FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT

HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

PREPARED FOR:
HUNTINGWOOD TRAILS (COLLINGWOOD) LTD.

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
40 HURON STREET, SUITE 301
COLLINGWOOD, ONTARIO
L9Y 4R3

JANUARY 2011

UPDATED JULY 2019

CFCA FILE NO. 281-2769

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CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev. 0	January 2009	Functional Servicing & Stormwater Management Report
Rev. 1	January 2011	Functional Servicing & Stormwater Management Report
Rev. 2	July 2019	Functional Servicing & Stormwater Management Report Addendum

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1.0 INTRODUCTION

CF Crozier & Associates Inc. (Crozier) was retained by Huntingwood Trails (Collingwood) Ltd. to complete a Functional Servicing and Stormwater Management Report in relation to the Huntingwood Trails Development. The proposed development is located on a 49 ha property legally described as part of Lots 47, 48 & 49 Concession 12, Town of Collingwood. The subject lands are bounded by Highway 26 and Silver Creek Drive to the north, the Silver Glen Preserve Subdivision to the east, the Forest Drive Subdivision to the west and the Georgian Trail to the south. **Figure 1** shows the location of the proposed development.

Silver Creek bisects the site dividing the proposed land into two development areas: east of Silver Creek (Development Area #1) and west of Silver Creek (Development Area #2). To the east of Silver Creek the plan is comprised of approximately 920 m of future roadway, 52 townhouse units, and 10 semi-detached units. To the west of Silver Creek, the plan is comprised of 88 single family lots, 20 semi-detached units, approximately 880 m of future public roads and a stormwater management facility. The subject concept plan reflecting a total unit count of 170 units is presented as **Figure 2**.

2.0 BACKGROUND & OMB HISTORY

In relation to the applications for an Official Plan Amendment, Zoning By-Law Amendment and Draft Plan of Subdivision for the subject lands, three reports were prepared by Crozier in 2011:

- Functional Servicing & Stormwater Management Report,
- Natural Hazards Study and,
- Traffic Impact Study

The purpose of this report, "Functional Servicing & Stormwater Management Report, Huntingwood Trails Development", is to update and outline the proposed internal servicing and stormwater management strategy for the subject lands.

Following the preparation of this study in June 2012, Huntingwood appealed its application for an Official Plan Amendment to the Ontario Municipal Board. In connection with this appeal, a Decision and Order regarding the OMB hearing was issued on July 31, 2014 outlining the approved development area extents as well as requirements of future approvals. Refer to **Appendix F** for supporting OMB documentation including the Water, Wastewater and Stormwater Management Witness Statement and the Official Plan decision documents.

This update to the 2011 Functional Servicing and Stormwater Management Report has been prepared in accordance with the following requirements of the OMB approved Official Plan Amendment with respect to Development Area #2 (DA #2) which states as follows:

h. All current and future Planning Act applications…shall be supported by:

I. *A water and sanitary sewer servicing strategy that examines potential regional opportunities and constraints;*
II. *A stormwater management plan that includes a strategy for addressing Silver Creek drainage patterns and spill areas;*

Notwithstanding that the approved OPA did not specifically require further study regarding functional servicing and stormwater management for Development Area #1 (DA #1), this report has been updated to address the functional servicing for the latest proposed Draft Plan of Subdivision.

3.0 SITE DESCRIPTION

Historic use of the subject property has been primarily for agriculture. A small farm house and barn set back approximately 350 m from Silver Creek Drive remain onsite. Much of the property is currently utilized as Agricultural pasture lands.

The site generally slopes from the southwest to the northeast with an average slope of less than 1%. The main branch of Silver Creek enters the subject site along the southern property line after passing beneath the Georgian Trail via a former railway bridge. Silver Creek exhibits a pool - riffle sequence throughout the site with an average stream width of approximately 5 metres, average bankfull depth of approximately 1.5 metres and a bankfull width of 7.5m at the largest amplitude meander. Downstream of the site, Silver Creek passes beneath Highway 26 via a 7.5 m x 1.5 m concrete box culvert en route to its eventual outlet at Georgian Bay.

Across the site, soils are classified as sandy loams, loamy sands and loams of Hydrologic Soil Groups 'A' to 'BC' per the Soil Survey of Simcoe County, 1962. To the west of Silver Creek soils are of the Alliston and Tioga origin. To the east of Silver Creek soils are of the Alliston, Wiarton, Granby and Parkhill origins. Our experience with the adjacent Silver Glen Preserve property indicates that bedrock contact for the subject lands is expected within 2 metres of the existing ground surface.

Vegetation to the west of Silver Creek is primarily pasture with clumps of sparse trees. In some instances tree cover has been cleared right up to the creek edge, while in other areas a small buffer of tree cover has been maintained. All drainage from the western portion of the site outlets to Silver Creek upstream of Highway 26.

Vegetal cover to the east of Silver Creek is more varied. A strip of pasture land has been established running alongside the creek edge and the Highway 26 right of way. The remaining lands abutting the Georgian Trail and adjacent Silver Glen Preserve subdivision are a mixture of forested and meadow areas. During the springtime a number of closed depressions contain standing water. Drainage for the eastern portion of the site also drains from southwest to northeast and is primarily collected and conveyed in an intermittent drainage channel which outlets under Highway 26 via a 5.5 m x 1.7 m box culvert. There is virtually no surface runoff contributing to Silver Creek from the lands located east of the creek.

A portion of the northeast corner of the property is part of a Ministry of Natural Resources (MNR) Provincially Significant Wetland (PSW). A number of closed depressions in the southeast quadrant of the site have also been identified as wetlands. These environmental areas are identified on **Figure 3**, Existing Natural Hazards & Site Constraints Plan. Refer to the Environmental Impact Statement (EIS) Addendum prepared by Crozier & Associates (2019) for further details.

4.0 REGIONAL DEVELOPMENT CONTEXT

Forest Drive Residential Subdivision

The Forest Drive Subdivision is an existing development to the west of the Subject Lands. The subdivision consists of detached residential units and is serviced with municipal watermain and private individual septic systems.

Consulate Development

The Consulate Development is a proposed development north of the subject lands, north of Highway 26. This Development is currently Draft Plan Approved to permit a combination of

townhouse and apartment residential units on a series of private roads. The Consulate development is to be serviced via public watermain and an internal gravity sanitary sewer collection that discharges to a future sewage pumping station (SPS) to be located just northeast of the intersection of Highway 26 and Silver Glen Boulevard.

Silver Glen Preserve Residential Subdivision

The Silver Glen Preserve Residential Subdivision contains townhouse residential which are fully serviced. This subdivision is almost completely built out and serviced via public watermain and private sanitary sewer. The sanitary sewer discharges to an existing pumping station currently operated by the Town of Collingwood directly adjacent the east limit of the Huntingwood lands. Silver Glen Blvd was constructed to public roadway standards up to the Sewage Pumping Station onsite. Internal roadways fronting townhouse units within Silver Glen Preserve Residential Subdivision are private and controlled by the respective Condominium Corporations.

5.0 ROAD STANDARD

Access to the site will be provided from the existing surrounding municipal roadway network. Access to the western development area (DA #2) will be provided off of Silver Creek Drive. The proposed access roadway from Silver Creek Drive and internal roadways within the western development area will be Town of Collingwood standard 20 m urban section complete with curb and gutter and 8.5m width asphalt platform.

Access to the eastern development area (DA#1) will be provided via an extension of Silver Glen Boulevard, into the subject lands. Silver Glen Boulevward currently provides access to the adjacent Silver Glen Preserve Subdivision. The proposed access will consist of an 8.5 m asphalt platform complete with curb and gutter contained within a 20 m ROW. The proposed 20 m municipal ROW will pass through the center of the eastern development area and terminate in a cul-de-sac.

The pavement structure for all roads will be constructed as per municipal standards and the recommendations of any geotechnical reports completed for the subject lands during detailed design.

6.0 SANITARY SERVICING

The sanitary servicing strategy for the Huntingwood development is reflected on **Figure 4** and discussed below. Sanitary design flow calculations have been included in **Appendix A**.

6.1 Existing Sanitary Services

Connections to the existing Collingwood sanitary sewer distribution system will be feasible. The existing Silver Glen Preserve development east of the site is the closest available outlet for sanitary servicing for the subject development. Internal roadways within the Silver Glen Preserve development contain 200mm dimeter private internal gravity sewers. The servicing of Silver Glen Preserve also included the construction of a Sewage Pumping Station located directly east of the Site (the "SPS"). This SPS currently utilizes a 150mm diameter forcemain which ultimately outlets to the Town gravity sewer system on Highway 26 east of Princeton Shores Boulevard. A second 250mm diameter forcemain was installed to the SPS to allow for future expansion of servicing within the service area.

A proposed regional sewage pumping station is planned as a condition of development for the Consulate property (the "Regional SPS"). This Regional SPS is proposed to be located just northeast

of the intersection of Highway 26 and Silver Glen Boulevard and will utilize the existing twin forcemain that currently serves the Silver Glen Preserve Development. Upon the implementation of the Regional SPS the Town has indicated a preference to decommission the existing SPS and re-route Silver Glen gravity sewers to the new regional station.

Until such time, the SPS represents an interim servicing alternative to the Huntingwood Trails development. With relatively minor modification, the existing pumping station can be retrofitted to accommodate approximately 100 units of the Huntingwood site (ie. First Phase). Subsequent phase(s) of the Huntingwood development will require the implementation of the Regional SPS. It is anticipated that agreements will be required between affected parties concerning the future implementation of the Regional SPS and the overall service area.

6.2 Proposed Internal Sanitary Services

The east and west development portions of the subject lands will be entirely serviced by gravity sewers. The proposed routing of the internal sanitary sewer will follow the alignment of the internal roadway network per municipal standards. One exception to this routing is the connection between the east and west development areas, which requires the sanitary sewer to cross the Silver Creek floodplain.

Crossing of the Silver Creek floodplain with the sanitary sewer was preferred over a routing along Highway 26 and Silver Glen Boulevard. The installation of sewer along Highway 26 would be much more demanding and constrained from a construction standpoint due to the proximity to existing roads and traffic, narrow servicing corridor, multiple culvert crossings and works alongside Provincially Significant Wetland for almost the entire installation. For this reason, installation along Highway 26 is not proposed.

Preliminary sewage demands for the site were estimated using the following design figures based on the most current revision of the Town of Collingwood Development Standards:

- Residential Population Densities
    - Single-Detached: 2.9 Persons Per Unit
    - Semi-Detached: 2.7 Persons Per Unit
    - Townhouses: 2.4 Persons Per Unit
- Average Residential Flow Rate – 450 L/cap/day
- Residential Peaking Factor – 4.0 (Harmon Formula)
- Infiltration – 0.23 L/s/ha

Based on these values it is estimated that peak sanitary flow from the site will be **12.8 L/sec** for a total design population of 461. Refer to **Appendix B** for detailed calculations including a breakdown of the sanitary flows for each Development Area and the total development.

6.3 Wastewater Treatment Plant Capacity

Allocation within the Collingwood wastewater treatment plant is typically issued on a "first come first served" basis as development approvals proceed and initial phases of development come on board. However, we understand that capacity in the wastewater treatment plant exists today to support future growth within the Town of Collingwood, including this Development.

Further, the Town is currently undertaking a Master Servicing Plan update for Collingwood which we understand will included sanitary models of existing Town infrastructure. Review of any upgrades to the existing downstream sanitary infrastructure conveyance system to support the proposed

development will be completed during detailed design and as development approvals move forward towards implementation.

6.4 Regional Servicing Opportunities

Servicing of the Huntingwood Site and in particular extension of gravity services to the western portion of the site across Silver Creek opens the door for future regional servicing opportunities to the benefit of the Town of Collingwood. Gravity sewer from the western development area can be extended to Silver Creek Drive if desired by the Municipality, thus providing a sanitary outlet to existing homes currently on individual onsite septic systems within the Forest Drive Subdivision and Silver Creek Drive. This would be a public benefit by providing opportunities to provide full services to existing partially serviced lots.

Oversizing of the sanitary sewer within the Huntingwood development to accommodate approximately 85 existing homes on Silver Creek Drive and the Forest Drive Subdivision can be completed as part of detailed design, subject to satisfactory agreements between the Developer and the Town of Collingwood.

7.0 POTABLE WATER SUPPLY

Potable water for the development will be supplied by the Town of Collingwood municipal water distribution system. The Town of Collingwood water distribution model will be updated with the subject development to confirm available fire flows during the detailed design stage of the project.

The proposed water distribution supply network is presented in **Figure 5**. Water system design flow calculations have been included in **Appendix A**.

7.1 Existing Services

Connections to the existing Collingwood water distribution system will be straightforward and feasible. An existing 300 mm diameter watermain is located in the south shoulder of Silver Creek Drive; a 200 mm diameter watermain exists in the west shoulder of Forest Drive; and a 150 mm diameter watermain is located in the south shoulder of Craigleith Court. As frontage for the west development area (DA#2) is restricted to the Silver Creek Drive ROW, a live tap connection to the existing 300 mm diameter watermain is the preferred servicing alternative.

