U U A L (v 5.1.2002)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

OOO TTTTT TTTTT H H Y Y M M OOO TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
OOO T T H H Y M M OOO

***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\6e7f89b8-285f-45de-8cd0-58de3003b116\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\6e7f89b8-285f-45de-8cd0-58de3003b116\scena

DATE: 02-03-2020 TIME: 04:44:13

USER:

COMMENTS: _____

** SIMULATION : 1hr AES 010-Year **

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB			
STANDHYD (0401)	Area (ha)= 9.90		
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86
0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Max.Eff.Inten.(mm/hr)	=	129.36	38.03
over (min)		5.00	7.00
Storage Coeff. (min)	=	4.06 (ii)	6.70 (ii)

Unit Hyd. Tpeak (min)=	5.00	7.00	
Unit Hyd. peak (cms)=	0.26	0.17	
			TOTALS
PEAK FLOW (cms)=	2.47	0.08	2.521 (iii)
TIME TO PEAK (hrs)=	0.45	0.60	0.47
RUNOFF VOLUME (mm)=	37.50	13.66	35.12
TOTAL RAINFALL (mm)=	38.50	38.50	38.50
RUNOFF COEFFICIENT =	0.97	0.35	0.91

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	2.521	0.47	35.12
OUTFLOW: ID= 1 (0904)	9.900	1.431	0.65	35.11

PEAK FLOW REDUCTION [Qout/Qin](%)= 56.76
TIME SHIFT OF PEAK FLOW (min)= 11.00
MAXIMUM STORAGE USED (ha.m.)= 0.1360

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB			
NASHYD (0104)	Area (ha)= 43.69	Curve Number (CN)= 80.0	
ID= 1 DT= 5.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.61		

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.276 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 11.002
TOTAL RAINFALL (mm)= 38.500
RUNOFF COEFFICIENT = 0.286

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB			
NASHYD (0102)	Area (ha)= 7.18	Curve Number (CN)= 73.0	
ID= 1 DT= 5.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.40		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.195 (i)
TIME TO PEAK (hrs)= 0.917
RUNOFF VOLUME (mm)= 8.352
TOTAL RAINFALL (mm)= 38.500
RUNOFF COEFFICIENT = 0.217

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB			
STANDHYD (0101)	Area (ha)= 1.60		
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00	

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.58	0.02	
Dep. Storage (mm)=	1.00	1.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	103.28	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	129.36	79.50	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.35 (ii)	3.36 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.30	0.26	
			TOTALS
PEAK FLOW (cms)=	0.54	0.00	0.539 (iii)
TIME TO PEAK (hrs)=	0.42	0.42	0.42
RUNOFF VOLUME (mm)=	37.50	27.64	37.40
TOTAL RAINFALL (mm)=	38.50	38.50	38.50
RUNOFF COEFFICIENT =	0.97	0.72	0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)					
1 + 2 = 3		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0101):	1.60	0.539	0.42	37.40
	+ ID2= 2 (0102):	7.18	0.195	0.92	8.35
	ID = 3 (0601):	8.78	0.553	0.42	13.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)					
IN= 2---> OUT= 1					
DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0430	0.2830
	0.0000	0.1860	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0601)	8.780	0.553	0.42	13.65
OUTFLOW: ID= 1 (0702)	8.780	0.000	3.83	0.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.00
TIME SHIFT OF PEAK FLOW (min)=205.00
MAXIMUM STORAGE USED (ha.m.)= 0.1198

ROUTE CHN(0703)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43

0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

<---- hydrograph ----> <-pipe / channel->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0702)	8.78	0.00	3.83	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	8.78	0.00	3.75	0.00	0.00	0.17

ROUTE CHN(0704)	
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

<---- hydrograph ----> <-pipe / channel->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 (0703)	8.78	0.00	3.75	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.00	3.75	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppD

	ata\Local\Temp\
	388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB	
STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		129.36	37.68
over (min)		5.00	5.00
Storage Coeff. (min)=		2.87 (ii)	3.89 (ii)
Unit Hyd. Tpeak (min)=		5.00	5.00
Unit Hyd. peak (cms)=		0.28	0.25
			TOTALS
PEAK FLOW	(cms)=	1.01	0.00 1.015 (iii)
TIME TO PEAK	(hrs)=	0.42	0.50 0.42
RUNOFF VOLUME	(mm)=	37.50	13.66 37.26
TOTAL RAINFALL	(mm)=	38.50	38.50 38.50
RUNOFF COEFFICIENT	=	0.97	0.35 0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppD
	ata\Local\Temp\
	388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm	Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB	
STANDHYD (0103)	Area (ha)= 1.83
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.65	0.18
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	110.45	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		129.36	37.68
over (min)		5.00	10.00
Storage Coeff. (min)=		2.45 (ii)	5.09 (ii)
Unit Hyd. Tpeak (min)=		5.00	10.00
Unit Hyd. peak (cms)=		0.30	0.16
			TOTALS
PEAK FLOW	(cms)=	0.55	0.02 0.560 (iii)
TIME TO PEAK	(hrs)=	0.42	0.58 0.42
RUNOFF VOLUME	(mm)=	37.50	13.66 35.11
TOTAL RAINFALL	(mm)=	38.50	38.50 38.50
RUNOFF COEFFICIENT	=	0.97	0.35 0.91

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0103):	1.83	0.560	0.42	35.11
	+ ID2= 2 (0105):	3.13	1.015	0.42	37.26
	ID = 3 (0602):	4.96	1.575	0.42	36.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4450	0.1950
	0.0120	0.1170	0.6080	0.2145
	0.0650	0.1365	0.7950	0.2340
	0.1670	0.1560	0.9980	0.2535
	0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	1.575	0.42	36.47
OUTFLOW: ID= 1 (0705)	4.960	0.188	0.83	35.97

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.91
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1596

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0104):	43.69	0.276	3.08	11.00
	+ ID2= 2 (0704):	8.78	0.000	3.75	0.00
	ID = 3 (0901):	52.47	0.276	3.08	9.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0901):	52.47	0.276	3.08	9.16
	+ ID2= 2 (0705):	4.96	0.188	0.83	35.97
	ID = 1 (0901):	57.43	0.291	2.92	11.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm | Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB STANDHYD (2011) | Area (ha)= 4.69
ID= 1 DT= 1.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86
0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Max.Eff.Inten.	(mm/hr)=	129.36	38.03
	over (min)	5.00	5.00

Storage Coeff.	(min)=	3.24 (ii)	4.26 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	5.00	
Unit Hyd. peak	(cms)=	0.29	0.25	
				TOTALS
PEAK FLOW	(cms)=	1.36	0.00	1.363 (iii)
TIME TO PEAK	(hrs)=	0.45	0.55	0.45
RUNOFF VOLUME	(mm)=	37.50	13.66	37.26
TOTAL RAINFALL	(mm)=	38.50	38.50	38.50
RUNOFF COEFFICIENT	=	0.97	0.35	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Ptotal= 38.50 mm | Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB STANDHYD (2012) | Area (ha)= 2.37
ID= 1 DT= 1.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	4.62	0.267	69.30	0.517	55.44	0.77	13.86
0.033	4.62	0.283	69.30	0.533	55.44	0.78	13.86
0.050	4.62	0.300	69.30	0.550	55.44	0.80	13.86
0.067	4.62	0.317	69.30	0.567	55.44	0.82	13.86
0.083	4.62	0.333	69.30	0.583	55.44	0.83	13.86
0.100	13.86	0.350	129.36	0.600	36.96	0.85	4.62
0.117	13.86	0.367	129.36	0.617	36.96	0.87	4.62
0.133	13.86	0.383	129.36	0.633	36.96	0.88	4.62
0.150	13.86	0.400	129.36	0.650	36.96	0.90	4.62
0.167	13.86	0.417	129.36	0.667	36.96	0.92	4.62
0.183	36.96	0.433	69.30	0.683	23.10	0.93	4.62
0.200	36.96	0.450	69.30	0.700	23.10	0.95	4.62
0.217	36.96	0.467	69.30	0.717	23.10	0.97	4.62
0.233	36.96	0.483	69.30	0.733	23.10	0.98	4.62
0.250	36.96	0.500	69.30	0.750	23.10	1.00	4.62

Max.Eff.Inten.(mm/hr)= 129.36 38.03

over (min)		5.00	4.00	
Storage Coeff. (min)=		2.64 (ii)	3.66 (ii)	
Unit Hyd. Tpeak (min)=		5.00	4.00	
Unit Hyd. peak (cms)=		0.33	0.30	
				TOTALS
PEAK FLOW	(cms)=	0.71	0.00	0.716 (iii)
TIME TO PEAK	(hrs)=	0.45	0.47	0.45
RUNOFF VOLUME	(mm)=	37.50	13.66	37.26
TOTAL RAINFALL	(mm)=	38.50	38.50	38.50
RUNOFF COEFFICIENT	=	0.97	0.35	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2011):		4.69	1.363	0.45	37.26
+ ID2= 2 (2012):		2.37	0.716	0.45	37.26
ID = 3 (0201):		7.06	2.079	0.45	37.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.7670	0.2467
0.0160	0.1530	2.5170	0.2702
0.2020	0.1763	2.9010	0.2820
0.5480	0.1997	3.3030	0.2937
1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	2.079	0.45	37.26
OUTFLOW: ID= 1 (0902)	7.060	0.603	0.75	30.59

PEAK FLOW REDUCTION [Qout/Qin](%)= 29.03
TIME SHIFT OF PEAK FLOW (min)= 18.00
MAXIMUM STORAGE USED (ha.m.)= 0.2022

READ STORM
Ptotal= 38.50 mm
Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\3d978379
Comments: 10 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	4.62	0.33	69.30	0.58	55.44	0.83	13.86
0.17	13.86	0.42	129.36	0.67	36.96	0.92	4.62
0.25	36.96	0.50	69.30	0.75	23.10	1.00	4.62