Similarly, review of existing infrastructure in the vicinity of the eastern development area (DA #1) of the subject site reveals a 300 mm diameter watermain in the north shoulder of Highway 26; a 150 mm diameter watermain in the west shoulder of Silver Glen Boulevard; and a 150mm diameter watermain in the west shoulder of Preservation Road within the Silver Glen Preserve Residential Subdivision. The east development area will be connected to the existing 150 mm diameter watermain on Silver Glen Boulevard and looped to the south at Preservation Road as illustrated on **Figure 4**.

7.2 Proposed Internal Water Distribution

Local watermain with individual service connections for each unit will follow the alignment of internal roadways per municipal standards. The size of the watermain required in order to provide fire protection will be confirmed with the Town of Collingwood in the detailed design process. Fire hydrant and valving spacing will also be determined during detailed design, subject to applicable municipal standards.

Based on the current practices in the Town of Collingwood, the municipality will assume ownership of the watermain distribution network within municipally assumed ROW's. This typically includes all mains, hydrants, valves and services up to and including curb stops.

An interconnection between the water systems for the east and west development areas is proposed across Silver Creek. The proposed Silver Creek crossing will be completed in conjunction with the proposed sanitary sewer crossing. This interconnection of watermain between the east and west development areas will provide redundancy to the water distribution network.

Preliminary water demands for the site were estimated using the following design figures based on the most current revision of the Town of Collingwood Development Standards:

- Residential Population Densities
    - Single-Detached: 2.9 Persons Per Unit
    - Semi-Detached: 2.7 Persons Per Unit
    - Townhouses: 2.4 Persons Per Unit
- Average Residential Flow Rate – 450 L/cap/day
- Peak Day/Peak Hour Factor – 2.5/4.5
- Fire Flow – per Fire Underwriters Survey (FUS) or minimum 7,000 L/min (117 L/sec)

Based on the above criteria, the proposed 170 residential lots (and total anticipated design population of 461), it is estimated that water demands for the site are as follows:

- Average Day – 2.4 L/sec
- Max Day – 6.0 L/sec
- Peak Hour – 10.8 L/sec
- Fire Flow – 117 L/sec

Refer to **Appendix A** for detailed calculations including a breakdown of the water demand for each Development Area and the development.

7.3 Water Treatment Plant Capacity

Allocation within the Collingwood water treatment plant is typically issued on a "first come first served" basis as development approvals proceed and initial phases of development come on board. Currently, we understand that capacity in the water treatment plant is operating at approximately 80% of its design capacity requires expansion to provide flows for future longterm growth in Collingwood. The Town of Collingwood has indicated they are initiating a Municipal Class Environmental Assessment for the expansion of the water treatment plant with the expectation that the required upgrades would be designed and constructed within a four to six year timeframe.

7.4 Regional Servicing Opportunities

Under current conditions, the watermain within Silver Glen Preserve dead-ends at the south limit of the development at Preservation Road. It is proposed to provide a secondary watermain connection from this area to the internal network within Huntingwood Trails. This connection will provide reliable supply and improved water quality within the water network.

It is likewise proposed to provide a secondary watermain connection across Silver Creek to improve redundancy to the western development area and to the Forest Drive Subdivision. As such, existing residents of the service area would be provided the benefit of an alternate watermain feed should

service be interrupted in the trunk main along Highway 26 between Silver Glen Preserve and Silver Creek Drive as has occurred in the past.

8.0 UTILITIES

The Huntingwood Trails Development will be serviced with natural gas, telephone, cable TV and hydro. All such utilities are available along Highway 26 and the surrounding public streets.

9.0 STORMWATER MANAGEMENT & SITE DRAINAGE

The management of stormwater and site drainage for the proposed development will comply with the policies and standards of the various agencies including the Town of Collingwood, NVCA, and Ministry of the Environment.

The stormwater management criteria that will be met with the development of Huntingwood Trails are as follows:

- Water Quality Control
  - "Enhanced Protection" given Georgian Bay as ultimate receiver.
- Water Quantity Control
  - "Post to Pre" control for storms up to and including the 100 year event.
- Water Balance
  - "Post to Pre" water balance to identified onsite wetland areas.
- Erosion Control
  - Use of source control and extended detention.
- Development Standard
  - Urban cross section complete with curb & gutter;
  - Lot grading at 2% optimum; and,
  - Minor and major drainage system to convey frequent and infrequent rainfall/runoff events, respectively.

A Natural Hazards Study outlining constraints associated with the Silver Creek floodplain and erosion limits has been completed as an adjunct to this report and is submitted under separate cover.

9.1 Existing Drainage Conditions

In order to accurately determine onsite drainage flow routes and pre-development drainage conditions, high resolution air photography contours were obtained for subject lands from First Base Solutions (2008). Review of these contours illustrates the site generally slopes from the southwest to the northeast with an average slope of less than 1%.

West of Silver Creek (Catchment 101) the site drains primarily by overland sheet flow. A number of existing residences along Silver Creek Drive, Forest Drive and Craigleith Court contribute drainage along the perimeter of the site. Drainage enters the site through a broad drainage draw behind existing residences on Silver Creek Drive. A series of small drainage draws onsite, collect sheet flow and direct drainage towards Silver Creek Drive. At Silver Creek Drive, a shallow ditch located on the subject property collects and directs drainage eastward beneath a culvert in the site access driveway. Flow from the shallow ditch is discharged into Silver Creek approximately 60 m upstream

of Highway 26. All drainage from the western portion of the site ultimately outlets upstream of Highway 26 to the main branch of Silver Creek.

East of Silver Creek (Catchment 102) drainage patterns are significantly different. Overbank areas east of Silver Creek slope away from the creek, directing surface drainage out of the Silver Creek watershed in a north easterly direction. In essence, the east bank of the creek acts as a drainage divide. Land east of this divide fall to the northeast eventually draining toward Highway 26 and Silver Glen Boulevard (referred to as the "Northeast Outlet" for the remainder of this report). All drainage through the Northeast Outlet exits the Silver Creek watershed.

Onsite reconnaissance has confirmed the presence of an intermittent drainage channel through the eastern development area which outlets to a 5.5 m x 1.7 m box culvert beneath Highway 26 at the northeast tip of the property. This intermittent drainage channel collects sheet flow from the site, as well as drainage from property to the south which are conveyed beneath the Georgian Trail via twin 450 mm diameter culverts. The undulating nature of the property is characterized by a number of closed depressions which store site drainage in storm or melting events prior to overflow to the above noted intermittent drainage channel.

Pre-Development drainage conditions are illustrated on **Figure 7**.

9.2 Proposed Drainage Conditions

The development has been designed to respect and potentially enhance Silver Creek by implementing a buffer setback from both sides of the watercourse. No residential buildings will be placed within this buffer and further no roadway watercourse crossings will be required. The nature of Silver Creek and the associated floodplain have been considered and addressed in the development of the Draft Plan and will continue to be addressed during detailed design of such elements as Stormwater Management (SWM) facilities and drainage ditches / outfalls. Any works required within the buffer setback of the Silver Creek will ultimately be subject to NVCA Regulation.

Following the requirements of the Town of Collingwood, the development will incorporate a "dual" drainage system consisting of storm sewer, catchbasins and lot drainage swales (minor system) and the use of the roadway and ditches (major system). The proposed drainage system including overland flow routes, storm sewer alignment and required stormwater management facilities is reflected on **Figure 6**.

Given the natural segmentation of the site caused by Silver Creek and associated buffers, runoff generated from the proposed development will be collected and treated in two separate stormwater management facilities. One facility will be required to service the western development area while onsite controls will be required to service the eastern development area. As such, the east and west development areas are independent and would allow for future phasing of the development.

External drainage entering the subject site will be routed around the proposed development to an appropriate outlet in its pre-development state. As such, external lands were excluded from hydrologic modeling used to confirm SWM facility sizing as detailed further in subsequent sections of this report.

The West SWM Facility will receive runoff from approximately 10.0 ha of the western development area (Catchment 2101). The hydraulics of the SWM facility govern the grades across the site, beginning with the entrance road profile. The entrance roadway will also be graded to provide flood protection to existing residences along Silver Creek Drive which are currently flood susceptible.

Rear to front drainage for lots has been applied in all cases where feasible, to ensure runoff generated from the proposed development will reach the SWM Facility. Roads within the western development area generally drain north following the natural contours of the site to a low point in the main access road adjacent the West SWM Facility. The West SWM Facility will outlet to Silver Creek upstream of Highway 26 as in the pre-development condition.

There are three components to the stormwater management system that supports DA #1 (East Drainage area). The first area is the access road providing access to Development Area 1. The second is the rear yard drainage from the lots, which will be routed through lot level BMPs (infiltration trenches) and discharged to the pocket wetlands. The third component is the approximately 1.7 ha of front yard drainage and approximately 300m of road, which the townhouses and semis front onto.

Stormwater generated from the road segments that do not have lots fronting onto it will be directed through a treatment train approach via the use of pretreatment devices within catchbasins (i.e. goss traps, increased sumps, CB shields) and outletting through linear LIDs such as infiltration trenches during the quality storm event and overflow outlets during larger storm events.

Lots backing onto the internal wetlands will incorporate split drainage allowing runoff from rear yards and rooftops to drain to the wetlands; the front half of lots and driveways will drain to the proposed roadway and storm sewer network. The split lot grading will maintain a water balance to the onsite wetlands. Preliminary calculations regarding the wetland water balance have been included with this report in **Appendix B**. Detailed grading design for the site will be completed in order to balance the pre to post development runoff contribution to the wetland area as appropriate at the detailed design stage.

Within DA# 1, Stormwater management quantity control for the 1.7 ha of road, cul-de-sac and front yards will be provided through the use of underground storage within an oversized storm sewer, underground storage chambers and downstream orifice control. This area will have both quantity and quality control provided and is the focus of the Stormwater management controls for DA #1. The storage chambers will be open bottomed to promote infiltration as a water balance and erosion control mitigation measure. Pre-treatment will be provided within the catchbasins (i.e. goss trap, increased sump, CB shield) and end of pipe quality treatment will be provided via an oil/grit separator.

Drainage from the buffer setback along Silver Creek (Catchment 2102), central woodland / wetland tract (Catchment 2104) and northern PSW (Catchment 2105) will be conveyed to the respective natural outlet as in a pre-development condition.

Figure 8 illustrates the post-development drainage patterns of the proposed development.

9.3 Stormwater Quantity Control

Hydrologic modeling was prepared for both pre-development and post-development site conditions. The SCS Type II and Chicago 4-hour rainfall distributions were applied to the hydrologic model; the SCS distribution produced the greatest runoff peaks and volumes and was thus used throughout this analysis. The purpose of the modeling was to determine the detention storage volumes and corresponding SWM control sizing required on-site to ensure post-development peak flow rates do not exceed pre-development levels (ie. quantity control).

The stormwater management hydrologic computer program SWMHYMO (Sabourin, 1998) was used to model the pre and post development site conditions and determine peak flow rates discharging to the Silver Creek and the Northeast Outlet. The principal hydrologic parameters used in the modeling analysis are summarized in Table 1 below and are based on supporting computations found in **Appendix C**.

Table 1: Pre and Post-Development Hydrologic Parameters

Catchment ID	101	102	2101	2102	2103	2104	2105
Scenario	Pre	Pre	Post	Post	Post	Post	Post
Drainage Area (ha)	16.92	34.12	10.02	6.91	1.70	10.9	21.5
Total Imperviousness (%)	0	0	50	0	65	0	3
Directly Connected Imperviousness (%)	0	0	30	0	40	2	4
Curve Number (CN)[1]	53.2	58.4	54.0	52.8	74	61.6	53.9
Time of Concentration (hrs)	1.55	2.14	0.52	1.52	0.27	1.10	3.50
Time to Peak (hrs	1.04	1.43	0.35	1.02	0.18	0.74	2.35

1. Curve number presented as utilized in SWMHYMO modeling. CN reflects composite curve number for rural catchments modeled using NASHYD routine and curve number for pervious areas only for urban catchments using STANDHYD routine.

The CALIB NASHYD command was used in the model to simulate the pre-development hydrographs. This hydrograph is used to simulate runoff from rural/undeveloped areas. The CALIB STANDHYD command was applied to the post-development conditions of the subject lands.

Hydrologic models were prepared for design storm events including the 2 year, 5 year, 10 year, 25 year, 50 year, 100 year and Regional storms. The hydrologic modeling output is found in **Appendix D**.

9.3.1 Modeling Results

Based on the modeling, the pre-development and post-development (uncontrolled) peak flow rates generated are summarized in Table 2. It is evident that left unattenuated, post-development peak flows to the Silver Creek and the Northeast Outlet would increase.

Table 2: Pre & Post-Development Peak Flow Rates (Uncontrolled)

Return Period (Years)	Pre-development (Silver Creek Outlet) (m^3/s)	Post-development (Silver Creek Outlet) (m^3/s)	Pre-development (Northeast Outlet) (m^3/s)	Post-development (Northeast Outlet) (m^3/s)
2	0.09	0.59	0.15	0.17
5	0.15	0.85	0.26	0.26
10	0.20	1.05	0.34	0.33
25	0.27	1.31	0.47	0.42
50	0.33	1.53	0.57	0.50
100	0.39	1.77	0.68	0.58
Regional	0.67	1.08	1.38	1.17

Using the ROUTE RESERVOIR command in the SWMHYMO modeling, it was possible to determine the volume of detention storage required to attenuate the post-development peak flows to pre-development levels based on a preliminary storage – discharge relationship. It was concluded that approximately 3,950 m^3 of active detention storage for the West SWM facility and 360 m^3 of active underground storage for the East development area is required to meet the flood (quantity) control requirements of all storm events including the 100 year return period. The detention storage requirements are summarized in Table 3 and Table 4 below. Preliminary storage-discharge relationships have been included in **Appendix E**.

Table 3: West SWM Facility Storage Characteristics

Return Period (Years)	Peak Inflow (m^3/s)	Storage (m^3)	Release Rate (m^3/s)
2	0.58	1380	0.03
5	0.84	1990	0.03
10	1.03	2435	0.04
25	1.29	3045	0.04
50	1.49	3565	0.04
100	1.73	3860	0.09
Regional	0.88	4705	0.75

Table 4: East SWM Storage Characteristics

Return Period (Years)	Peak Inflow (m^3/s)	Storage (m^3)	Release Rate (m^3/s)
2	0.13	240	0.05
5	0.19	290	0.10
10	0.24	330	0.12
25	0.29	360	0.23
50	0.33	360	0.33
100	0.38	360	0.38
Regional	0.19	360	0.19

Note: For the 25 yr, 50yr, 100yr storm events, the underground storm system will surcharge and drainage will 'spill' along the overland flow route within the Right of Way

With the use of the East and West SWM controls post-development peak flows will respect the pre-development flows at the Silver Creek and the Northeast Outlet. The "post to pre" peak flows are summarized in Table 5 below. It is noted that the uncontrolled flows emanating from the undisturbed areas of the site (Catchment 2102, 2104 and 2105) have been accounted for in the total peak flow values shown in Table 5. Detailed modeling output is included in **Appendix D**.

Table 5: Total "Post to Pre" Peak Flow Rates (Controlled)

Return Period (Years)	Pre-development (Silver Creek Outlet) (m^3/s)	Post-development (Silver Creek Outlet) (m^3/s)	Pre-development (Northeast Outlet) (m^3/s)	Post-development (Northeast Outlet) (m^3/s)
2	0.09	0.06	0.15	0.14
5	0.15	0.09	0.26	0.25
10	0.20	0.11	0.34	0.33
25	0.27	0.15	0.47	0.43
50	0.33	0.17	0.57	0.51
100	0.39	0.21	0.68	0.60
Regional	0.67	0.96	1.38	1.18

Note: "Post to Pre" control of Regional event is not required.

9.4 Stormwater Quality Control

It will be necessary to implement Best Management Practices (BMP's) to address site water quality requirements. A review of all the environmental constraints and site specific conditions was completed. It was concluded that an end-of-pipe wetland facility for the West SWM Facility and an end-of-pipe Oil/Grit Separator for the east lands would be provided. Lot level and linear BMP's may also be implemented, subject to detailed grading design and soil/water table considerations. The selected BMP's incorporate erosion and sediment control measures "to protect life and property

and to minimize adverse impacts on water quality, and the natural environment both internal and external to the site" (NVCA, May 2000).

Since Georgian Bay is the ultimate receiver of drainage from the subject lands, and given the stringent standards of the NVCA, stormwater management facilities must be designed to meet the "enhanced protection" level. Enhanced protection provides an 80% long term suspended solids removal rate.

Based on the total site imperviousness of approximately 50% contributing to the West SWM Facility, the water quality storage volume for a stormwater wetland facility is 99 m^3/ha (MOE, 2003). This is made up of 40 m^3/ha extended detention volume and 59 m^3/ha permanent pool volume.

The preliminary SWM facility sizing is based on the following criteria, consistent with the standards of MOE (2003):

- Drainage Area 10.02 ha
- Permanent Pool 600 m^3
- Extended Detention 405 m^3
- Permanent Pool Depth 0.3 m maximum
- Active Storage Depth 1.5 m maximum (1.0 m maximum for storms <10 year event)
- Side Slopes 5:1 typical (3:1 maximum)
- Freeboard Depth 0.3 m minimum

Quality treatment for the east road drainage area that does not have lots fronting onto it will be directed through a treatment train approach via the use of pretreatment devices within catchbasins (i.e. goss traps, increased sumps, CB shields) and outletting through linear LIDs such as infiltration trenches during the quality storm event, and overflow outlets during larger storm events.

Stormwater management quality control for the 1.7 ha of road, cul-de-sac and front yards will be provided through the use of a treatment train approach, due to having a drainage area of less than 5 ha as is recommended for the use of an end-of-pipe facility. Pre-treatment will be provided within the catchbasins (i.e. goss trap, increased sump, CB shield) and end of pipe quality treatment will be provided via an oil/grit separator. Preliminary Oil/Grit Separator sizing is summarized below in Table 6, with a sizing report included in **Appendix D**. The underground storage chambers will be open bottomed to promote infiltration as a water balance and erosion control mitigation measure.

Table 6: Total Preliminary Oil/Grit Sizing Criteria

Catchment	Contributing Drainage Area (ha)	% Impervious	[1]Target Total Suspended Solids Removal (%)	Target Annual Runoff Volume Treated (%)	Oil/Grit Separator Unit	Total Suspended Solids Removal (%)	Total Annual Runoff Volume Treated (%)
2103	**2.00**	60	80	90	STC750	86	98

The areas allotted for stormwater management in the subject plan are adequate in order to provide the level of treatment as described above in accordance with the standards of the NVCA and MOE. The details with respect to the specific design including provisions for access, side slopes, detailed grading, inlet inverts, length to width ratios, sediment forebays, and control structures will be confirmed/finalized during the detailed engineering design stage of the project. Likewise, permits/instruments such as Environmental Compliance Approval (MOE) and Fill Permit (NVCA) will

be secured at that time. Preliminary designs for the west and east SWM facilities/controls have been presented in **Figure 9** and **Figure 10** respectively.

9.4.1 Stormwater Erosion Control Geomorphology

Erosion control will also be integrated into the design of the stormwater management system. These measures will provide protection to Silver Creek from changes in geomorphology as a result of the proposed development.

Erosion control is principally achieved by incorporating extended detention into the operation of the west end-of-pipe SWM facility. Sizing is based on providing between 24 and 48 hours extended detention of the runoff produced following a short duration (4 hour) 25 mm storm event. The volume of extended detention for the runoff produced from a 25 mm event was found to exceed the extended detention volume as mandated by MOE stormwater management sizing criteria. Accordingly, the higher extended detention volume from the 25 mm event runoff was used in this assessment. The extended detention volume from the 25 mm event are listed below.

- West SWM Facility 870 m^3

For the eastern lands, linear and lot level controls will be incorporated for extended detention of the 25mm storm event. The underground storage chambers will be open bottomed to promote infiltration as a water balance and erosion control mitigation measure. The rear roof and yard areas will likewise be directed to lot level controls. Stormwater generated from the road that does not have lots fronting onto it will be directed through a treatment train approach via the use of pretreatment devices within catchbasins (i.e. goss traps, increased sumps, CB shields) and outletting through linear LIDs such as infiltration trenches during the quality storm event and overflow outlets during larger storm events.

A Natural Hazards Study has been completed to determine the hazard limits associated with Silver Creek. The specifics of the level of protection requirements for the geomorphic condition of Silver Creek and the Northeast Outlet will be confirmed at the detailed design stage. The protection will consist of extended detention active storage volume provided within the operation of the stormwater facilities as described above and restriction to development in erosion prone areas as presented further in the accompanying Natural Hazards Study, submitted under separate cover.

10.0 CONCLUSIONS

Based on the foregoing, we conclude that the proposed Huntingwood Trails development can be adequately serviced.

1. Access to the site will be by way of frontage onto Silver Creek Drive and extension of Silver Glen Boulevard.
2. The proposed development will be fully serviced by gravity sewer ultimately discharging to the Regional Sanitary Pumping Station to be located on the Consulate Development site north of Highway 26 ("The Preserve at Georgian Bay"). Interim servicing for the Huntingwood development is possible via the existing pumping station at the Silver Glen Preserve Residential Subdivision, in advance of the Regional SPS. The timing of the subject development will affect the agreements and infrastructure cost sharing required.
3. The domestic water supply will be provided from existing watermains located on Silver Creek Drive and Silver Glen Boulevard. Sufficient pressure and flows exist in the service area to supply the proposed development.

4. Utilities including power, gas, telephone and cable services are available as plant is located on the perimeter roads surrounding the subject lands.
5. "Post to Pre" water balance to on-site wetland areas will be provided through detailed site grading design.
6. Stormwater management controls will be implemented for the proposed development to provide water quantity, water quality and erosion control. The proposed stormwater management facility / controls will treat runoff from the future development area of the site prior to discharging to the respective pre-development outlet. The current concept plan includes areas of adequate size to accommodate the SWM requirements of the site.
7. The proposed development will provide the opportunity for public benefit to the Town of Collingwood by providing a gravity sanitary sewer outfall for extension of services to existing residences currently on septic systems within the Forest Subdivision and watermain redundancy to the Collingwood west end service area.

Therefore, we recommend approval of the Planning Applications for the subject lands from the perspective of engineering servicing requirements.

Respectfully Submitted,

C.F. CROZIER & ASSOCIATES INC.

Jonathan M. Proctor, P.Eng.
Associate

C.F. CROZIER & ASSOCIATES INC.

Rebecca Alexander, P.Eng.
Project Manager

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APPENDIX A

Sanitary / Water Design Flows

CROZIER
CONSULTING ENGINEERS

Project: Huntingwood
Project No.: 281-2769
Date: 25-Jul-2019
By: JE

Huntingwood Development Servicing
Population Projection

		Development Area #1 (East)	Development Area #2 (West)	Total Site
Land area		4.0 ha	10.0 ha	14.0 ha
Number of Residential Units				
Unit Type	**PPU (Collingwood)**			
Single-Detached	**2.9**	0 units	88 units	88 units
Semi-Detached	**2.7**	10 units	20 units	30 units
Townhouses	**2.4**	52 units	0 units	52 units
Total		62 units	108 units	170 units
Residential Population		**152** persons	**309** persons	**461** persons

CROZIER
CONSULTING ENGINEERS

Project: Huntingwood
Project No.: 281-2769
Date: 25-Jul-2019
By: JE

Huntingwood Development Servicing
Sanitary Design Criteria

		Dev Area #1	*Dev Area #2*	*Total Site*	
Total Development Area		4.0	10.0	14.0	ha
Future population		152	309	461	people
Sewage Flows					
Residential (per Town of Collingwood Standards)		450	450	450	L/C-day
Infiltration (per Town of Collingwood Standards)		0.23	0.23	0.23	L/s-ha
Total Design Sewage Flows					
Average Daily Flow	Residential	0.8	1.6	2.4	L/sec
	Infiltration	0.9	2.3	3.2	L/sec
	Total (ADF)	**1.7**	**3.9**	**5.6**	**L/sec**
Peak Flow	Peak Factor	4.2	4.1	4.0	
	Residential	3.3	6.6	9.6	L/sec
	Infiltration	0.9	2.3	3.2	L/sec
	Total (PF)	**4.2**	**8.9**	**12.8**	**L/sec**

Notes: Peak Factor (M) = 1+(14/(4+(P/1000)^0.5)) (per MOE)

CROZIER CONSULTING ENGINEERS

Project: Huntingwood
Project No.: 281-2769
Date: 25-Jul-2019
By: JE

Huntingwood Development Servicing
Potable Water Design Criteria

		Dev Area #1	*Dev Area #2*	*Total Site*	
Total Residential Area		4.0	10.0	14.0	ha
Future Population		152	309	461	people
Water Flows					
Residential (per MOE)		450	450	450	L/C-day
Total Water Flows					
Average Daily Flow	Residential	0.8	1.6	2.4	L/sec
	Total (ADF)	0.8	1.6	**2.4**	**L/sec**
Maximum Day Demand	Peak Factor (per MOE)	2.5	2.5	2.5	
	Residential	2.0	4.0	6.0	L/sec
	Total (MDD)	2.0	4.0	**6.0**	**L/sec**
Peak Hour Flow	Peak Factor (per MOE)	4.50	4.50	4.50	
	Residential	3.6	7.2	10.8	L/sec
	Total (PHF)	3.6	7.2	**10.8**	**L/sec**