CALIB
STANDHYD (0301) Area (ha)= 6.15
ID= 1 DT= 5.0 min Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250

Max.Eff.Inten.(mm/hr)=		129.36	37.68	
over (min)		5.00	5.00	
Storage Coeff. (min)=		3.52 (ii)	4.53 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.26	0.23	
				TOTALS
PEAK FLOW	(cms)=	1.90	0.01	1.908 (iii)
TIME TO PEAK	(hrs)=	0.42	0.50	0.42
RUNOFF VOLUME	(mm)=	37.50	13.66	37.26
TOTAL RAINFALL	(mm)=	38.50	38.50	38.50
RUNOFF COEFFICIENT	=	0.97	0.35	0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	1.908	0.42	37.26
OUTFLOW: ID= 1 (0903)	6.150	0.433	0.75	37.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.68
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1576

```
V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
V    V   I    SS     U   U   A A   L
 V  V    I     SS    U   U  AAAAA  L
 V  V    I      SS   U   U  A   A  L
  VV     I    SSSSS  UUUUU  A   A  LLLLL

 OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
O   O    T      T    H   H   Y Y   MM MM  O   O
O   O    T      T    H   H    Y    M   M  O   O
 OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\3243e9bc-be30-45dd-adc8-f720eaf5c38b\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\3243e9bc-be30-45dd-adc8-f720eaf5c38b\scena

DATE: 02-03-2020 TIME: 04:44:13

USER:

COMMENTS: _____

****
** SIMULATION : 1hr AES 025-Year **
****

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB STANDHYD (0401) ID= 1 DT= 1.0 min	Area (ha)= 9.90 Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51
0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51
0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51

0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

			TOTALS
Max.Eff.Inten.(mm/hr)=	154.22	52.95	
over (min)	5.00	7.00	
Storage Coeff. (min)=	3.78 (ii)	6.25 (ii)	
Unit Hyd. Tpeak (min)=	5.00	7.00	
Unit Hyd. peak (cms)=	0.27	0.17	
PEAK FLOW (cms)=	3.00	0.12	3.075 (iii)
TIME TO PEAK (hrs)=	0.45	0.58	0.45
RUNOFF VOLUME (mm)=	44.90	18.79	42.29
TOTAL RAINFALL (mm)=	45.90	45.90	45.90
RUNOFF COEFFICIENT =	0.98	0.41	0.92

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904) IN= 2---> OUT= 1 DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (	0401)	9.900	3.075	0.45	42.29
OUTFLOW: ID= 1 (	0904)	9.900	1.729	0.65	42.29

PEAK FLOW REDUCTION [Qout/Qin](%)= 56.23
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.1643

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB NASHYD (0104) ID= 1 DT= 5.0 min	Area (ha)= 43.69 Curve Number (CN)= 80.0 Ia (mm)= 6.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 2.61

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.386 (i)

```
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  15.396
     TOTAL RAINFALL   (mm)=  45.899
     RUNOFF COEFFICIENT   =   0.335

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
| Ptotal= 45.90 mm |    Comments: 25Y1HR
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    5.51 |  0.33   82.62 |  0.58   66.10 |  0.83   16.52
                0.17   16.52 |  0.42  154.22 |  0.67   44.06 |  0.92    5.51
                0.25   44.06 |  0.50   82.62 |  0.75   27.54 |  1.00    5.51
```

```
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   7.18   Curve Number   (CN)= 73.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   6.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.40

     Unit Hyd Qpeak  (cms)=   0.686

     PEAK FLOW       (cms)=   0.277 (i)
     TIME TO PEAK    (hrs)=   0.917
     RUNOFF VOLUME    (mm)=  11.892
     TOTAL RAINFALL   (mm)=  45.899
     RUNOFF COEFFICIENT   =   0.259

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
| Ptotal= 45.90 mm |    Comments: 25Y1HR
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    5.51 |  0.33   82.62 |  0.58   66.10 |  0.83   16.52
                0.17   16.52 |  0.42  154.22 |  0.67   44.06 |  0.92    5.51
                0.25   44.06 |  0.50   82.62 |  0.75   27.54 |  1.00    5.51
```

```
--------------------
| CALIB            |
| STANDHYD (  0101)|   Area    (ha)=   1.60
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.58         0.02
     Dep. Storage     (mm)=       1.00         1.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     103.28        40.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     154.22        99.21
```



```
               over (min)        5.00         5.00
     Storage Coeff.  (min)=       2.19 (ii)    3.13 (ii)
     Unit Hyd. Tpeak (min)=       5.00         5.00
     Unit Hyd. peak  (cms)=       0.31         0.27
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.64         0.00          0.649 (iii)
     TIME TO PEAK    (hrs)=       0.42         0.42          0.42
     RUNOFF VOLUME    (mm)=      44.90        34.60         44.80
     TOTAL RAINFALL   (mm)=      45.90        45.90         45.90
     RUNOFF COEFFICIENT   =       0.98         0.75          0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  95.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
| ADD HYD  (  0601)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     1.60   0.649     0.42    44.80
     + ID2= 2 (  0102):     7.18   0.277     0.92    11.89
       ====================================================
       ID = 3 (  0601):     8.78   0.672     0.42    17.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
--------------------
| RESERVOIR(  0702)|
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0430     0.2830
                          0.0000     0.1860   |   0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0601)      8.780     0.672      0.42      17.89
   OUTFLOW: ID= 1 (  0702)      8.780     0.000      3.92       0.00

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.00
                TIME SHIFT OF PEAK FLOW         (min)=210.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.1571
```

```
--------------------
| ROUTE CHN(  0703)|
| IN= 2---> OUT= 1 |     Routing time step (min)'=  5.00
--------------------
             <------ DATA FOR SECTION (   1.1) ------>
             Distance      Elevation       Manning
                 0.00         88.25        0.0500
                 0.61         88.00        0.0500
                 1.21         87.75        0.0500
                 1.82         87.50        0.0300      Main Channel
                 2.20         87.35        0.0300      Main Channel
                 2.62         87.50        0.0300      Main Channel
                 3.31         87.75        0.0500
                 3.99         88.00        0.0500
                 4.59         88.22        0.0500

     <---------------------- TRAVEL TIME TABLE ---------------------->
```

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
	<---- hydrograph ---->				<-pipe / channel->	
INFLOW : ID= 2 (0702)	8.78	0.00	3.92	0.00	0.00	0.17
OUTFLOW: ID= 1 (0703)	8.78	0.00	3.83	0.00	0.00	0.17

```
--------------------
| ROUTE CHN(  0704)|
| IN= 2---> OUT= 1 |     Routing time step (min)'=  5.00
--------------------
```

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.00	3.83	0.00	0.00	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.00	3.83	0.00	0.00	0.10

```
--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
| Ptotal= 45.90 mm |    Comments: 25Y1HR
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

```
--------------------
| CALIB            |
| STANDHYD (  0105)|   Area    (ha)=   3.13
|ID= 1 DT= 5.0 min |   Total Imp(%)=  99.00   Dir. Conn.(%)=  99.00
--------------------
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)	=	154.22	52.95
over (min)		5.00	5.00
Storage Coeff. (min)	=	2.68 (ii)	3.62 (ii)
Unit Hyd. Tpeak (min)	=	5.00	5.00
Unit Hyd. peak (cms)	=	0.29	0.25
			TOTALS
PEAK FLOW (cms)	=	1.22	0.00 1.227 (iii)
TIME TO PEAK (hrs)	=	0.42	0.42 0.42
RUNOFF VOLUME (mm)	=	44.90	18.79 44.64
TOTAL RAINFALL (mm)	=	45.90	45.90 45.90
RUNOFF COEFFICIENT	=	0.98	0.41 0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```
--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
| Ptotal= 45.90 mm |    Comments: 25Y1HR
--------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB			
STANDHYD (0103)	Area (ha)= 1.83		
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.65	0.18	
Dep. Storage	(mm)=	1.00	6.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	110.45	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)	=	154.22	52.95	
over (min)		5.00	5.00	
Storage Coeff. (min)	=	2.28 (ii)	4.74 (ii)	
Unit Hyd. Tpeak (min)	=	5.00	5.00	
Unit Hyd. peak (cms)	=	0.30	0.22	
				TOTALS
PEAK FLOW	(cms)=	0.67	0.02	0.687 (iii)
TIME TO PEAK	(hrs)=	0.42	0.50	0.42
RUNOFF VOLUME	(mm)=	44.90	18.79	42.29
TOTAL RAINFALL	(mm)=	45.90	45.90	45.90
RUNOFF COEFFICIENT	=	0.98	0.41	0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0103):		1.83	0.687	0.42	42.29
+ ID2= 2 (0105):		3.13	1.227	0.42	44.64
ID = 3 (0602):		4.96	1.915	0.42	43.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.4450	0.1950
	0.0120	0.1170	0.6080	0.2145
	0.0650	0.1365	0.7950	0.2340
	0.1670	0.1560	0.9980	0.2535
	0.2940	0.1755	1.4680	0.2632

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)		4.960	1.915	0.42	43.77
OUTFLOW: ID= 1 (0705)		4.960	0.321	0.83	43.27

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.79
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1801

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0104):		43.69	0.386	3.08	15.40
+ ID2= 2 (0704):		8.78	0.000	3.83	0.00
ID = 3 (0901):		52.47	0.386	3.08	12.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
ID1= 3 (0901):		52.47	0.386	3.08	12.82
+ ID2= 2 (0705):		4.96	0.321	0.83	43.27
ID = 1 (0901):		57.43	0.404	2.92	15.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
Ptotal= 45.90 mm	Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB			
STANDHYD (2011)	Area (ha)= 4.69		
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51
0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51

Pre Development

0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51
0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

Max.Eff.Inten.(mm/hr)=	154.22	52.95	
over (min)	5.00	4.00	
Storage Coeff. (min)=	3.02 (ii)	3.97 (ii)	
Unit Hyd. Tpeak (min)=	5.00	4.00	
Unit Hyd. peak (cms)=	0.31	0.28	
			TOTALS
PEAK FLOW (cms)=	1.64	0.01	1.650 (iii)
TIME TO PEAK (hrs)=	0.45	0.47	0.45
RUNOFF VOLUME (mm)=	44.90	18.79	44.64
TOTAL RAINFALL (mm)=	45.90	45.90	45.90
RUNOFF COEFFICIENT =	0.98	0.41	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\27974fd2
Ptotal= 45.90 mm | Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB
STANDHYD (2012) | Area (ha)= 2.37
ID= 1 DT= 1.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	5.51	0.267	82.62	0.517	66.10	0.77	16.52
0.033	5.51	0.283	82.62	0.533	66.10	0.78	16.52
0.050	5.51	0.300	82.62	0.550	66.10	0.80	16.52
0.067	5.51	0.317	82.62	0.567	66.10	0.82	16.52
0.083	5.51	0.333	82.62	0.583	66.10	0.83	16.52
0.100	16.52	0.350	154.22	0.600	44.06	0.85	5.51
0.117	16.52	0.367	154.22	0.617	44.06	0.87	5.51

Pre Development

0.133	16.52	0.383	154.22	0.633	44.06	0.88	5.51
0.150	16.52	0.400	154.22	0.650	44.06	0.90	5.51
0.167	16.52	0.417	154.22	0.667	44.06	0.92	5.51
0.183	44.06	0.433	82.62	0.683	27.54	0.93	5.51
0.200	44.06	0.450	82.62	0.700	27.54	0.95	5.51
0.217	44.06	0.467	82.62	0.717	27.54	0.97	5.51
0.233	44.06	0.483	82.62	0.733	27.54	0.98	5.51
0.250	44.06	0.500	82.62	0.750	27.54	1.00	5.51

Max.Eff.Inten.(mm/hr)=	154.22	52.95	
over (min)	5.00	4.00	
Storage Coeff. (min)=	2.46 (ii)	3.41 (ii)	
Unit Hyd. Tpeak (min)=	5.00	4.00	
Unit Hyd. peak (cms)=	0.34	0.31	
			TOTALS
PEAK FLOW (cms)=	0.86	0.00	0.863 (iii)
TIME TO PEAK (hrs)=	0.45	0.47	0.45
RUNOFF VOLUME (mm)=	44.90	18.79	44.64
TOTAL RAINFALL (mm)=	45.90	45.90	45.90
RUNOFF COEFFICIENT =	0.98	0.41	0.97

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2011):	4.69	1.650	0.45	44.64
+ ID2= 2 (2012):	2.37	0.863	0.45	44.64
ID = 3 (0201):	7.06	2.513	0.45	44.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.7670	0.2467
0.0160	0.1530	2.5170	0.2702
0.2020	0.1763	2.9010	0.2820
0.5480	0.1997	3.3030	0.2937
1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	2.513	0.45	44.64
OUTFLOW: ID= 1 (0902)	7.060	0.955	0.70	37.96

PEAK FLOW REDUCTION [Qout/Qin](%)= 38.02
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.2178

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\27974fd2

| Ptotal= 45.90 mm | Comments: 25Y1HR

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	5.51	0.33	82.62	0.58	66.10	0.83	16.52
0.17	16.52	0.42	154.22	0.67	44.06	0.92	5.51
0.25	44.06	0.50	82.62	0.75	27.54	1.00	5.51

CALIB	
STANDHYD (0301)	Area (ha)= 6.15
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	6.09	0.06
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	202.48	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		154.22	52.95
over (min)		5.00	5.00
Storage Coeff. (min)=		3.28 (ii)	4.22 (ii)
Unit Hyd. Tpeak (min)=		5.00	5.00
Unit Hyd. peak (cms)=		0.27	0.24

				TOTALS
PEAK FLOW	(cms)=	2.31	0.01	2.315 (iii)
TIME TO PEAK	(hrs)=	0.42	0.50	0.42
RUNOFF VOLUME	(mm)=	44.90	18.79	44.64
TOTAL RAINFALL	(mm)=	45.90	45.90	45.90
RUNOFF COEFFICIENT	=	0.98	0.41	0.97

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)				
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.6480	0.2350

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)		6.150	2.315	0.42	44.64
OUTFLOW: ID= 1 (0903)		6.150	0.519	0.75	44.62

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.43
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1888