APPENDIX B

Water Balance Analysis

CROZIER
CONSULTING ENGINEERS

Project:	Huntingwood
Project No.:	281-2769
Design by:	RA / JMP
Date:	January 2011
Update:	July 2019

Summary of Runoff Contributions for Individual Wetlands
Pre to Post Development Conditions

Wetland Area	Pre Runoff Contribution (Coefficient x Area)	Post Runoff Contribution (Coefficient x Area)	Increase/Decrease For Pre-Post Development	Percent Change (%)
1	2.65	2.59	Decrease	-2.2%
2	5.77	6.16	Increase	6.6%
3	2.64	2.85	Increase	7.9%
4	4.98	5.10	Increase	2.4%
Total Percent Change for Wetlands				**4.1%**

Notes: 1) Individual contributions to wetlands to be refined at detailed design stage following detailed site grading exercise

CROZIER CONSULTING ENGINEERS

Project:	Huntingwood Trail	**D.A.**	**WETLAND 1**
Project No.:	281-2769	**Pre Area**	**7.00 ha**
Design by:	JMP/RAA	**Post Area**	**6.80 ha**
Date:	January 2011		
Update:	July 2019		

WETLAND 1: Pre to Post Runoff Determination

PRE-DEVELOPMENT

SOILS		**LANDUSE**									
Soil Texture	*Percent Soil Area (%)*	*Percent Wetland (%)*	*Area Wetland (ha)*	*Runoff Coefficient Wetland ('C')*	*Percent Wooded (%)*	*Area Wooded (ha)*	*Runofff Coefficient Wooded ('C')*	*Percent Meadow (%)*	*Area Meadow (ha)*	*Runoff Coefficient Meadow ('C')*	**Runoff Coefficient x Area**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	60%	15%	0.63	0.95	75%	3.15	0.25	10%	0.42	0.28	1.50
Clay Loam/Clay	40%	10%	0.28	0.95	90%	2.52	0.35	0%	0.00	0.40	1.15
			0.91			5.67			0.42		2.65

POST-DEVELOPMENT

SOILS		**LANDUSE**									
Soil Texture	*Percent Soil Area (%)*	*Percent Wetland (%)*	*Area Wetland (ha)*	*Runoff Coefficient Wetland ('C')*	*Percent Wooded (%)*	*Area Wooded (ha)*	*Runofff Coefficient Wooded ('C')*	*Percent Meadow (%)*	*Area Meadow (ha)*	*Runoff Coefficient Meadow ('C')*	**Runoff Coefficient x Area**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	60%	15%	0.56	0.95	75%	2.79	0.25	10%	0.37	0.28	1.33
Clay Loam/Clay	40%	10%	0.25	0.95	90%	2.23	0.35	0%	0.00	0.40	1.02
			0.80			5.01			0.37		2.34

Area Roadway (ha)	*Runoff Coefficient Roadway ('C')*	*Area Residential Townhome (ha)*	*Runoff Coefficient Residential Townhome ('C')*	
0.06	0.60	0.61	0.35	**0.25**
				2.59

% Change for Pre-Post= (Post-Pre)/Pre*100%
= -2.2%

Notes: Wetland 'C' value modified to reflect wetland storage

CROZIER CONSULTING ENGINEERS

Project: Huntingwood Trail
Project No.: 281-2769
Design by: JMP/RAA
Date: January 2011
Update: July 2019

D.A. **WETLAND 2**
Pre Area **12.00 ha**
Post Area **12.20 ha**

WETLAND 2: Pre to Post Runoff Determination

PRE-DEVELOPMENT

SOILS		LANDUSE									
Soil Texture	*Percent Soil Area (%)*	*Percent Wetland (%)*	*Area Wetland (ha)*	*Runoff Coefficient Wetland ('C')*	*Percent Wooded (%)*	*Area Wooded (ha)*	*Runofff Coefficient Wooded ('C')*	*Percent Meadow (%)*	*Area Meadow (ha)*	*Runoff Coefficient Meadow ('C')*	**Runoff Coefficient x Area**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	50%	5%	0.30	0.95	5%	0.30	0.25	90%	5.40	0.28	1.87
Clay Loam/Clay	50%	50%	3.00	0.95	50%	3.00	0.35	0%	0.00	0.40	3.90
			3.30			3.30			5.40		5.77

POST-DEVELOPMENT

SOILS		LANDUSE									
Soil Texture	*Soil Area*	*Wetland*	*Wetland*	*Coefficient*	*Wooded*	*Wooded*	*Coefficient*	*Meadow*	*Meadow*	*Coefficient*	**Runoff Coefficien**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	50%	5%	0.29	0.95	5%	0.29	0.25	90%	5.22	0.28	1.81
Clay Loam/Clay	50%	50%	2.90	0.95	50%	2.90	0.35	0%	0.00	0.40	3.77
			3.19			3.19			5.22		5.57

Area Roadway (ha)	*Runoff Coefficient Roadway ('C')*	*Area Residential Townhome (ha)*	*Runoff Coefficient Residential Townhome ('C')*	
0.46	0.60	0.61	0.50	**0.58**
				6.16

% Change for Pre-Post= (Post-Pre)/Pre*100%
= 6.6%

Note wetland 'C' value modified to reflect wetland storage

CROZIER CONSULTING ENGINEERS

Project:	Huntingwood Trail	**D.A.**	**WETLAND 3**
Project No.:	281-2769	**Pre Area**	**4.10 ha**
Design by:	JMP/RAA	**Post Area**	**4.10 ha**
Date:	January 2011		
Update:	July 2019		

WETLAND 3: Pre to Post Runoff Determination

PRE-DEVELOPMENT

SOILS		**LANDUSE**									**Runoff**
Soil Texture	*Percent Soil Area (%)*	*Percent Wetland (%)*	*Area Wetland (ha)*	*Runoff Coefficient Wetland ('C')*	*Percent Wooded (%)*	*Area Wooded (ha)*	*Runofff Coefficient Wooded ('C')*	*Percent Meadow (%)*	*Area Meadow (ha)*	*Runoff Coefficient Meadow ('C')*	**Coefficient x Area**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	50%	50%	1.03	0.95	0%	0.00	0.25	50%	1.03	0.28	1.26
Clay Loam/Clay	50%	50%	1.03	0.95	0%	0.00	0.35	50%	1.03	0.40	1.38
			2.05			0.00			2.05		2.64

POST-DEVELOPMENT

SOILS		**LANDUSE**									**Runoff**
Soil Texture	*Soil Area*	*Wetland*	*Wetland*	*Coefficient*	*Wooded*	*Wooded*	*Coefficient*	*Meadow*	*Meadow*	*Coefficient*	**Coefficien**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	50%	50%	1.03	0.95	0%	0.00	0.25	50%	1.03	0.28	1.26
Clay Loam/Clay	50%	50%	1.03	0.95	0%	0.00	0.35	50%	1.03	0.40	1.38
			2.05			0.00			2.05		2.64

Area Roadway (ha)	*Runoff Coefficient Roadway ('C')*	*Area Residential Townhome (ha)*	*Runoff Coefficient Residential Townhome ('C')*	
0.35	0.60	0.00	0.35	**0.21**
				2.85

% Change for Pre-Post= (Post-Pre)/Pre*100%
= 7.9%

Note wetland 'C' value modified to reflect wetland storage

CROZIER CONSULTING ENGINEERS

Project: Huntingwood Trail
Project No.: 281-2769
Design by: JMP/RAA
Date: January 2011
Update: July 2019

D.A. **WETLAND 4**
Pre Area **7.00 ha**
Post Area **7.00 ha**

WETLAND 4: Pre to Post Runoff Determination

PRE-DEVELOPMENT

SOILS		LANDUSE									
Soil Texture	*Percent Soil Area (%)*	*Percent Wetland (%)*	*Area Wetland (ha)*	*Runoff Coefficient Wetland ('C')*	*Percent Wooded (%)*	*Area Wooded (ha)*	*Runofff Coefficient Wooded ('C')*	*Percent Meadow (%)*	*Area Meadow (ha)*	*Runoff Coefficient Meadow ('C')*	**Runoff Coefficient x Area**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	60%	90%	3.78	0.95	0%	0.00	0.25	10%	0.42	0.28	3.71
Clay Loam/Clay	40%	10%	0.28	0.95	0%	0.00	0.35	90%	2.52	0.40	1.27
			4.06			0.00			2.94		4.98

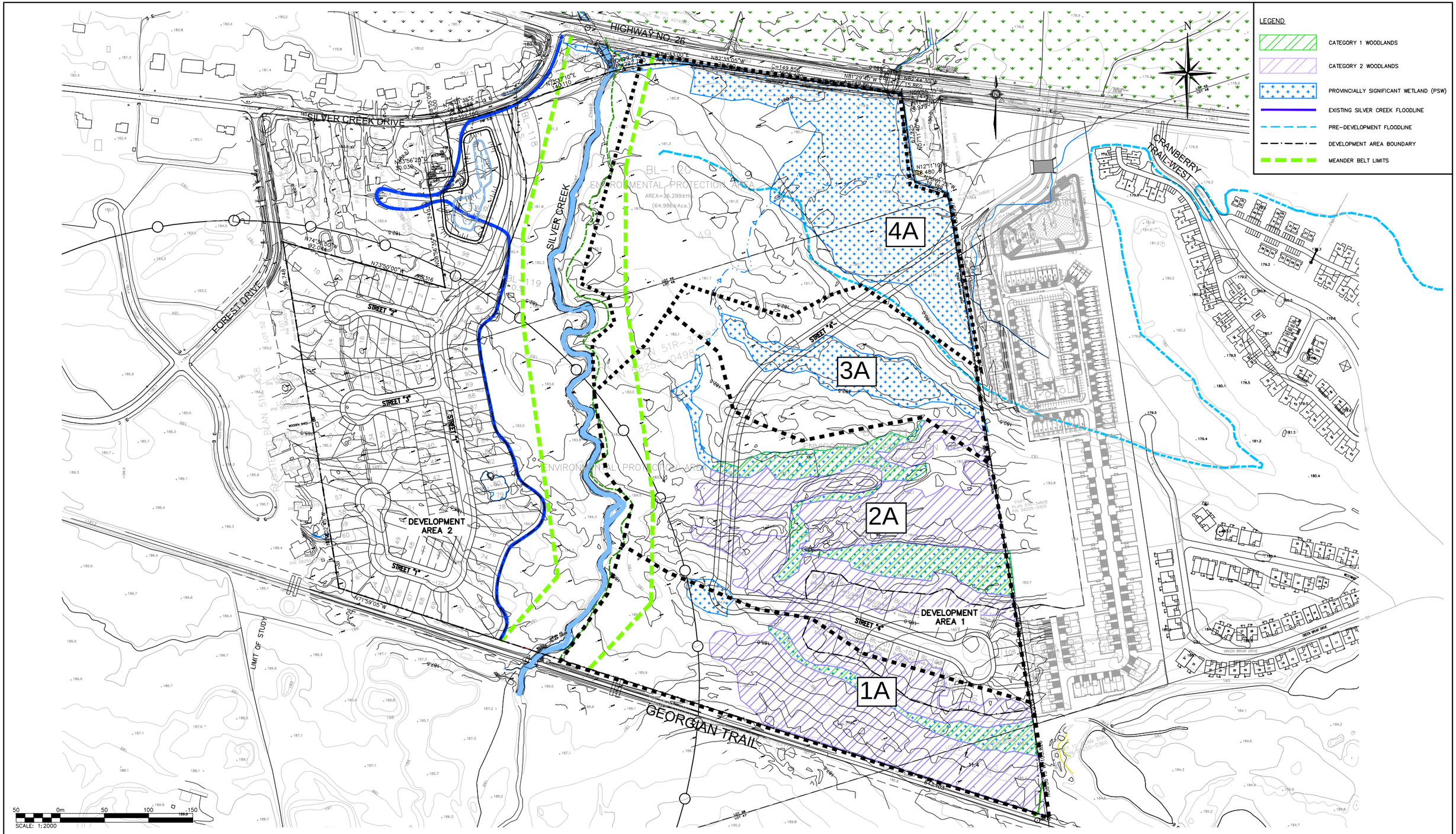
POST-DEVELOPMENT

SOILS		LANDUSE									
Soil Texture	*Soil Area*	*Wetland*	*Wetland*	*Coefficient*	*Wooded*	*Wooded*	*Coefficient*	*Meadow*	*Meadow*	*Coefficient*	**Runoff Coefficien**
Sand Loam	0%	0%	0.00	0.95	0%	0.00	0.08	0%	0.00	0.10	0.00
Loam/Silt Loam	60%	90%	3.78	0.95	0%	0.00	0.25	10%	0.42	0.28	3.71
Clay Loam/Clay	40%	10%	0.28	0.95	0%	0.00	0.35	90%	2.52	0.40	1.27
			4.06			0.00			2.94		4.98