```
       V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL
```



```
        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M M M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
```


***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

Output filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\494597b5-4f4a-4046-a5fb-e596e61fb4b0\scena
Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\494597b5-4f4a-4046-a5fb-e596e61fb4b0\scena

DATE: 02-03-2020 TIME: 04:44:13

USER:

COMMENTS: _____

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  ************************************************
  ** SIMULATION : 1hr AES 050-Year              **
  ************************************************
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READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB	
STANDHYD (0401)	Area (ha)= 9.90
ID= 1 DT= 1.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	8.91	0.99
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	256.90	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

			TOTALS
Max.Eff.Inten.(mm/hr)=	172.70	65.02	
over (min)	5.00	6.00	
Storage Coeff. (min)=	3.62 (ii)	5.97 (ii)	
Unit Hyd. Tpeak (min)=	5.00	6.00	
Unit Hyd. peak (cms)=	0.28	0.19	
PEAK FLOW (cms)=	3.40	0.14	3.506 (iii)
TIME TO PEAK (hrs)=	0.45	0.57	0.45
RUNOFF VOLUME (mm)=	50.40	22.84	47.64
TOTAL RAINFALL (mm)=	51.40	51.40	51.40
RUNOFF COEFFICIENT =	0.98	0.44	0.93

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0904)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	2.1790	0.2070

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0401)	9.900	3.506	0.45	47.64
OUTFLOW: ID= 1 (0904)	9.900	1.954	0.65	47.64

PEAK FLOW REDUCTION [Qout/Qin](%)= 55.72
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.1857

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

Pre Development

CALIB			
NASHYD (0104)	Area (ha)= 43.69	Curve Number (CN)= 80.0	
ID= 1 DT= 5.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 2.61		

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.475 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 18.926
TOTAL RAINFALL (mm)= 51.399
RUNOFF COEFFICIENT = 0.368

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB			
NASHYD (0102)	Area (ha)= 7.18	Curve Number (CN)= 73.0	
ID= 1 DT= 5.0 min	Ia (mm)= 6.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.40		

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.345 (i)
TIME TO PEAK (hrs)= 0.917
RUNOFF VOLUME (mm)= 14.789
TOTAL RAINFALL (mm)= 51.399
RUNOFF COEFFICIENT = 0.288

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB			
STANDHYD (0101)	Area (ha)= 1.60		

|ID= 1 DT= 5.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		172.70	113.93
over (min)		5.00	5.00
Storage Coeff. (min)=		2.09 (ii)	3.00 (ii)
Unit Hyd. Tpeak (min)=		5.00	5.00
Unit Hyd. peak (cms)=		0.31	0.28

				TOTALS
PEAK FLOW	(cms)=	0.73	0.01	0.731 (iii)
TIME TO PEAK	(hrs)=	0.42	0.42	0.42
RUNOFF VOLUME	(mm)=	50.40	39.83	50.29
TOTAL RAINFALL	(mm)=	51.40	51.40	51.40
RUNOFF COEFFICIENT	=	0.98	0.77	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)			AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3			(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):			1.60	0.731	0.42	50.29
+ ID2= 2 (0102):			7.18	0.345	0.92	14.79
ID = 3 (0601):			8.78	0.761	0.42	21.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)			OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2---> OUT= 1			(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min			0.0000	0.0000	0.0430	0.2830
			0.0000	0.1860	0.0000	0.0000

		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0601)		8.780	0.761	0.42	21.26
OUTFLOW: ID= 1 (0702)		8.780	0.000	3.17	0.01

PEAK FLOW REDUCTION [Qout/Qin](%)= 0.03
TIME SHIFT OF PEAK FLOW (min)=165.00
MAXIMUM STORAGE USED (ha.m.)= 0.1866

ROUTE CHN(0703)		IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

		<---- hydrograph ---->				<-pipe / channel->	
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)		8.78	0.00	3.17	0.01	0.01	0.17
OUTFLOW: ID= 1 (0703)		8.78	0.00	3.58	0.01	0.01	0.17

ROUTE CHN(0704)		IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66
0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21

0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

	<---- hydrograph ---->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.00	3.58	0.01	0.00	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.00	3.83	0.00	0.00	0.10

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB	STANDHYD (0105)	Area (ha)= 3.13	Total Imp(%)= 99.00	Dir. Conn.(%)= 99.00
ID= 1 DT= 5.0 min				

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	3.10	0.03	
Dep. Storage	(mm)=	1.00	6.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	144.45	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		172.70	65.02	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.56 (ii)	3.46 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.29	0.26	
				TOTALS
PEAK FLOW	(cms)=	1.38	0.01	1.385 (iii)
TIME TO PEAK	(hrs)=	0.42	0.42	0.42
RUNOFF VOLUME	(mm)=	50.40	22.84	50.12
TOTAL RAINFALL	(mm)=	51.40	51.40	51.40
RUNOFF COEFFICIENT	=	0.98	0.44	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppD

	ata\Local\Temp\
	388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB	STANDHYD (0103)	Area (ha)= 1.83	Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00
ID= 1 DT= 5.0 min				

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	1.65	0.18	
Dep. Storage	(mm)=	1.00	6.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	110.45	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		172.70	65.02	
over (min)		5.00	5.00	
Storage Coeff. (min)=		2.18 (ii)	4.53 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.31	0.23	
				TOTALS
PEAK FLOW	(cms)=	0.75	0.03	0.778 (iii)
TIME TO PEAK	(hrs)=	0.42	0.50	0.42
RUNOFF VOLUME	(mm)=	50.40	22.84	47.64
TOTAL RAINFALL	(mm)=	51.40	51.40	51.40
RUNOFF COEFFICIENT	=	0.98	0.44	0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0103):	1.83	0.778	0.42	47.64
	+ ID2= 2 (0105):	3.13	1.385	0.42	50.12
	ID = 3 (0602):	4.96	2.163	0.42	49.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1					
DT= 5.0 min		0.0000	0.0000	0.4450	0.1950
		0.0120	0.1170	0.6080	0.2145
		0.0650	0.1365	0.7950	0.2340
		0.1670	0.1560	0.9980	0.2535
		0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	2.163	0.42	49.21
OUTFLOW: ID= 1 (0705)	4.960	0.432	0.75	48.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.96
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1937

ADD HYD (0901)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (0104):	43.69	0.475	3.08	18.93
+ ID2= 2 (0704):	8.78	0.000	3.83	0.00
ID = 3 (0901):	52.47	0.475	3.08	15.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 (0901):	52.47	0.475	3.08	15.76
+ ID2= 2 (0705):	4.96	0.432	0.75	48.71
ID = 1 (0901):	57.43	0.494	3.00	18.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB	
STANDHYD (2011)	Area (ha)= 4.69
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

Max.Eff.Inten.(mm/hr)=	172.70	65.02		
over (min)	5.00	4.00		
Storage Coeff. (min)=	2.89 (ii)	3.79 (ii)		
Unit Hyd. Tpeak (min)=	5.00	4.00		
Unit Hyd. peak (cms)=	0.31	0.29		
				TOTALS
PEAK FLOW (cms)=	1.86	0.01		1.864 (iii)
TIME TO PEAK (hrs)=	0.45	0.47		0.45
RUNOFF VOLUME (mm)=	50.40	22.84		50.12
TOTAL RAINFALL (mm)=	51.40	51.40		51.40
RUNOFF COEFFICIENT =	0.98	0.44		0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef
Ptotal= 51.40 mm	Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB	
STANDHYD (2012)	Area (ha)= 2.37
ID= 1 DT= 1.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

Pre Development

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.17	0.267	92.52	0.517	74.02	0.77	18.50
0.033	6.17	0.283	92.52	0.533	74.02	0.78	18.50
0.050	6.17	0.300	92.52	0.550	74.02	0.80	18.50
0.067	6.17	0.317	92.52	0.567	74.02	0.82	18.50
0.083	6.17	0.333	92.52	0.583	74.02	0.83	18.50
0.100	18.50	0.350	172.70	0.600	49.34	0.85	6.17
0.117	18.50	0.367	172.70	0.617	49.34	0.87	6.17
0.133	18.50	0.383	172.70	0.633	49.34	0.88	6.17
0.150	18.50	0.400	172.70	0.650	49.34	0.90	6.17
0.167	18.50	0.417	172.70	0.667	49.34	0.92	6.17
0.183	49.34	0.433	92.52	0.683	30.84	0.93	6.17
0.200	49.34	0.450	92.52	0.700	30.84	0.95	6.17
0.217	49.34	0.467	92.52	0.717	30.84	0.97	6.17
0.233	49.34	0.483	92.52	0.733	30.84	0.98	6.17
0.250	49.34	0.500	92.52	0.750	30.84	1.00	6.17

				TOTALS
Max.Eff.Inten.(mm/hr)=	172.70	65.02		
over (min)	5.00	4.00		
Storage Coeff. (min)=	2.36 (ii)	3.26 (ii)		
Unit Hyd. Tpeak (min)=	5.00	4.00		
Unit Hyd. peak (cms)=	0.35	0.32		
PEAK FLOW (cms)=	0.97	0.00		0.973 (iii)
TIME TO PEAK (hrs)=	0.45	0.47		0.45
RUNOFF VOLUME (mm)=	50.40	22.84		50.12
TOTAL RAINFALL (mm)=	51.40	51.40		51.40
RUNOFF COEFFICIENT =	0.98	0.44		0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)

1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2011):	4.69	1.864	0.45	50.12
+ ID2= 2 (2012):	2.37	0.973	0.45	50.12
ID = 3 (0201):	7.06	2.837	0.45	50.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)

IN= 2---> OUT= 1

DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.7670	0.2467
0.0160	0.1530	2.5170	0.2702
0.2020	0.1763	2.9010	0.2820
0.5480	0.1997	3.3030	0.2937
1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	2.837	0.45	50.12
OUTFLOW: ID= 1 (0902)	7.060	1.230	0.67	43.44

Pre Development

PEAK FLOW REDUCTION [Qout/Qin](%)= 43.35
TIME SHIFT OF PEAK FLOW (min)= 13.00
MAXIMUM STORAGE USED (ha.m.)= 0.2285

READ STORM

Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\85fbf7ef

Ptotal= 51.40 mm

Comments: 50 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.17	0.33	92.52	0.58	74.02	0.83	18.50
0.17	18.50	0.42	172.70	0.67	49.34	0.92	6.17
0.25	49.34	0.50	92.52	0.75	30.84	1.00	6.17

CALIB

STANDHYD (0201)

ID= 1 DT= 5.0 min

Area (ha)= 6.15
Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)	*TOTALS*
Surface Area	(ha)=	6.09	0.06	
Dep. Storage	(mm)=	1.00	6.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	202.48	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		172.70	65.02	
over (min)		5.00	5.00	
Storage Coeff. (min)=		3.14 (ii)	4.04 (ii)	
Unit Hyd. Tpeak (min)=		5.00	5.00	
Unit Hyd. peak (cms)=		0.27	0.24	
PEAK FLOW (cms)=		2.61	0.01	2.620 (iii)
TIME TO PEAK (hrs)=		0.42	0.42	0.42
RUNOFF VOLUME (mm)=		50.40	22.84	50.12
TOTAL RAINFALL (mm)=		51.40	51.40	51.40
RUNOFF COEFFICIENT =		0.98	0.44	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903)

IN= 2---> OUT= 1

DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	2.620	0.42	50.12
OUTFLOW: ID= 1 (0903)	6.150	0.583	0.75	50.11

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.27
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.2120

```
--------------------------------------------------------------------------------
================================================================================================================

       V    V   I    SSSSS  U   U    A    L             (v 5.1.2002)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.1\VO2\voin.dat

  Output  filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\22e8d209-8a4e-4fc7-9388-b8bcef5
ce2b2\scena
  Summary filename:
C:\Users\wburke\AppData\Local\Civica\VH5\25f4b24a-1c80-4fdc-ba0a-fb8b5f76f2fb\22e8d209-8a4e-4fc7-9388-b8bcef5
ce2b2\scena


DATE: 02-03-2020                          TIME: 04:44:13

USER:



COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------------------------------------
  ************************************************
  ** SIMULATION : 1hr AES 100-Year              **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
|                  |              388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
| Ptotal= 56.80 mm |    Comments: 100 Year 1 Hour AES (Bloor, TRCA)
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.08    6.82 |  0.33  102.24 |  0.58   81.79 |  0.83   20.45
                0.17   20.45 |  0.42  190.85 |  0.67   54.53 |  0.92    6.82
                0.25   54.53 |  0.50  102.24 |  0.75   34.08 |  1.00    6.82

--------------------------------------------------------------------------------

--------------------
| CALIB            |
| STANDHYD (  0401)|   Area    (ha)=   9.90
|ID= 1 DT= 1.0 min |   Total Imp(%)=  90.00   Dir. Conn.(%)=  90.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       8.91         0.99
```



```
     Dep. Storage     (mm)=       1.00         6.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     256.90        40.00
     Mannings n           =      0.013        0.250

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 MIN. TIME STEP.


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.017    6.82 | 0.267  102.24 | 0.517   81.79 |  0.77   20.45
               0.033    6.82 | 0.283  102.24 | 0.533   81.79 |  0.78   20.45
               0.050    6.82 | 0.300  102.24 | 0.550   81.79 |  0.80   20.45
               0.067    6.82 | 0.317  102.24 | 0.567   81.79 |  0.82   20.45
               0.083    6.82 | 0.333  102.24 | 0.583   81.79 |  0.83   20.45
               0.100   20.45 | 0.350  190.85 | 0.600   54.53 |  0.85    6.82
               0.117   20.45 | 0.367  190.85 | 0.617   54.53 |  0.87    6.82
               0.133   20.45 | 0.383  190.85 | 0.633   54.53 |  0.88    6.82
               0.150   20.45 | 0.400  190.85 | 0.650   54.53 |  0.90    6.82
               0.167   20.45 | 0.417  190.85 | 0.667   54.53 |  0.92    6.82
               0.183   54.53 | 0.433  102.24 | 0.683   34.08 |  0.93    6.82
               0.200   54.53 | 0.450  102.24 | 0.700   34.08 |  0.95    6.82
               0.217   54.53 | 0.467  102.24 | 0.717   34.08 |  0.97    6.82
               0.233   54.53 | 0.483  102.24 | 0.733   34.08 |  0.98    6.82
               0.250   54.53 | 0.500  102.24 | 0.750   34.08 |  1.00    6.82

     Max.Eff.Inten.(mm/hr)=     190.85        77.37
               over (min)        5.00         6.00
     Storage Coeff.  (min)=       3.47 (ii)    5.74 (ii)
     Unit Hyd. Tpeak (min)=       5.00         6.00
     Unit Hyd. peak  (cms)=       0.28         0.19
                                                          *TOTALS*
     PEAK FLOW       (cms)=       3.79         0.17          3.925 (iii)
     TIME TO PEAK    (hrs)=       0.45         0.55           0.45
     RUNOFF VOLUME    (mm)=      55.80        26.99          52.92
     TOTAL RAINFALL   (mm)=      56.80        56.80          56.80
     RUNOFF COEFFICIENT   =       0.98         0.48           0.93


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  85.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0904)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |  2.1790      0.2070

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0401)     9.900     3.925      0.45      52.92
   OUTFLOW: ID= 1 (  0904)     9.900     2.174      0.63      52.92

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 55.38
                TIME SHIFT OF PEAK FLOW         (min)= 11.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.2067

--------------------------------------------------------------------------------

--------------------
|    READ STORM    |    Filename: C:\Users\wburke\AppD
|                  |              ata\Local\Temp\
```

	388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB	
NASHYD (0104)	Area (ha)= 43.69 Curve Number (CN)= 80.0
ID= 1 DT= 5.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 2.61

Unit Hyd Qpeak (cms)= 0.639

PEAK FLOW (cms)= 0.566 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 22.579
TOTAL RAINFALL (mm)= 56.802
RUNOFF COEFFICIENT = 0.398

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB	
NASHYD (0102)	Area (ha)= 7.18 Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)= 6.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.40

Unit Hyd Qpeak (cms)= 0.686

PEAK FLOW (cms)= 0.415 (i)
TIME TO PEAK (hrs)= 0.917
RUNOFF VOLUME (mm)= 17.827
TOTAL RAINFALL (mm)= 56.802
RUNOFF COEFFICIENT = 0.314

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

Pre Development

CALIB	
STANDHYD (0101)	Area (ha)= 1.60
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.58	0.02
Dep. Storage	(mm)=	1.00	1.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=	over (min)	190.85	128.41
		5.00	5.00
Storage Coeff.	(min)=	2.01 (ii)	2.88 (ii)
Unit Hyd. Tpeak	(min)=	5.00	5.00
Unit Hyd. peak	(cms)=	0.31	0.28

				TOTALS
PEAK FLOW	(cms)=	0.81	0.01	0.812 (iii)
TIME TO PEAK	(hrs)=	0.42	0.42	0.42
RUNOFF VOLUME	(mm)=	55.80	45.02	55.69
TOTAL RAINFALL	(mm)=	56.80	56.80	56.80
RUNOFF COEFFICIENT	=	0.98	0.79	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 95.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0601)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3	ID1= 1 (0101):	1.60	0.812	0.42	55.69
	+ ID2= 2 (0102):	7.18	0.415	0.92	17.83
	ID = 3 (0601):	8.78	0.851	0.42	24.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0702)		OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1		0.0000	0.0000	0.0430	0.2830
DT= 5.0 min		0.0000	0.1860	0.0000	0.0000

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW :	ID= 2 (0601)	8.780	0.851	0.42	24.73
OUTFLOW:	ID= 1 (0702)	8.780	0.012	2.25	3.48

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.40
TIME SHIFT OF PEAK FLOW (min)=110.00

MAXIMUM STORAGE USED (ha.m.)= 0.2130

ROUTE CHN(0703)
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	88.25	0.0500	
0.61	88.00	0.0500	
1.21	87.75	0.0500	
1.82	87.50	0.0300	Main Channel
2.20	87.35	0.0300	Main Channel
2.62	87.50	0.0300	Main Channel
3.31	87.75	0.0500	
3.99	88.00	0.0500	
4.59	88.22	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	87.39	.585E+00	0.0	0.17	15.03
0.08	87.43	.234E+01	0.0	0.27	9.47
0.11	87.46	.527E+01	0.0	0.36	7.23
0.15	87.50	.936E+01	0.0	0.44	5.97
0.20	87.55	.163E+02	0.1	0.55	4.75
0.25	87.60	.251E+02	0.1	0.63	4.13
0.29	87.64	.357E+02	0.2	0.70	3.72
0.34	87.69	.483E+02	0.2	0.76	3.43
0.39	87.74	.627E+02	0.3	0.81	3.19
0.44	87.79	.789E+02	0.5	0.90	2.90
0.49	87.84	.970E+02	0.6	0.97	2.67
0.53	87.88	.117E+03	0.8	1.04	2.50
0.58	87.93	.139E+03	1.0	1.10	2.37
0.63	87.98	.162E+03	1.2	1.15	2.27
0.68	88.03	.188E+03	1.4	1.19	2.18
0.73	88.08	.215E+03	1.7	1.24	2.10
0.77	88.12	.244E+03	2.0	1.27	2.04
0.82	88.17	.275E+03	2.3	1.31	1.98
0.87	88.22	.308E+03	2.7	1.35	1.93

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0702)	8.78	0.01	2.25	3.48	0.11	0.36
OUTFLOW: ID= 1 (0703)	8.78	0.01	2.33	3.48	0.11	0.36

ROUTE CHN(0704)
IN= 2---> OUT= 1	Routing time step (min)'= 5.00

<------ DATA FOR SECTION (1.1) ------>

Distance	Elevation	Manning	
0.00	86.75	0.0500	
4.89	86.50	0.0500	
9.78	86.25	0.0500 /0.0300	Main Channel
14.71	86.00	0.0300	Main Channel
49.80	86.25	0.0300 /0.0500	Main Channel
59.69	86.50	0.0500	
69.22	86.75	0.0500	

<---------- TRAVEL TIME TABLE ---------->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.04	86.04	.986E+02	0.0	0.10	166.66

0.07	86.07	.394E+03	0.1	0.15	104.99
0.11	86.11	.887E+03	0.2	0.20	80.12
0.14	86.14	.158E+04	0.4	0.24	66.14
0.18	86.18	.246E+04	0.7	0.28	57.00
0.21	86.21	.355E+04	1.2	0.32	50.47
0.25	86.25	.483E+04	1.8	0.35	45.54
0.29	86.29	.649E+04	2.9	0.43	37.84
0.33	86.33	.825E+04	4.2	0.49	33.03
0.37	86.37	.101E+05	5.7	0.54	29.69
0.42	86.42	.121E+05	7.4	0.59	27.21
0.46	86.46	.141E+05	9.3	0.64	25.29
0.50	86.50	.163E+05	11.4	0.68	23.75
0.54	86.54	.185E+05	13.7	0.72	22.48
0.58	86.58	.209E+05	16.3	0.75	21.40
0.62	86.62	.233E+05	19.0	0.79	20.49
0.67	86.67	.259E+05	21.9	0.82	19.70
0.71	86.71	.285E+05	25.0	0.85	19.00
0.75	86.75	.313E+05	28.3	0.88	18.38

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 (0703)	8.78	0.01	2.33	3.48	0.04	0.10
OUTFLOW: ID= 1 (0704)	8.78	0.01	5.83	3.42	0.03	0.10

READ STORM	Filename: C:\Users\wburke\AppD ata\Local\Temp\ 388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB	
STANDHYD (0105)	Area (ha)= 3.13
ID= 1 DT= 5.0 min	Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.10	0.03
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	144.45	40.00
Mannings n	=	0.013	0.250
Max.Eff.Inten.(mm/hr)=		190.85	77.37
over (min)		5.00	5.00
Storage Coeff.	(min)=	2.46 (ii)	3.33 (ii)
Unit Hyd. Tpeak	(min)=	5.00	5.00
Unit Hyd. peak	(cms)=	0.30	0.26

		TOTALS
PEAK FLOW	(cms)=	1.541 (iii)
TIME TO PEAK	(hrs)=	0.42
RUNOFF VOLUME	(mm)=	55.51
TOTAL RAINFALL	(mm)=	56.80
RUNOFF COEFFICIENT	=	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB
STANDHYD (0103) | Area (ha)= 1.83
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.65	0.18
Dep. Storage (mm)=	1.00	6.00
Average Slope (%)=	1.00	2.00
Length (m)=	110.45	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	190.85	77.37
over (min)	5.00	5.00
Storage Coeff. (min)=	2.09 (ii)	4.36 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.23

		TOTALS
PEAK FLOW (cms)=	0.83	0.03	0.867 (iii)
TIME TO PEAK (hrs)=	0.42	0.42	0.42
RUNOFF VOLUME (mm)=	55.80	26.99	52.92
TOTAL RAINFALL (mm)=	56.80	56.80	56.80
RUNOFF COEFFICIENT =	0.98	0.48	0.93

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0602)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0103):	1.83	0.867	0.42	52.92