Area Roadway (ha)	*Runoff Coefficient Roadway ('C')*	*Area Residential Townhome (ha)*	*Runoff Coefficient Residential Townhome ('C')*	
0.20	0.60	0.00	0.35	**0.12**
				5.10

% Change for Pre-Post= (Post-Pre)/Pre*100%
= 2.4%

Note wetland 'C' value modified to reflect wetland storage



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TEMPORARY BENCHMARKS

TBM#1–
TBM#2–
TBM#3–

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR 1st SUBMISSION	MM/DD/YYYY

Engineer

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

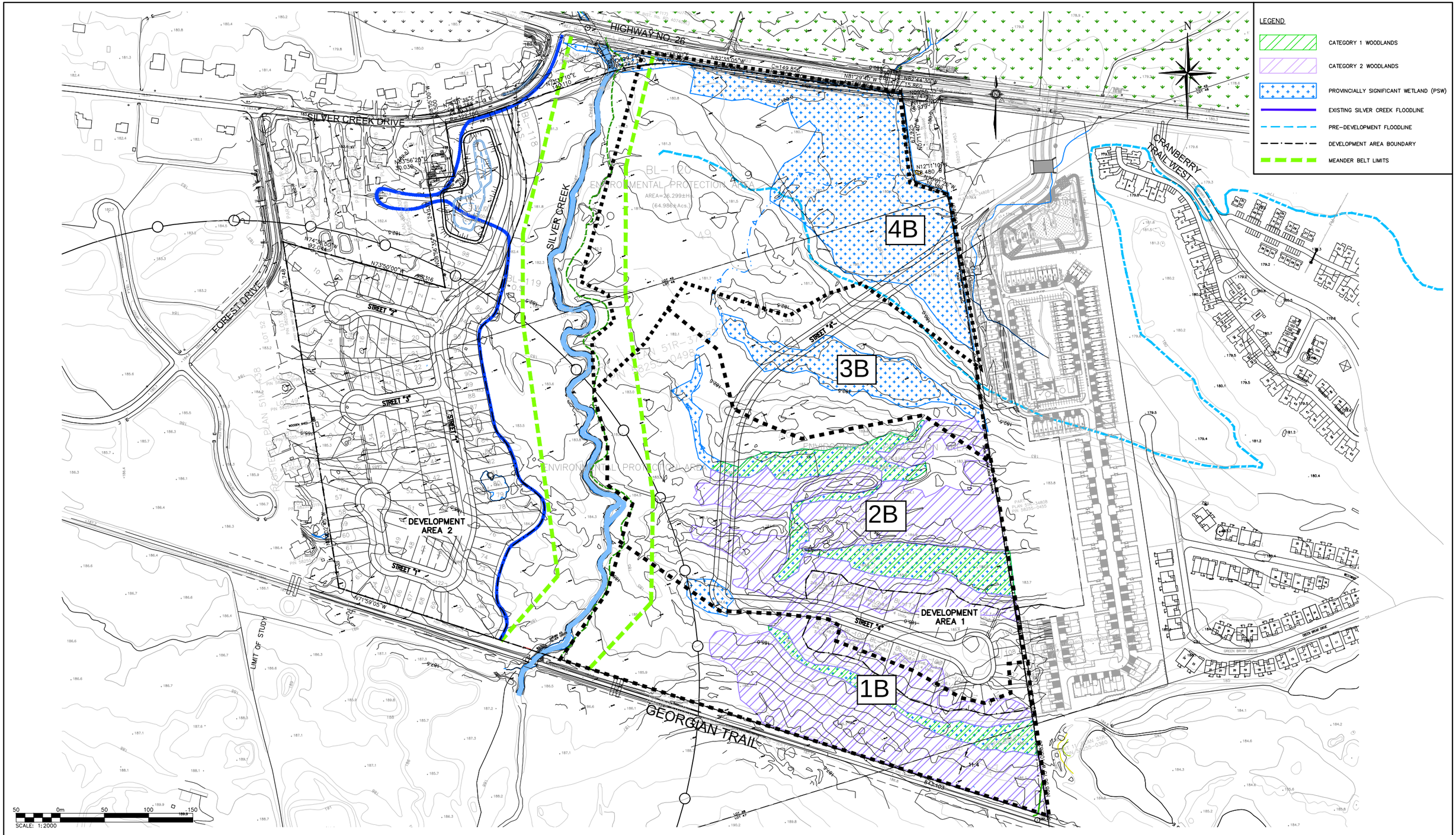
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FOR DISCUSSION PURPOSES ONLY

Project
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing
Water Balance - Pre-Dev Wetland IDs

CROZIER CONSULTING ENGINEERS
The HarbourEdge Building,
40 Huron Street, Suite 301,
Collingwood, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

Drawn By	Design By	Project	
J.E.	J.E.		281-2769
Check By	Check By	Scale	Drawing
J.P.	J.P.	1:2000	Fig.



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TEMPORARY BENCHMARKS

TBM#1–
TBM#2–
TBM#3–

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR 1st SUBMISSION	MM/DD/YYYY

Engineer

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

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FOR DISCUSSION PURPOSES ONLY

Project
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing
Water Balance - Post-Dev Wetland IDs

CROZIER CONSULTING ENGINEERS
The HarbourEdge Building,
40 Huron Street, Suite 301,
Collingwood, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

Drawn By	Design By	Project
J.E.	J.E.	281-2769
Check By	Check By	Scale / Drawing
J.P.	J.P.	1:2000 / Fig.

APPENDIX C

Hydrologic Parameters

CROZIER
CONSULTING ENGINEERS

Project: Huntingwood
Project No.: 281-2769
File: Hyd Parameters
Design by: JMP/RA
Date: January 17, 2011
Updated: July 25, 2019

Summary of Hydrologic Parameters

	Catchment ID	Catchment Type	Drainage Area (ha)	Total Imperviousness (%)	Directly Connected Imperviousness (%)	CN Number (CN)[1]	Runoff Coefficient (RC)	Time of Concentration Method	Time of Concentration (hrs)	Time to Peak (hrs)
Pre-Development	101	CALIB NASHYD	16.92	0	0	53.2	0.1	AIRPORT METHOD	1.55	1.04
	102	CALIB NASHYD	34.12	0	0	58.4	0.2	AIRPORT METHOD	2.14	1.43
	Total Pre		**51.0**							
Post-Development	2101	CALIB STANDHYD	10.02	49	29	54	0.52	BRANSBY-WILLIAMS METHOD	0.52	0.35
	2102	CALIB NASHYD	6.91	0	0	52.8	0.1	AIRPORT METHOD	1.52	1.02
	Sub-Total West		**16.9**							
	2103	CALIB STANDHYD	1.7	62	37	74	0.70	BRANSBY-WILLIAMS METHOD	0.27	0.18
	2104	CALIB NASHYD	10.9	2	0	61.6	0.21	AIRPORT METHOD	1.10	0.74
	2105	CALIB NASHYD	21.5	4	3	53.9	0.2	AIRPORT METHOD	3.50	2.35
	Sub-Total East		**34.1**							
	Total Post		**51.1**							

CROZIER CONSULTING ENGINEERS

HYDROLOGIC PARAMETERS

Project: Huntingwood
Project No.: 281-2769
File: Hyd Parameters
Design by: JMP/RA
Date: January 17, 2011
Updated: July 25, 2019

D.A. 101
Area 16.9 ha

Pre-Development - West

CURVE NUMBER

Soil Series	Hydrologic Soil Group	Soil Texture	Soil Area Composition		Woodland			Meadow		
			Area(ha)	Percent	Area	CN	CN*A	Area	CN	CN*A
Alliston	AB	Sandy loam	10.2	60	0.0	46	0	4.1	51	207.1008
Tioga	A	Loamy sand	6.8	40	0.0	32	0	0.0	38	0
Totals			16.92		0.00		0.00	4.06		207.10

Wetlands			Lawn / Pasture			Cultivated			Impervious		
Area	CN	CN*A	Area	CN	CN*A	Area	CN	CN*A	Land Use	Area (ha)	
	50	0	6.1	59	357		68	0	Roadway	0.00	
	50	0	6.8	49	332		62	0	Sidewalk	0.00	
									Driveway	0.00	
									Building	0.04	
					0			0			
0.00		0.00	12.82		688.65	0.00		0.00		0.04	16.92

Ximp **0** % **Composite Curve Number (for pervious areas)** **53.1**

Timp **0** % **Composite Curve Number (for all areas)** **53.2**

Land Use	Initial Abstraction (mm)	Area (ha)	IA*A
Wetlands	16	0.0	0.0
Woodland	10	0.0	0.0
Meadow	8	4.1	32.5
Cultivated	7	0.0	0.0
Lawn / Pasture	5	12.8	64.1
Impervious	2	0.0	0.1

IA Avg 5.71

Total Catchment Area **16.9** **ha**

Number of Houses 2
Building footprint 200 m^2
Pavement Width 0.0 m
Sidewalks 0.0 m
Length ROW 0 m
Driveway 0 m^2

Soil Type	Initial Abstraction (mm)	Slope (%)	Lot Depth/Travel Length (m)	Mannings n
Pervious	5.72	0.79	700	0.15
Impervious	2		0	0.013

TIME OF CONCENTRATION

GENERAL INPUTS

Longest Flow Path 700 m
Elevation Drop 5.5 m
Sw 0.79 %

Runoff Coefficient Determination

Land Use	Alliston			Tioga			0			0		
	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA
Woodland	0.08	0.0	0.0	0.08	0.0	0.0	0.25	0.0	0.0	0.25	0.0	0.0
Meadow	0.10	4.1	0.4	0.10	0.0	0.0	0.28	0.0	0.0	0.28	0	0.0
Wetlands	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0	0.0
Lawn / Pasture	0.10	6.1	0.6	0.10	6.8	0.7	0.11	0.0	0.0	0.11	0	0.0
Cultivated	0.22	0.0	0.0	0.22	0.0	0.0	0.35	0.0	0.0	0.35	0	0.0
Impervious	0.95	0.04	0.0	0.95	0.00	0.0	0.95	0	0.0	0.95	0	0.0
Total		10.15	1.0		6.77	0.7		0.0	0.0		0.0	0.0

Composite Runoff Coefficient 0.10

AIRPORT METHOD
(runoff coefficient less than 0.40, <1 km^2)

Time of Concentration **93.2** min **1.55** hours
Time to Peak **62.4** min **1.04** hours

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

BRANSBY-WILLIAMS METHOD
(Runoff Coefficient greater than 0.40, <25km^2)

Time of Concentration **31.6** min **0.53** hours
Time to Peak **21.1** min **0.35** hours

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

TIME TO PEAK	
Appropriate Method	AIRPORT METHOD
Tp	1.04

CROZIER CONSULTING ENGINEERS

HYDROLOGIC PARAMETERS

Project: Huntingwood
Project No.: 281-2769
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Design by: JMP/RA
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Updated: July 25, 2019

D.A. 102
Area 34.1 ha

Pre-Development - East

CURVE NUMBER

*Approximate Areas

Soil Series	Hydrologic Soil Group	Soil Texture	Soil Area Composition		Woodland			Meadow		
			Area(ha)	Percent	Area	CN	CN*A	Area	CN	CN*A
Alliston	AB	Sandy loam	17.1	50	6.8	46	313.9	5.1	51	261.0
Wiarton	B	Loam	1.7	5	1.7	60	102.4	0.0	65	0.0
Granby	B	Sandy loam	3.4	10	1.7	60	102.4	1.7	65	110.9
Parkhill	BC	Loam	11.9	35	11.9	67	800.1	0.0	71	0.0
Totals			34.1		22.2		1318.74	6.8		371.91

Wetlands			Lawn / Pasture			Cultivated			Impervious	
Area	CN	CN*A	Area	CN	CN*A	Area	CN	CN*A	Land Use	Area (ha)
0.0	50	0	5.1	59	302.0	0.0	68	0.0	Roadway	0.00
0.0	50	0	0.0	69	0.0	0.0	74	0.0	Sidewalk	0.00
0.0	50	0	0.0	69	0.0	0.0	74	0.0	Driveway	0.00
0.0	50	0	0.0	74	0.0	0.0	78	0.0	Building	0.00
0.00		0.00	5.1		301.96	0.00		0.00		0.00

34.12

Ximp **0** % **Composite Curve Number (for pervious areas)** **58.4**

Timp **0** % **Composite Curve Number (for all areas)** **58.4**

Land Use	Initial Abstraction (mm)	Area (ha)	IA*A
Wetlands	16	0.0	0.0
Woodland	10	22.2	221.8
Meadow	8	6.8	54.6
Cultivated	7	0.0	0.0
Lawn / Pasture	5	5.1	25.6
Impervious	2	0.0	0.0