+ ID2= 2 (0105):	3.13	1.541	0.42	55.51
ID = 3 (0602):	4.96	2.409	0.42	54.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0705)
IN= 2---> OUT= 1
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.4450	0.1950
0.0120	0.1170	0.6080	0.2145
0.0650	0.1365	0.7950	0.2340
0.1670	0.1560	0.9980	0.2535
0.2940	0.1755	1.4680	0.2632

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0602)	4.960	2.409	0.42	54.56
OUTFLOW: ID= 1 (0705)	4.960	0.542	0.75	54.06

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.49
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.2071

ADD HYD (0901)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0104):	43.69	0.566	3.08	22.58
+ ID2= 2 (0704):	8.78	0.007	5.83	3.42
ID = 3 (0901):	52.47	0.571	3.08	19.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0901)
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 (0901):	52.47	0.571	3.08	19.37
+ ID2= 2 (0705):	4.96	0.542	0.75	54.06
ID = 1 (0901):	57.43	0.591	3.00	22.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB
STANDHYD (2011) | Area (ha)= 4.69
ID= 1 DT= 1.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

IMPERVIOUS PERVIOUS (i)

Pre Development

Surface Area	(ha)=	4.64	0.05
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.82	0.267	102.24	0.517	81.79	0.77	20.45
0.033	6.82	0.283	102.24	0.533	81.79	0.78	20.45
0.050	6.82	0.300	102.24	0.550	81.79	0.80	20.45
0.067	6.82	0.317	102.24	0.567	81.79	0.82	20.45
0.083	6.82	0.333	102.24	0.583	81.79	0.83	20.45
0.100	20.45	0.350	190.85	0.600	54.53	0.85	6.82
0.117	20.45	0.367	190.85	0.617	54.53	0.87	6.82
0.133	20.45	0.383	190.85	0.633	54.53	0.88	6.82
0.150	20.45	0.400	190.85	0.650	54.53	0.90	6.82
0.167	20.45	0.417	190.85	0.667	54.53	0.92	6.82
0.183	54.53	0.433	102.24	0.683	34.08	0.93	6.82
0.200	54.53	0.450	102.24	0.700	34.08	0.95	6.82
0.217	54.53	0.467	102.24	0.717	34.08	0.97	6.82
0.233	54.53	0.483	102.24	0.733	34.08	0.98	6.82
0.250	54.53	0.500	102.24	0.750	34.08	1.00	6.82

Max.Eff.Inten.	(mm/hr)=	190.85	77.37	
	over (min)	5.00	4.00	
Storage Coeff.	(min)=	2.78 (ii)	3.64 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	4.00	
Unit Hyd. peak	(cms)=	0.32	0.30	
				TOTALS
PEAK FLOW	(cms)=	2.07	0.01	2.075 (iii)
TIME TO PEAK	(hrs)=	0.45	0.47	0.45
RUNOFF VOLUME	(mm)=	55.80	26.99	55.51
TOTAL RAINFALL	(mm)=	56.80	56.80	56.80
RUNOFF COEFFICIENT	=	0.98	0.48	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

READ STORM | Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm | Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB
STANDHYD (2012) | Area (ha)= 2.37
ID= 1 DT= 1.0 min | Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

Pre Development

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.35	0.02
Dep. Storage	(mm)=	1.00	6.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	125.70	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.017	6.82	0.267	102.24	0.517	81.79	0.77	20.45
0.033	6.82	0.283	102.24	0.533	81.79	0.78	20.45
0.050	6.82	0.300	102.24	0.550	81.79	0.80	20.45
0.067	6.82	0.317	102.24	0.567	81.79	0.82	20.45
0.083	6.82	0.333	102.24	0.583	81.79	0.83	20.45
0.100	20.45	0.350	190.85	0.600	54.53	0.85	6.82
0.117	20.45	0.367	190.85	0.617	54.53	0.87	6.82
0.133	20.45	0.383	190.85	0.633	54.53	0.88	6.82
0.150	20.45	0.400	190.85	0.650	54.53	0.90	6.82
0.167	20.45	0.417	190.85	0.667	54.53	0.92	6.82
0.183	54.53	0.433	102.24	0.683	34.08	0.93	6.82
0.200	54.53	0.450	102.24	0.700	34.08	0.95	6.82
0.217	54.53	0.467	102.24	0.717	34.08	0.97	6.82
0.233	54.53	0.483	102.24	0.733	34.08	0.98	6.82
0.250	54.53	0.500	102.24	0.750	34.08	1.00	6.82

Max.Eff.Inten.	(mm/hr)=	190.85	77.37	
	over (min)	5.00	4.00	
Storage Coeff.	(min)=	2.26 (ii)	3.13 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	4.00	
Unit Hyd. peak	(cms)=	0.35	0.33	
				TOTALS
PEAK FLOW	(cms)=	1.08	0.00	1.081 (iii)
TIME TO PEAK	(hrs)=	0.45	0.47	0.45
RUNOFF VOLUME	(mm)=	55.80	26.99	55.51
TOTAL RAINFALL	(mm)=	56.80	56.80	56.80
RUNOFF COEFFICIENT	=	0.98	0.48	0.98

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0201)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2011):		4.69	2.075	0.45	55.51
+ ID2= 2 (2012):		2.37	1.081	0.45	55.51
ID = 3 (0201):		7.06	3.157	0.45	55.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0902)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	1.7670	0.2467

	0.0160	0.1530	2.5170	0.2702
	0.2020	0.1763	2.9010	0.2820
	0.5480	0.1997	3.3030	0.2937
	1.0770	0.2232	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0201)	7.060	3.157	0.45	55.51
OUTFLOW: ID= 1 (0902)	7.060	1.498	0.65	48.83

PEAK FLOW REDUCTION [Qout/Qin](%)= 47.47
TIME SHIFT OF PEAK FLOW (min)= 12.00
MAXIMUM STORAGE USED (ha.m.)= 0.2377

READ STORM	Filename: C:\Users\wburke\AppData\Local\Temp\388d05f5-b393-488a-b44b-69a739b9be50\c5177c45
Ptotal= 56.80 mm	Comments: 100 Year 1 Hour AES (Bloor, TRCA)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.08	6.82	0.33	102.24	0.58	81.79	0.83	20.45
0.17	20.45	0.42	190.85	0.67	54.53	0.92	6.82
0.25	54.53	0.50	102.24	0.75	34.08	1.00	6.82

CALIB STANDHYD (0301) ID= 1 DT= 5.0 min	Area (ha)= 6.15 Total Imp(%)= 99.00 Dir. Conn.(%)= 99.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	6.09	0.06	
Dep. Storage	(mm)=	1.00	6.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	202.48	40.00	
Mannings n	=	0.013	0.250	
Max.Eff.Inten.(mm/hr)=		190.85	77.37	
over (min)		5.00	5.00	
Storage Coeff.	(min)=	3.01 (ii)	3.88 (ii)	
Unit Hyd. Tpeak	(min)=	5.00	5.00	
Unit Hyd. peak	(cms)=	0.28	0.25	
				TOTALS
PEAK FLOW	(cms)=	2.91	0.01	2.920 (iii)
TIME TO PEAK	(hrs)=	0.42	0.42	0.42
RUNOFF VOLUME	(mm)=	55.80	26.99	55.51
TOTAL RAINFALL	(mm)=	56.80	56.80	56.80
RUNOFF COEFFICIENT	=	0.98	0.48	0.98

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 85.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR(0903) IN= 2---> OUT= 1 DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)

	0.0000	0.0000	0.6480	0.2350

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0301)	6.150	2.920	0.42	55.51
OUTFLOW: ID= 1 (0903)	6.150	0.646	0.75	55.50

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.13
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.2348

APPENDIX C

SWM INFRASTRUCTURE DESIGN

APPENDIX C-1

LID DESIGN

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LID Design

Catchment ID	Catchment Area (ha)	5 mm Retention Volume (m^3)	Test Pit Number	Infiltration Rate[1] (mm/hr)	Granular Depth (m)	Minimum Contact Area[2] (m^2)	Proposed LID Dimensions			Total Volume (m^3)
							Length (m)	Width (m)	Contact Area (m^2)	
C2	1.60	80	TP 9 &10	5.6	0.27	744	500	1.5	750	80.6