IA Avg 8.85

Total Catchment Area **34.1** **ha**

Number of Houses 0
Building footprint 0 m^2
Pavement Width 0.0 m
Sidewalks 0.0 m
Length ROW 0 m
Driveway 0 m^2

Soil Type	Initial Abstraction (mm)	Slope (%)	Lot Depth/Travel Length (m)	Mannings n
Pervious	8.85	0.54	1200	0.15
Impervious	2		0	0.013

TIME OF CONCENTRATION

GENERAL INPUTS

Longest Flow Path 1200 m
Elevation Drop 6.5 m
Sw 0.54 %

Runoff Coefficient Determination

Land Use	Alliston			Wiarton			Granby			Parkhill		
	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA
Woodland	0.08	6.8	0.5	0.25	1.7	0.4	0.25	1.7	0.4	0.25	11.9	3.0
Meadow	0.10	5.1	0.5	0.28	0.0	0.0	0.28	1.7	0.5	0.28	0	0.0
Wetlands	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0	0.0
Lawn / Pasture	0.10	5.1	0.5	0.28	0.0	0.0	0.28	0.0	0.0	0.28	0	0.0
Cultivated	0.22	0.0	0.0	0.35	0.0	0.0	0.35	0.0	0.0	0.35	0	0.0
Impervious	0.95	0.0	0.0	0.95	0.00	0.0	0.95	0	0.0	0.95	0	0.0
Total		17.1	1.6		1.7	0.4		3.4	0.9		11.9	3.0

Composite Runoff Coefficient 0.17

AIRPORT METHOD
(runoff coefficient less than 0.40, <1 km^2)

Time of Concentration **128.2** min **2.14** hours
Time to Peak **85.9** min **1.43** hours

$$t_c = \frac{3.26*(1.1-C)*L^{0.5}}{S_w^{0.33}}$$

BRANSBY-WILLIAMS METHOD
(Runoff Coefficient greater than 0.40, <25km^2)

Time of Concentration **54.3** min **0.91** hours
Time to Peak **36.4** min **0.61** hours

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

TIME TO PEAK	
Appropriate Method	AIRPORT METHOD
Tp	1.43

CROZIER CONSULTING ENGINEERS

HYDROLOGIC PARAMETERS

Project: Huntingwood
Project No.: 281-2769
File: Hyd Parameters
Design by: JMP/RA
Date: January 17, 2011
Updated: July 25, 2019

D.A. 2101
Area 10.0 ha

Post-Development - West Development Area

CURVE NUMBER

*Approximate Areas

Soil Series	Hydrologic Soil Group	Soil Texture	Soil Area Composition Area(ha)	Soil Area Composition Percent	Woodland Area	Woodland CN	Woodland CN*A	Meadow Area	Meadow CN	Meadow CN*A
Alliston	AB	Sandy loam	5.0	50	0.0	46	0.0	0.0	51	0.0
Tioga	A	Loamy sand	5.0	50	0.0	32	0.0	0.0	38	0.0
Totals			10.02		0.00		0.00	0.00		0.00

Wetlands Area	Wetlands CN	Wetlands CN*A	Lawn / Pasture Area	Lawn / Pasture CN	Lawn / Pasture CN*A	Cultivated Area	Cultivated CN	Cultivated CN*A	Impervious Land Use	Impervious Area (ha)
	50	0	2.6	59	150.9		68	0.0	Roadway	0.96
	50	0	2.6	49	125.3		62	0.0	Sidewalk	0.13
									SF Driveway	0.66
									TH Driveway	0.09
									SF Building	1.76
									TH Building	0.30
									SWM Pond	1.00
0.00		0.00	5.12		276.24	0.00		0.00		4.90

10.02

Ximp **29** %

Timp **49** %

Composite Curve Number (for pervious areas) **54.0**

Composite Curve Number (for all areas) **76.5**

SF= Single Family Detached
TH= Semi

Land Use	Initial Abstraction (mm)	Area (ha)	IA*A
Wetlands	16	0.0	0.0
Woodland	10	0.0	0.0
Meadow	8	0.0	0.0
Cultivated	7	0.0	0.0
Lawn / Pasture	5	5.1	25.6
Impervious	2	4.9	9.8

IA Avg 3.53

Soil Type	Initial Abstraction (mm)	Slope (%)	Lot Depth/Travel Length (m)	Mannings n
Pervious	5	2.00	35	0.15
Impervious	2	0.5	600	0.013

Total Catchment Area **10.0** **ha**

Number of SF Houses	88	
Number of Townhomes	20	
SF Building footprint	200	m^2
SD Building footprint	150	m^2
Pavement Width	9.5	m
Sidewalks	1.5	m
Length ROW	880	m
SD Driveway	75	m^2
TH Driveway	45	m^2

TIME OF CONCENTRATION

GENERAL INPUTS

Longest Flow Path	600	m
Elevation Drop	3	m
Sw	0.50	%

Runoff Coefficient Determination

Land Use	Alliston C(-)	Alliston Area	Alliston CA	Tioga C(-)	Tioga Area	Tioga CA	0 C(-)	0 Area	0 CA	0 C(-)	0 Area	0 CA
Woodland	0.08	0.0	0.0	0.08	0.0	0.0	0.25	0.0	0.0	0.25	0.0	0.0
Meadow	0.10	0.0	0.0	0.10	0.0	0.0	0.28	0.0	0.0	0.28	0	0.0
Wetlands	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0	0.0
Lawn / Pasture	0.10	2.6	0.3	0.10	2.6	0.3	0.28	0.0	0.0	0.28	0	0.0
Cultivated	0.22	0.0	0.0	0.22	0.0	0.0	0.35	0.0	0.0	0.35	0	0.0
Impervious	0.95	2.5	2.3	0.95	2.5	2.3	0.95	0	0.0	0.95	0	0.0
Total		5.0	2.6		5.0	2.6		0.0	0.0		0.0	0.0

Composite Runoff Coefficient 0.52

AIRPORT METHOD
(runoff coefficient less than 0.40, <1 km²)

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

Time of Concentration **58.6** min **0.98** hours

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

Time to Peak **39.3** min **0.65** hours

BRANSBY-WILLIAMS METHOD
(Runoff Coefficient greater than 0.40, <25km²)

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

Time of Concentration **31.2** min **0.52** hours

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

Time to Peak **20.9** min **0.35** hours

TIME TO PEAK	
Appropriate Method	BRANSBY-WILLIAMS METHOD
Tp	0.35

CROZIER CONSULTING ENGINEERS

HYDROLOGIC PARAMETERS

Project: Huntingwood
Project No.: 281-2769
File: Hyd Parameters
Design by: JMP/RA
Date: January 17, 2011
Updated: July 25, 2019

D.A. 2102
Area 6.9 ha

Post-Development - Silver Creek Buffer

CURVE NUMBER

Soil Series	Hydrologic Soil Group	Soil Texture	Soil Area Composition		Woodland			Meadow		
			Area(ha)	Percent	Area	CN	CN*A	Area	CN	CN*A
Alliston	AB	Sandy loam	4.1	60	0.0	46	0	2.1	51	105.723
Tioga	A	Loamy sand	2.1	30	0.0	32	0	1.0	38	39.387
Granby	B	Sandy loam	0.7	10	0.0	60	0	0.3	65	22.4575
Totals			6.91		0.00		0.00	3.46		167.57

Wetlands			Lawn / Pasture			Cultivated			Impervious		
Area	CN	CN*A	Area	CN	CN*A	Area	CN	CN*A	Land Use	Area (ha)	
	50	0	2.1	59	122		68	0	Roadway	0.00	
	50	0	1.0	49	51		62	0	Sidewalk	0.00	
	50	0	0.3	69	24		74	0	Driveway	0.00	
									Building	0.00	
									SWM Pond	0.00	
					0			0			
0.00		0.00	3.46		196.94	0.00		0.00		0.00	6.91

Ximp **0** % **Composite Curve Number (for pervious areas)** **52.8**

Timp **0** % **Composite Curve Number (for all areas)** **52.8**

Land Use	Initial Abstraction (mm)	Area (ha)	IA*A
Wetlands	16	0.0	0.0
Woodland	10	0.0	0.0
Meadow	8	3.5	27.6
Cultivated	7	0.0	0.0
Lawn / Pasture	5	3.5	17.3
Impervious	2	0.0	0.0

IA Avg 6.50

Total Catchment Area **6.9** **ha**

Number of Houses	0
Building footprint	0 m^2
Pavement Width	0.0 m
Sidewalks	0.0 m
Length ROW	0 m
Driveway	0 m^2

Soil Type	Initial Abstraction (mm)	Slope (%)	Lot Depth/Travel Length (m)	Mannings n
Pervious	6.50	0.75	670	0.15
Impervious	2	0	0	0.013

TIME OF CONCENTRATION

GENERAL INPUTS

Longest Flow Path 670 m
Elevation Drop 5 m
Sw 0.75 %

Runoff Coefficient Determination

Land Use	Alliston			Tioga			Granby			0		
	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA
Woodland	0.08	0.0	0.0	0.08	0.0	0.0	0.25	0.0	0.0	0.25	0.0	0.0
Meadow	0.10	2.1	0.2	0.10	1.0	0.1	0.28	0.3	0.1	0.28	0	0.0
Wetlands	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0	0.0
Lawn / Pasture	0.10	2.1	0.2	0.10	1.0	0.1	0.28	0.3	0.1	0.11	0	0.0
Cultivated	0.22	0.0	0.0	0.22	0.0	0.0	0.35	0.0	0.0	0.35	0	0.0
Impervious	0.95	0.0	0.0	0.95	0.0	0.0	0.95	0	0.0	0.95	0	0.0
Total		4.1	0.4		2.07	0.2		0.7	0.2		0.0	0.0

Composite Runoff Coefficient 0.12

AIRPORT METHOD
(runoff coefficient less than 0.40, <1 km^2)

Time of Concentration **91.3** min **1.52** hours
Time to Peak **61.1** min **1.02** hours

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

BRANSBY-WILLIAMS METHOD
(Runoff Coefficient greater than 0.40, <25km^2)

Time of Concentration **33.4** min **0.56** hours
Time to Peak **22.4** min **0.37** hours

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

TIME TO PEAK	
Appropriate Method	AIRPORT METHOD
Tp	1.02

CROZIER CONSULTING ENGINEERS

HYDROLOGIC PARAMETERS

Project: Huntingwood
Project No.: 281-2769
File: Hyd Parameters
Design by: JMP/RA
Date: January 17, 2011
Updated: July 25, 2019

D.A. 2103
Area 1.7 ha

Post-Development - East Development Area

CURVE NUMBER

*Approximate Areas

Soil Series	Hydrologic Soil Group	Soil Texture	Soil Area Composition Area(ha)	Soil Area Composition Percent	Woodland Area	Woodland CN	Woodland CN*A	Meadow Area	Meadow CN	Meadow CN*A
Alliston	AB	Sandy loam	0.0	0	0.0	46	0.0	0.0	51	0.0
Parkhill	BC	Loam	1.7	100	0.0	67	0.0	0.0	71	0.0
Totals			1.74		0.00		0.00	0.00		0.00

Wetlands Area	Wetlands CN	Wetlands CN*A	Lawn / Pasture Area	Lawn / Pasture CN	Lawn / Pasture CN*A	Cultivated Area	Cultivated CN	Cultivated CN*A	Impervious Land Use	Impervious Area (ha)
0.0	50	0	0.0	59	0.0		68	0.0	Roadway	0.31
0.0	50	0	0.7	74	48.4	0.0	78	0.0	Sidewalk	0.05
									SF Driveway	0.08
									TH Driveway	0.26
									SF Building	0.08
									TH Building	0.33
									SWM Pond	0.00
0.00		0.00	0.65		48.43	0.00		0.00		1.09

1.74

Ximp **37** %

Timp **62** %

Composite Curve Number (for pervious areas) **74.0**

Composite Curve Number (for all areas) **90.2**

SD= Semi-Detached
TH= Townhomes

Land Use	Initial Abstraction (mm)	Area (ha)	IA*A
Wetlands	16	0.0	0.0
Woodland	10	0.0	0.0
Meadow	8	0.0	0.0
Cultivated	7	0.0	0.0
Lawn / Pasture	5	0.7	3.3
Impervious	2	1.1	2.2

IA Avg 3.13

Total Catchment Area **1.7** **ha**

Number of SD Houses	10	
Number of Townhomes	52	
SD Building footprint	150	m^2
TH Building footprint	125	m^2
Pavement Width	9.5	m
Sidewalks	1.5	m
Length ROW	300	m
SD Driveway	75	m^2
TH Driveway	50	m^2

Soil Type	Initial Abstraction (mm)	Slope (%)	Lot Depth/Travel Length (m)	Mannings n
Pervious	5	2.00	35	0.15
Impervious	2	0.5	800	0.013