FS1/C4	4.69	235	TP 3, 7 & 8	9.3	0.45	1,313	188	7	1316	235.0

Notes:

1 Infiltration Rate includes a factor of Safety of 2.5.

2 Equation 4.3, MOE SWM Planning and Design Manual, March 2003,

$A_{min} = 1000 * V / (IR * n * \Delta t)$ [1]

V = Retention Volume to be Infiltrated (m^3)

IR = Infiltration Rate of Surrounding Native Soil (mm/hr)

n = Porosity of the Storage Me = 0.4

Δt = Drawdown Time = 48 hrs

APPENDIX C-2

SWM FACILITY FS1

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SWM FACILITY FS1 DESIGN SHEET

DRAINAGE AREA COMPOSITION			
LOCATION	**AREA (ha)**	**TIMP (%)**	**XIMP (%)**
High Density	7.06	99%	99%
Weighted Total	**7.06**	**99%**	**99%**

PERMANENT POOL REQUIREMENTS	
Type of Pond	Wet Pond
Protection Level	Level 1 - Enhanced

Using Table 3.2 in MOE *Stormwater Management Planning and Design Manual*			
Storage Volume (m^3/ha) for Impervious Level			
35%	55%	70%	85%
140	**190**	**225**	**250**

Unit Volume (m^3/ha) = $\left(\frac{99\% - 70\%}{85\% - 70\%}\right)\left(250 - 225\right) + 225$

= 273 m^3/ha

\- 40 m^3/ha of extended detention

= **233** m^3/ha

Permanent Pool Required = (233 m^3/ha) (7.06 ha)

= 1,647 m^3

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SWM FACILITY FS1 STORAGE CALCULATIONS

FOREBAY PERMANENT POOL					
Elevation (m)	**Depth (m)**	**Area (m^2)**	**Avg. Area (m^2)**	**Volume (m^3)**	**Total Volume (m^3)**
84.50		783			**0**
	1.00		783	783	
85.50		783			783
MAIN CELL PERMANENT POOL					
Elevation (m)	**Depth (m)**	**Area (m^2)**	**Avg. Area (m^2)**	**Volume (m^3)**	**Total Volume (m^3)**
84.50		1567			**0**
	1.00		1,567	1,567	
85.50		1567			1,567
TOTAL PERMANENT POOL VOLUME (m^3) →					**2,350**
ACTIVE VOLUMES					
Elevation (m)	**Depth (m)**	**Area (m^2)**	**Avg. Area (m^2)**	**Volume (m^3)**	**Total Volume (m^3)**
85.50		2,350			0
	0.65		2,350	1,528	
86.15		2,350			1,528
	0.40		2,350	940	
86.55		2,350			2,467
	0.20		2,350	470	
86.75		2,350			2,938
TOTAL ACTIVE VOLUME (m^3) →					**2,938**

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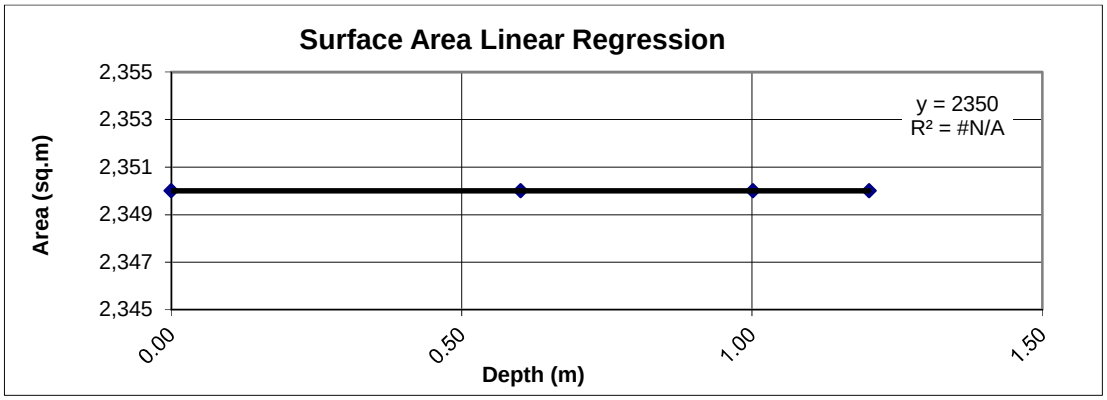
SWM FACILITY FS1 EXTENDED DETENTION CALCULATIONS

*Based on the relationship - Ap = C_2 * h + C_3*

Normal Water Level =	85.50	m
Orifice Size =	0.097	m
Orifice Level (midpoint of orifice) =	85.55	m

Pond Elevation (m)	Head above Orifice (m)	Pond Surface Area (m^2)	Pond Volume (m^3)
85.50	0.00	2,350	0
86.15	0.60	2,350	1,528
86.55	1.00	2,350	2,467
86.75	1.20	2,350	2,938



Using Equation 4.11 in MOE *Stormwater Management Planning and Design Manual*

$$t = \frac{0.66C_2h^{1.5} + 2C_3h^{0.5}}{2.75Ao}$$

where: C_2 = 0.0, C_3 = 2,350

Area =	7.06	ha
Rainfall Depth =	25.00	mm
Runoff Depth =	23.84	mm
U/S Infiltration Volume =	235	m^3
Runoff Volume =	Area x Runoff Depth - U/S Infiltration	
=	7.06 x 23.84 - 235	
=	1,448	m^3
Pond Elevation =	86.12	m
ho =	0.57	m
t =	174253	s
t =	48	hr
Required Drawdown Time =	48	hr
Orifice Discharge Equation =	Qo = C * Ao * (2 g h)$^{1/2}$	
Orifice area (Ao)=	0.0074	m^2
Orifice Coefficient (C) =	0.62	
Q_{peak} =	0.015	m^3/s

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SWM FACILITY FS1 STAGE STORAGE DISCHARGE

	Structure		Orifice Plate	Rectangular Cutout		
	Diameter / Height (m)		0.10	0.40		
	Length (m)		N/A	3.90		
	Sill / Invert Elevation (m)		85.50	86.15		
	Coefficient, C		0.62	1.50 to 1.81	0.62	
	Elevation (m)	Volume (m^3)	Orifice Flow (m^3/s)	Weir Flow (m^3/s)	Orifice Flow (m^3/s)	Total Outflow (m^3/s)
Permanent Pool	85.50	0	0.000	0.000	-	0.000
First Flush	86.15	1,528	0.016	0.000	-	0.016
	86.20	1,645	0.016	0.066	-	0.083
	86.25	1,763	0.017	0.185	-	0.202
	86.30	1,880	0.018	0.344	-	0.362
	86.35	1,997	0.018	0.530	-	0.548
	86.40	2,115	0.019	0.773	-	0.791
	86.45	2,232	0.019	1.057	-	1.077
	86.50	2,350	0.020	1.381	-	1.401
	86.55	2,467	0.020	1.746	-	1.767
	86.60	2,585	0.021	2.107	2.142	2.128
	86.65	2,702	0.021	2.496	2.347	2.517
	86.70	2,820	0.022	2.879	2.535	2.901
Top of Structure	86.75	2,937	0.022	3.281	2.710	3.303

SWM FACILITY FS1 OPERATING CHARACTERISTICS

FS1	1 Hour AES			
	Allowable	Outflow	Volume	Elevation
2-Year	**0.423**	0.033	1,552	86.16
5-Year	0.824	0.354	1,866	86.29
10-Year	1.134	0.603	2,022	86.36
25-Year	1.556	0.955	2,178	86.43
50-Year	1.890	1.230	2,285	86.47
100-Year	2.231	1.498	2,377	86.51

FS1	12 Hour AES			
	Allowable	Outflow	Volume	Elevation
2-Year	0.519	0.211	1,769	86.25
5-Year	**0.814**	0.437	1,922	86.32
10-Year	**1.025**	0.534	1,988	86.35
25-Year	**1.298**	0.65	2,402	86.52
50-Year	**1.506**	0.723	2,075	86.38
100-Year	**1.716**	0.794	2,106	86.40

APPENDIX C-3

SWM FACILITY FS2

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SWM FACILITY FS2 DESIGN SHEET

DRAINAGE AREA COMPOSITION			
LOCATION	**AREA (ha)**	**TIMP (%)**	**XIMP (%)**
Municipal ROW	1.83	90%	90%
High Density	3.13	99%	99%
Weighted Total	**4.96**	**96%**	**96%**

PERMANENT POOL REQUIREMENTS	
Type of Pond	Wet Pond
Protection Level	Level 1 - Enhanced

Using Table 3.2 in MOE *Stormwater Management Planning and Design Manual*			
Storage Volume (m^3/ha) for Impervious Level			
35%	55%	70%	85%
140	**190**	**225**	**250**

Unit Volume (m^3/ha) = $\left(\frac{96\% - 70\%}{85\% - 70\%}\right)\left(250 - 225\right) + 225$

= 268 m^3/ha

\- 40 m^3/ha of extended detention

= **228** m^3/ha

Permanent Pool Required = (228 m^3/ha) (4.96 ha)

= **1,130** **m^3**

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SWM FACILITY FS2 STORAGE CALCULATIONS

FOREBAY PERMANENT POOL					
Elevation (m)	**Depth (m)**	**Area (m^2)**	**Avg. Area (m^2)**	**Volume (m^3)**	**Total Volume (m^3)**
86.50		650			**0**
	1.00		650	650	
87.50		650			650
MAIN CELL PERMANENT POOL					
Elevation (m)	**Depth (m)**	**Area (m^2)**	**Avg. Area (m^2)**	**Volume (m^3)**	**Total Volume (m^3)**
86.50		1300			**0**
	1.00		1,300	1,300	
87.50		1300			1,300
TOTAL PERMANENT POOL VOLUME (m^3) →					**1,950**
EXTENDED DETENTION					
Elevation (m)	**Depth (m)**	**Area (m^2)**	**Avg. Area (m^2)**	**Volume (m^3)**	**Total Volume (m^3)**
87.50		**1,950**			0
	0.65		1,950	1,268	
88.15		1,950			1,268
TOTAL EXTENDED DETENTION VOLUME (m^3) →					**1,268**
ACTIVE VOLUMES					
Elevation (m)	**Depth (m)**	**Area (m^2)**	**Avg. Area (m^2)**	**Volume (m^3)**	**Total Volume (m^3)**
88.15		1,950			1,268
	0.35		1,950	682	
88.50		1,950			1,950
	0.35		1,950	682	
88.85		1,950			2,632
TOTAL ACTIVE VOLUME (m^3) →					**2,632**

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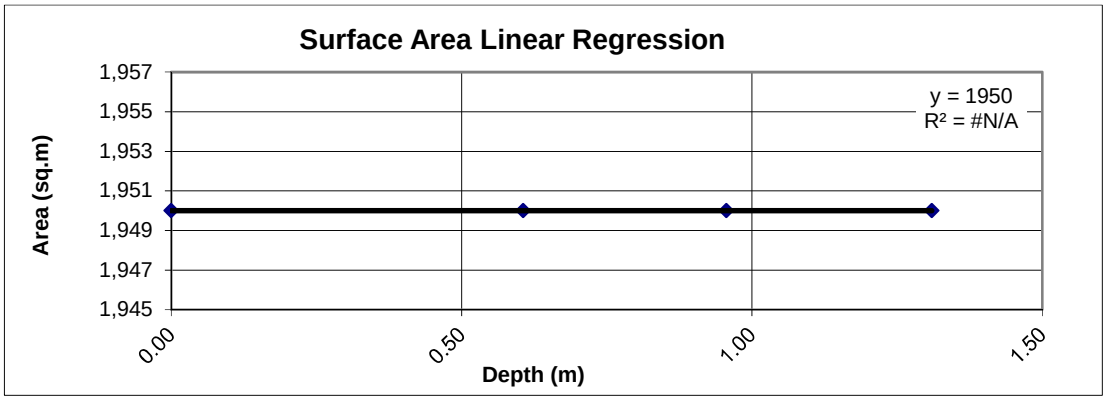
SWM FACILITY FS2 EXTENDED DETENTION CALCULATIONS

*Based on the relationship - Ap = C_2 * h + C_3*