TIME OF CONCENTRATION

GENERAL INPUTS

Longest Flow Path	300	m
Elevation Drop	3	m
Sw	1.00	%

Runoff Coefficient Determination

Land Use	Alliston C(-)	Alliston Area	Alliston CA	Parkhill C(-)	Parkhill Area	Parkhill CA	0 C(-)	0 Area	0 CA	0 C(-)	0 Area	0 CA
Woodland	0.08	0.0	0.0	0.25	0.0	0.0	0.25	0.0	0.0	0.25	0.0	0.0
Meadow	0.10	0.0	0.0	0.28	0.0	0.0	0.28	0.0	0.0	0.28	0	0.0
Wetlands	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0	0.0
Lawn / Pasture	0.10	0.0	0.0	0.28	0.7	0.2	0.28	0.0	0.0	0.28	0	0.0
Cultivated	0.22	0.0	0.0	0.35	0.0	0.0	0.35	0.0	0.0	0.35	0	0.0
Impervious	0.95	0.0	0.0	0.95	1.1	1.0	0.95	0	0.0	0.95	0	0.0
Total		0.0	0.0		1.7	1.2		0.0	0.0		0.0	0.0

Composite Runoff Coefficient 0.70

AIRPORT METHOD
(runoff coefficient less than 0.40, <1 km²)

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

Time of Concentration **22.7** min **0.38** hours

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

Time to Peak **15.2** min **0.25** hours

BRANSBY-WILLIAMS METHOD
(Runoff Coefficient greater than 0.40, <25km²)

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

Time of Concentration **16.2** min **0.27** hours

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

Time to Peak **10.8** min **0.18** hours

TIME TO PEAK	
Appropriate Method	BRANSBY-WILLIAMS METHOD
Tp	0.18

CROZIER CONSULTING ENGINEERS

HYDROLOGIC PARAMETERS

Project: Huntingwood
Project No.: 281-2769
File: Hyd Parameters
Design by: JMP/RA
Date: January 17, 2011
Updated: July 25, 2019

D.A. 2104
Area 10.9 ha

Post-Development - East Natural Area

CURVE NUMBER

*Approximate Areas

Soil Series	Hydrologic Soil Group	Soil Texture	Soil Area Composition		Woodland			Meadow		
			Area(ha)	Percent	Area	CN	CN*A	Area	CN	CN*A
Alliston	AB	Sandy loam	3.3	30	3.2	46	147.4	0.0	51	0.0
Wiarton	B	Loam	0.0	0	0.0	60	0.0	0.0	65	0.0
Parkhill	BC	Loam	7.6	70	7.1	67	478.1	0.0	71	0.0
Totals			10.88		10.34		625.49	0.00		0.00

Wetlands			Lawn / Pasture			Cultivated			Impervious	
Area	CN	CN*A	Area	CN	CN*A	Area	CN	CN*A	Land Use	Area (ha)
0.0	50	0	0.00	59	0.0	0.0	68	0.0	Roadway	0.00
0.0	50	0	0.00	69	0.0	0.0	74	0.0	Sidewalk	0.00
0.0	50	0	0.34	74	25.3	0.0	78	0.0	Driveway	0.00
									Building	0.20
0.00		0.00	0.34		25.25	0.00		0.00		0.20

10.88

Ximp **0** %

Timp **2** %

Composite Curve Number (for pervious areas) **60.9**

Composite Curve Number (for all areas) **61.6**

Land Use	Initial Abstraction (mm)	Area (ha)	IA*A
Wetlands	16	0.0	0.0
Woodland	10	10.3	103.4
Meadow	8	0.0	0.0
Cultivated	7	0.0	0.0
Lawn / Pasture	5	0.3	1.7
Impervious	2	0.2	0.4

IA Avg 9.70

Total Catchment Area **10.9** **ha**

Number of SD Houses 4
Number of Townhomes 27
SD Building footprint 150 m^2
TH Building footprint 125 m^2
Pavement Width 9.5 m
Sidewalks 1.5 m
Length ROW 0 m

Soil Type	Initial Abstraction (mm)	Slope (%)	Lot Depth/Travel Length (m)	Mannings n
Pervious	9.8	1.09	750	0.15
Impervious	2		0	0.013

TIME OF CONCENTRATION

GENERAL INPUTS

Longest Flow Path 550 m
Elevation Drop 6 m
Sw 1.09 %

Runoff Coefficient Determination

Land Use	Alliston			Wiarton			Parkhill			0		
	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA
Woodland	0.08	3.2	0.3	0.25	0.0	0.0	0.25	7.1	1.8	0.25	0.0	0.0
Meadow	0.10	0.0	0.0	0.28	0.0	0.0	0.28	0.0	0.0	0.28	0	0.0
Wetlands	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0	0.0
Lawn / Pasture	0.10	0.0	0.0	0.28	0.0	0.0	0.28	0.3	0.1	0.28	0	0.0
Cultivated	0.22	0.0	0.0	0.35	0.0	0.0	0.35	0.0	0.0	0.35	0	0.0
Impervious	0.95	0.0	0.0	0.95	0.00	0.0	0.95	0.20	0.2	0.95	0	0.0
Total		3.2	0.3		0.0	0.0		7.7	2.1		0.0	0.0

Composite Runoff Coefficient 0.21

AIRPORT METHOD
(runoff coefficient less than 0.40, <1 km^2)

Time of Concentration **65.8** min **1.10** hours
Time to Peak **44.1** min **0.74** hours

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

BRANSBY-WILLIAMS METHOD
(Runoff Coefficient greater than 0.40, <25km^2)

Time of Concentration **24.3** min **0.40** hours
Time to Peak **16.3** min **0.27** hours

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

TIME TO PEAK	
Appropriate Method	AIRPORT METHOD
Tp	0.74

CROZIER CONSULTING ENGINEERS

HYDROLOGIC PARAMETERS

Project: Huntingwood
Project No.: 281-2769
File: Hyd Parameters
Design by: JMP/RA
Date: January 17, 2011
Updated: July 25, 2019

D.A. 2105
Area 21.5 ha

Post-Development - Central Natural Area Adjacent Hwy 26

CURVE NUMBER

*Approximate Areas

Soil Series	Hydrologic Soil Group	Soil Texture	Soil Area Composition		Woodland			Meadow		
			Area(ha)	Percent	Area	CN	CN*A	Area	CN	CN*A
Alliston	AB	Sandy loam	16.1	75	7.7	46	352.1	7.5	51	381.6
Granby	B	Sandy loam	5.4	25	2.7	60	161.3	2.5	65	162.1
Totals			21.50		10.34		513.32	9.98		543.70

Wetlands			Lawn / Pasture			Cultivated			Impervious		
Area	CN	CN*A	Area	CN	CN*A	Area	CN	CN*A	Land Use	Area (ha)	
0.0	50	0	0.4	59	24.1	0.0	68	0.0	Roadway	0.49	
0.0	50	0	0.0	69	0.0	0.0	74	0.0	Sidewalk	0.08	
									Driveway	0.00	
									Building	0.20	
0.00		0.00	0.41		24.12	0.00		0.00		0.77	21.50

Ximp **3** %
Timp **4** %

Composite Curve Number (for pervious areas) **52.2**

Composite Curve Number (for all areas) **53.9**

Land Use	Initial Abstraction (mm)	Area (ha)	IA*A
Wetlands	16	0.0	0.0
Woodland	10	10.3	103.4
Meadow	8	10.0	79.8
Cultivated	7	0.0	0.0
Lawn / Pasture	5	0.4	2.0
Impervious	2	0.8	1.5

IA Avg 8.69

Soil Type	Initial Abstraction (mm)	Slope (%)	Lot Depth/Travel Length (m)	Mannings n
Pervious	8.9	0.13	300	0.15
Impervious	2		0	0.013

Total Catchment Area **21.5** **ha**

Number of SD Houses	6	
Number of Townhomes	25	
SD Building footprint	150	m^2
TH Building footprint	125	m^2
Pavement Width	9.5	m
Sidewalks	1.5	m
Length ROW	520	m

TIME OF CONCENTRATION

GENERAL INPUTS

Longest Flow Path	1200	m
Elevation Drop	1.5	m
Sw	0.13	%

Runoff Coefficient Determination

Land Use	Alliston			Granby			0			0		
	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA	C(-)	Area	CA
Woodland	0.08	7.7	0.6	0.25	2.7	0.7	0.25	0.0	0.0	0.25	0.0	0.0
Meadow	0.10	7.5	0.7	0.28	2.5	0.7	0.28	0.0	0.0	0.28	0	0.0
Wetlands	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.05	0	0.0
Lawn / Pasture	0.10	0.4	0.0	0.28	0.0	0.0	0.28	0.0	0.0	0.28	0	0.0
Cultivated	0.22	0.0	0.0	0.35	0.0	0.0	0.35	0.0	0.0	0.35	0	0.0
Impervious	0.95	0.8	0.7	0.95	0.00	0.0	0.95	0	0.0	0.95	0	0.0
Total		16.3	2.1		5.2	1.4		0.0	0.0		0.0	0.0

Composite Runoff Coefficient 0.16

AIRPORT METHOD
(runoff coefficient less than 0.40, <1 km^2)

Time of Concentration **210.1** min **3.50** hours
Time to Peak **140.8** min **2.35** hours

$$t_c = \frac{3.26 * (1.1 - C) * L^{0.5}}{S_w^{0.33}}$$

BRANSBY-WILLIAMS METHOD
(Runoff Coefficient greater than 0.40, <25km^2)

Time of Concentration **76.3** min **1.27** hours
Time to Peak **51.1** min **0.85** hours