Normal Water Level = 87.50 m
Orifice Size = 0.088 m
Orifice Level (midpoint of orifice) = 87.54 m

Pond Elevation (m)	Head above Orifice (m)	Pond Surface Area (m^2)	Pond Volume (m^3)
87.50	0.00	1,950	0
88.15	0.61	1,950	1,268
88.50	0.96	1,950	1,950
88.85	1.31	1,950	2,632



Using Equation 4.11 in MOE *Stormwater Management Planning and Design Manual*

$$t = \frac{0.66C_2h^{1.5} + 2C_3h^{0.5}}{2.75Ao}$$

where: C_2 = 0.0, C_3 = 1,950

Area =	4.96	ha
Rainfall Depth =	25.00	mm
Runoff Depth =	23.23	mm
U/S Infiltration Volume =	0	m^3
Runoff Volume =	Area x Runoff Depth - U/S Infiltration	
=	4.96 x 23.23 - 0	
=	1,152	m^3
Pond Elevation =	88.09	m
ho =	0.55	m
t =	172433	s
t =	48	hr
Required Drawdown Time =	48	hr
Orifice Discharge Equation =	Qo = C * Ao * (2 g h)$^{1/2}$	
Orifice area (Ao)=	0.0061	m^2
Orifice Coefficient (C) =	0.62	
Q_{peak} =	0.012	m^3/s

13:302
Durham Live

SWM FACILITY FS2 STAGE STORAGE DISCHARGE

	Structure		Orifice Plate	Ellipitical Pipe		
	Diameter / Height (m)		0.088	0.735		
	Length (m)		N/A	1.145		
	Sill / Invert Elevation (m)		87.50	88.10		
	Coefficient, C		0.62	1.41 to 1.46	0.80	
	Elevation (m)	Volume (m^3)	Orifice Plate Flow (m^3/s)	Weir Flow (m^3/s)	Orifice Flow (m^3/s)	Total Outflow (m^3/s)
Permanent Pool	87.50	0	0.000	0.000	0.000	0.000
First Flush	88.10	1,170	0.012	0.000	0.000	0.012
	88.15	1,267	0.013	0.018	0.000	0.031
	88.20	1,365	0.014	0.051	0.000	0.065
	88.25	1,462	0.014	0.096	0.000	0.110
	88.30	1,560	0.015	0.153	0.000	0.167
	88.35	1,657	0.015	0.213	0.000	0.228
	88.40	1,755	0.015	0.278	0.000	0.294
	88.45	1,852	0.016	0.351	0.000	0.367
	88.50	1,950	0.016	0.429	0.000	0.445
	88.55	2,047	0.017	0.508	0.000	0.525
	88.60	2,145	0.017	0.591	0.000	0.608
	88.65	2,242	0.018	0.682	0.000	0.699
	88.70	2,340	0.018	0.777	0.000	0.795
	88.75	2,437	0.018	0.876	0.000	0.894
	88.80	2,535	0.019	0.979	0.000	0.998
Top of Structure	88.85	2,632	0.019	-	1.449	1.468

SWM FACILITY FS2 OPERATING CHARACTERISTICS

FS2	1 Hour AES			
	Allowable	**Outflow**	**Elevation**	**Culvert**
2-Year	**0.113**	0.011	88.05	0.108
5-Year	**0.227**	0.09	88.23	0.209
10-Year	**0.318**	0.188	88.32	0.291
25-Year	**0.445**	0.321	88.42	0.404
50-Year	**0.550**	0.432	88.49	0.494
100-Year	**0.662**	0.542	88.56	0.591

FS2	12 Hour AES			
	Allowable	**Outflow**	**Elevation**	**Culvert**
2-Year	0.292	0.067	88.20	0.288
5-Year	0.472	0.174	88.31	0.454
10-Year	0.614	0.258	88.38	0.579
25-Year	0.835	0.348	88.44	0.749
50-Year	1.019	0.414	88.49	0.883
100-Year	1.200	0.475	88.52	1.023

OUTLET 1
CULVERT C0□
CONCRETE BOX CULVERT
1.□3□1.22□□□.31□

OUTLET 2
CULVERT C0□
CONCRETE BOX CULVERT
1.22□1.22□□1.□3□

CULVERT C03
CONCRETE BOX CULVERT
0.□1□0.□□□□.20□

CN/METROLINX RAIL CORRIDOR

STUDY AREA

WEST STREET

KELLINO STREET

C□
1□.□□

C3
2.1□

C□
□.2□

C□
□0.3□

C2
11.13

C1
□2□

MAS2-1

WESTERN
MAS2-1

CENTRAL
SWD3-2

SWD3-2

EASTERN
SWD3-2
PSW

SPILL

SPILL

SQUIRES BEACH ROAD

CHURCH STREET

BAYLY STREET

23.1□
□□

LEGEND:

- STUDY AREA
- EXISTING ZONING LIMIT
- WATERCOURSE
- EPHEMERAL DRAINAGE FEATURE
- WETLAND LIMIT □BY BEACON ENVIRONMENTAL□
- BUFFER LIMIT
- OUTLET LOCATION AND ID (1)
- PRE DEVELOPMENT DRAINAGE BOUNDARY TO OUTLET
- PRE DEVELOPMENT SUB DRAINAGE BOUNDARY
- CATCHMENT ID (C1) / AREA □□□□ (7.25)
- FLOW DIRECTION

SCALE 1:2000

DURHAM LIVE RE-ZONING APPLICATION - EXISTING DRAINAGE CONDITIONS

SABOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

PROJECT NUMBER	FIGURE NUMBER
13:302	2

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CN/METROLINX RAIL CORRIDOR

SWM FACILITY FS1

FUTURE PARKING LOT

CASINO DISTRICT

REFER TO SITE GRADING BY RT BURSIDE FOR CASINO GRADING

KELLINO STREET

PHASE 1 FILM STUDIO DISTRICT

MARKET AND ENTERTAINMENT DISTRICT

NORTH - SOUTH ROAD

BIORETENTION SWALE

SQUIRES BEACH ROAD

PHASE 2 FILM STUDIO DISTRICT

SWM FACILITY FS2

CHURCH STREET

BAYLY STREET

LEGEND:

EXISTING GRADE — EX 99.89

PROPOSED GRADE — 98.78

PROPOSED SLOPE — 2.0%

30m WETLAND BUFFER

MAXIMUM 3:1 SLOPE

PROPOSED SWALE

EXISTING ZONING LIMIT

OVERLAND FLOW ROUTE

SCALE 1:2000

DURHAM LIVE RE-ZONING APPLICATION - PRELIMINARY GRADING PLAN

SABOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

PROJECT NUMBER	FIGURE NUMBER
13:302	3

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OUTLET 1
CULVERT C0□
CONCRETE BOX CULVERT
1.□3□1.22□□□.31□

SWM FACILITY FS1
TANK SIZE 2□3□0□²

OUTLET 2
CULVERT C0□
CONCRETE BOX CULVERT
1.22□1.22□□1.□3□

CULVERT C03
CONCRETE BOX CULVERT
0.□1□0.□□□□□.20□

CN/METROLINX RAIL CORRIDOR

STUDY AREA

C3
2.1□

1

2

FS1

INV □□.□□

INV □□.□0

PL1
2.3□

MAS2-1

C□N
12.□□

WEST STREET

NOTE: REFER TO DRAWINGS C-S1 AND C-S2 BY R.J. BURNSIDE FOR DETAILED SERVICING INFORMATION FOR CASINO SITE PLAN AND KELLINO STREET

KELLINO STREET

OUTLET 3

ROW
1.□3

SQUIRES BEACH ROAD

FS1
□.□□

INFILTRATION TRENCH

C□
□3.□□

WESTERN MAS2-1

C□S
□.1□

TO C2
1.□0

FS2
3.13

FS2

BIO-RETENTION SWALE

C2
□.1□

C1
□.□0

EASTERN SWD3-2 PSW

SWM FACILITY FS2
TANK SIZE 1□□0□²

CENTRAL SWD3-2

SWDS 2

STUDY AREA

BAYLY STREET

23.1□
□□

OUTLET □

CHURCH STREET

LEGEND:

- STUDY AREA
- EXISTING ZONING LIMIT
- WATERCOURSE
- WETLAND LIMIT □BY BEACON ENVIRONMENTAL□
- BUFFER LIMIT
- OUTLET LOCATION AND ID — 2
- POST DEVELOPMENT DRAINAGE BOUNDARY TO OUTLET
- POST DEVELOPMENT SUB DRAINAGE BOUNDARY
- CATCHMENT ID — CI / 7.25
- AREA □□□□
- FLOW DIRECTION
- PROPOSED STORM SEWER
- EXISTING STORM SEWER

SCALE 1:2000

DURHAM LIVE RE-ZONING APPLICATION - PROPOSED STORMWATER MANAGEMENT CONCEPT

SABOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

PROJECT NUMBER	FIGURE NUMBER
13:302	□

CN/METROLINX RAIL CORRIDOR

SWM FACILITY FS1

FUTURE PARKING LOT

CASINO DISTRICT

NOTE: REFER TO DRAWINGS C-S1 AND C-S2 BY R.J. BURNSIDE FOR DETAILED SERVICING INFORMATION FOR CASINO SITE PLAN AND KELLINO STREET

KELLINO STREET

PHASE 1 FILM STUDIO DISTRICT

MARKET AND ENTERTAINMENT DISTRICT

SQUIRES BEACH ROAD

PHASE 2 FILM STUDIO DISTRICT

NORTH - SOUTH ROAD

CHURCH STREET

SWM FACILITY FS2

EX 300Ø WATERMAIN

EX 300Ø WATERMAIN

EX 750Ø WATERMAIN

BAYLY STREET

LEGEND:

- STORM/SANITARY MANHOLE
- PROPOSED STORM SEWER WITH DIRECTION OF FLOW
- PROPOSED SANITARY SEWER WITH DIRECTION OF FLOW
- EXISTING SANITARY SEWER WITH DIRECTION OF FLOW
- EXISTING WATERMAIN
- 30m WETLAND BUFFER
- EXISTING ZONING LIMIT

SCALE 1:2000

DURHAM LIVE RE-ZONING APPLICATION - PRELIMINARY SERVICING PLAN

SABOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

PROJECT NUMBER	FIGURE NUMBER
13:302	6

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