$$t_c = \frac{0.057 * L}{S^{0.2} * A^{0.1}}$$

TIME TO PEAK	
Appropriate Method	AIRPORT METHOD
Tp	2.35

APPENDIX D

SWMHYMO Modeling Files

```
2     Metric units
*************************************************************************
*#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
*#  Date        : 01-17-2011
*#  Updated     : 07-25-2019
*#  Modeller    : [J.Proctor/R.Alexander]
*#  Company     : C.F. Crozier & Associates Inc.
*#  License #   :  3737016
*************************************************************************
*#  J:\200\281-...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\ALL_CHI.dat
*************************************************************************
START                 TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
*%                     [  ] <--storm filename, one per line for NSTORM time
*%--------------------|---------------------------------------------------|
*************************************************************************
*************************************************************************
                      PRE-DEVELOPMENT - 2 YEAR Event  ********************
*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                     Chicago Rainfall Distribution
*
*************************************************************************
*%--------------------|---------------------------------------------------|
CHICAGO STORM         IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                      ICASEcs=[2],
                      Enter ordinates of IDF curve below, at least seven points
                          TIME (min)    Intensity(mm/hr)
                            [5]         [95]
                            [10]        [79]
                            [15]        [62]
                            [30]        [40]
                            [60]        [25]
                            [120]       [14]
                            [360]       [6.1]
                            [720]       [3.3]
                            [1440]      [2.1]
                              -1            -1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 101 (West)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
                      DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
                      N=[3], TP=[1.04]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 102 (East)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
                      DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
                      N=[3], TP=[1.43]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preWest"]
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preEast"]
*%--------------------|---------------------------------------------------|
*************************************************************************
*************************************************************************
**********************PRE-DEVELOPMENT - 5 YEAR Event ********************
*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                     Chicago Rainfall Distribution
*
*************************************************************************
*%--------------------|---------------------------------------------------|
CHICAGO STORM         IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                      ICASEcs=[2],
                      Enter ordinates of IDF curve below, at least seven points
                          TIME (min)    Intensity(mm/hr)
                            [5]         [125]
                            [10]        [100]
                            [15]        [82]
                            [30]        [53]
                            [60]        [34]
                            [120]       [19]
                            [360]       [8.4]
                            [720]       [4.6]
                            [1440]      [2.7]
                              -1            -1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 101 (West)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
                      DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
                      N=[3], TP=[1.04]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 102 (East)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
                      DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
                      N=[3], TP=[1.43]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preWest"]
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preEast"]
*%--------------------|---------------------------------------------------|
*************************************************************************
*************************************************************************
**********************PRE-DEVELOPMENT - 10 YEAR Event ********************
*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                     Chicago Rainfall Distribution
*
*************************************************************************
*%--------------------|---------------------------------------------------|
CHICAGO STORM         IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                      ICASEcs=[2],
                      Enter ordinates of IDF curve below, at least seven points
                          TIME (min)    Intensity(mm/hr)
                            [5]         [150]
                            [10]        [115]
                            [15]        [95]
                            [30]        [62]
                            [60]        [41]
                            [120]       [23]
                            [360]       [10]
                            [720]       [5.5]
                            [1440]      [3.1]
                              -1            -1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 101 (West)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
                      DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
                      N=[3], TP=[1.04]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 102 (East)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
                      DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
                      N=[3], TP=[1.43]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preWest"]
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preEast"]
*%--------------------|---------------------------------------------------|
*************************************************************************
*************************************************************************
**********************PRE-DEVELOPMENT - 25 YEAR Event ********************
*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                     Chicago Rainfall Distribution
*
*************************************************************************
*%--------------------|---------------------------------------------------|
CHICAGO STORM         IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                      ICASEcs=[2],
                      Enter ordinates of IDF curve below, at least seven points
                          TIME (min)    Intensity(mm/hr)
                            [5]         [175]
                            [10]        [130]
                            [15]        [110]
                            [30]        [73]
                            [60]        [49]
                            [120]       [27]
                            [360]       [12]
                            [720]       [6.6]
                            [1440]      [3.6]
                              -1            -1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 101 (West)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
                      DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
                      N=[3], TP=[1.04]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 102 (East)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
                      DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
                      N=[3], TP=[1.43]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preWest"]
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preEast"]
*%--------------------|---------------------------------------------------|
*************************************************************************
*************************************************************************
**********************PRE-DEVELOPMENT - 50 YEAR Event ********************
*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                     Chicago Rainfall Distribution
*
*************************************************************************
*%--------------------|---------------------------------------------------|
CHICAGO STORM         IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                      ICASEcs=[2],
                      Enter ordinates of IDF curve below, at least seven points
                          TIME (min)    Intensity(mm/hr)
                            [5]         [195]
                            [10]        [145]
                            [15]        [125]
                            [30]        [81]
                            [60]        [55]
                            [120]       [30]
                            [360]       [13]
                            [720]       [7.4]
                            [1440]      [4.0]
                              -1            -1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 101 (West)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
                      DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
                      N=[3], TP=[1.04]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 102 (East)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
                      DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
                      N=[3], TP=[1.43]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preWest"]
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preEast"]
*%--------------------|---------------------------------------------------|
*************************************************************************
*************************************************************************
**********************PRE-DEVELOPMENT - 100 YEAR Event ********************
*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                     Chicago Rainfall Distribution
*
*************************************************************************
*%--------------------|---------------------------------------------------|
CHICAGO STORM         IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
                      ICASEcs=[2],
                      Enter ordinates of IDF curve below, at least seven points
                          TIME (min)    Intensity(mm/hr)
                            [5]         [215]
                            [10]        [160]
                            [15]        [135]
                            [30]        [89]
                            [60]        [61]
                            [120]       [33]
                            [360]       [15]
                            [720]       [8.2]
                            [1440]      [4.4]
                              -1            -1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 101 (West)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
                      DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
                      N=[3], TP=[1.04]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
*#--------------------|---------------------Area 102 (East)---------------|
*%--------------------|---------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
                      DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
                      N=[3], TP=[1.43]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preWest"]
*%--------------------|---------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["preEast"]
*%--------------------|---------------------------------------------------|
FINISH
```

```
 ============================================================================================
 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
 S       W W W   MM MM   H   H   Y Y    MM MM   O   O           2     0   0   11   7     7
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O         2      0   0   11       7  Ver4.05.0
     S    W W    M   M   H   H     Y     M   M   O   O       222     0   0   11      7   APR 2017
 SSSSS    W W    M   M   H   H     Y     M   M    OOO        2       0   0   11     7    ========
                                                            2       0   0   11    7     # 3737016
       StormWater Management HYdrologic Model                222     000    11    7     ========

 ************************************************************************************************
 ***************************************  SWMHYMO Ver4.05.0  ************************************
 ******************  A single event and continuous hydrologic simulation model  *******************
 ******************     based on the principles of HYMO and its successors      *******************
 ******************                 OTTHYMO-83 and OTTHYMO-89.                  *******************
 ************************************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *******************
 ******************                  Ottawa,  Ontario: (613) 836-3884           *******************
 ******************                  Gatineau, Quebec: (819) 243-6858           *******************
 ******************                  E-Mail: swmhymo@jfsa.com                   *******************
 ************************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ******************                  ++++++ PROGRAM ARRAY DIMENSIONS ++++++              *******************
 ******************                  Maximum value for ID numbers  :     11             *******************
 ******************                  Max. number of rainfall points: 105408             *******************
 ******************                  Max. number of flow points    : 105408             *******************
 ************************************************************************************************

 ******************************   S U M M A R Y   O U T P U T   ******************************
 ************************************************************************************************
 *                RUN DATE: 2019-07-25     TIME: 20:55:22     RUN COUNTER: 000002                *
 ************************************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Pre\ALL_CHI.dat                                                          *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Pre\ALL_CHI.out                                                          *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Pre\ALL_CHI.sum                                                          *
 * User comments:                                                                               *
 * 1:_____________________________________________________________________________________*
 * 2:_____________________________________________________________________________________*
 * 3:_____________________________________________________________________________________*
 ************************************************************************************************


#*******************************************************************************
#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
#  Date        : 01-17-2011
#  Updated     : 07-25-2019
#  Modeller    : [J.Proctor/R.Alexander]
#  Company     : C.F. Crozier & Associates Inc.
#  License #   :  3737016
#*******************************************************************************
#  J:\200\281-...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\ALL_CHI.dat
#*******************************************************************************
 RUN#:COMMAND#
R0001:C00001-------------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on        0]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0001 ]
#*******************************************************************************
#*********************PRE-DEVELOPMENT - 2 YEAR Event **********************
#*******************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#              Chicago Rainfall Distribution
#*******************************************************************************
R0001:C00002-------------------------------------------------------------------------------------
     CHICAGO STORM
       [SDT= 5.00:SDUR=   4.00:PTOT=  33.82]
       {A/B/C= 793.404/  7.539/    .824: R=.9996}
#-----------------|--------------------Area 101 (West)-----------------------|
R0001:C00003------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 01:101          16.90     .053 No_date    2:50    3.14 .093     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#-----------------|--------------------Area 102 (East)-----------------------|
R0001:C00004------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 02:102          34.10     .083 No_date    3:25    3.03 .090     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00005------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 01:101          16.90     .053 No_date    2:50    3.14 n/a      .000
       fname :101.0001
       remark:preWest
R0001:C00006------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 02:102          34.10     .083 No_date    3:25    3.03 n/a      .000
       fname :102.0001
       remark:preEast
#*******************************************************************************
#*********************PRE-DEVELOPMENT - 5 YEAR Event **********************
#*******************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#              Chicago Rainfall Distribution
#*******************************************************************************
R0001:C00007-------------------------------------------------------------------------------------
     CHICAGO STORM
       [SDT= 5.00:SDUR=   4.00:PTOT=  45.85]
       {A/B/C=1142.331/  9.025/    .834: R=.9999}
#-----------------|--------------------Area 101 (West)-----------------------|
R0001:C00008------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 01:101          16.90     .106 No_date    2:45    6.11 .133     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#-----------------|--------------------Area 102 (East)-----------------------|
R0001:C00009------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 02:102          34.10     .175 No_date    3:20    6.28 .137     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00010------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 01:101          16.90     .106 No_date    2:45    6.11 n/a      .000
       fname :101.0001
       remark:preWest
R0001:C00011------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 02:102          34.10     .175 No_date    3:20    6.28 n/a      .000
       fname :102.0001
       remark:preEast
#*******************************************************************************
#*********************PRE-DEVELOPMENT - 10 YEAR Event **********************
#*******************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#              Chicago Rainfall Distribution
#*******************************************************************************
R0001:C00012-------------------------------------------------------------------------------------
     CHICAGO STORM
       [SDT= 5.00:SDUR=   4.00:PTOT=  54.36]
       {A/B/C=1362.588/  9.188/    .835: R=.9999}
#-----------------|--------------------Area 101 (West)-----------------------|
R0001:C00013------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 01:101          16.90     .152 No_date    2:45    8.70 .160     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#-----------------|--------------------Area 102 (East)-----------------------|
R0001:C00014------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 02:102          34.10     .256 No_date    3:20    9.15 .168     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00015------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 01:101          16.90     .152 No_date    2:45    8.70 n/a      .000
       fname :101.0001
       remark:preWest
R0001:C00016------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 02:102          34.10     .256 No_date    3:20    9.15 n/a      .000
       fname :102.0001
       remark:preEast
#*******************************************************************************
#*********************PRE-DEVELOPMENT - 25 YEAR Event **********************
#*******************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#              Chicago Rainfall Distribution
#*******************************************************************************
R0001:C00017-------------------------------------------------------------------------------------
     CHICAGO STORM
       [SDT= 5.00:SDUR=   4.00:PTOT=  64.48]
       {A/B/C=1706.133/  10.500/    .844: R=.9998}
#-----------------|--------------------Area 101 (West)-----------------------|
R0001:C00018------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 01:101          16.90     .216 No_date    2:45   12.24 .190     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#-----------------|--------------------Area 102 (East)-----------------------|
R0001:C00019------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 02:102          34.10     .370 No_date    3:15   13.08 .203     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00020------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 01:101          16.90     .216 No_date    2:45   12.24 n/a      .000
       fname :101.0001
       remark:preWest
R0001:C00021------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 02:102          34.10     .370 No_date    3:15   13.08 n/a      .000
       fname :102.0001
       remark:preEast
#*******************************************************************************
#*********************PRE-DEVELOPMENT - 50 YEAR Event **********************
#*******************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#              Chicago Rainfall Distribution
#*******************************************************************************
R0001:C00022-------------------------------------------------------------------------------------
     CHICAGO STORM
       [SDT= 5.00:SDUR=   4.00:PTOT=  71.55]
       {A/B/C=1924.754/  10.500/    .847: R=.9998}
#-----------------|--------------------Area 101 (West)-----------------------|
R0001:C00023------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 01:101          16.90     .266 No_date    2:45   14.99 .209     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#-----------------|--------------------Area 102 (East)-----------------------|
R0001:C00024------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 02:102          34.10     .458 No_date    3:15   16.14 .226     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00025------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 01:101          16.90     .266 No_date    2:45   14.99 n/a      .000
       fname :101.0001
       remark:preWest
R0001:C00026------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 02:102          34.10     .458 No_date    3:15   16.14 n/a      .000
       fname :102.0001
       remark:preEast
#*******************************************************************************
#*********************PRE-DEVELOPMENT - 100 YEAR Event **********************
#*******************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#              Chicago Rainfall Distribution
#*******************************************************************************
R0001:C00027-------------------------------------------------------------------------------------
     CHICAGO STORM
       [SDT= 5.00:SDUR=   4.00:PTOT=  79.80]
       {A/B/C=2088.320/  10.500/    .842: R=.9996}
#-----------------|--------------------Area 101 (West)-----------------------|
R0001:C00028------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 01:101          16.90     .327 No_date    2:45   18.45 .231     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#-----------------|--------------------Area 102 (East)-----------------------|
R0001:C00029------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD           5.0 02:102          34.10     .568 No_date    3:15   19.99 .250     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00030------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 01:101          16.90     .327 No_date    2:45   18.45 n/a      .000
       fname :101.0001
       remark:preWest
R0001:C00031------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD               5.0 02:102          34.10     .568 No_date    3:15   19.99 n/a      .000
       fname :102.0001
       remark:preEast
R0001:C00032-------------------------------------------------------------------------------------
     FINISH
 -------------------------------------------------------------------------------------------------
 *************************************************************************************************
      WARNINGS / ERRORS / NOTES
      -------------------------
   Simulation ended on 2019-07-25     at 20:55:23
 =================================================================================================

```

```
00001> ================================================================================
00002>
00003>  SSSSS   W   W   M   M    H   H    Y   Y    M   M     OOO          222     000    11   77777 ========
00004>  S       W W W   MM MM    H   H    Y Y     MM MM    O   O           2   0   0   11   7     7
00005>  SSSSS   W W W   M M M    HHHHH     Y      M M M    O   O           2   0   0   11       7 Ver4.05.0
00006>      S   W W     M   M    H   H     Y      M   M    O   O         222   0   0   11      7  APR 2017
00007>  SSSSS    W W     M   M    H   H     Y      M   M     OOO          2     0   0   11     7   =========
00008>                                                                    2     0   0   11    7    # 3737016
00009>        StormWater Management HYdrologic Model                     222     000    11    7    =========
00010>
00011> ********************************************************************************
00012> ***************************************  SWMHYMO Ver4.05.0  ***********************
00013> ****************  A single event and continuous hydrologic simulation model  ******
00014> ****************      based on the principles of HYMO and its successors      ******
00015> ****************                 OTTHYMO-83 and OTTHYMO-89.                    ******
00016> ********************************************************************************
00017> ****************  Distributed by:  J.F. Sabourin and Associates Inc.          ******
00018> ****************                  Ottawa,  Ontario: (613) 836-3884            ******
00019> ****************                  Gatineau, Quebec: (819) 243-6858            ******
00020> ****************                  E-Mail: swmhymo@jfsa.com                    ******
00021> ********************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016      ++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ********************************************************************************
00029> ****************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++      ******
00030> ****************                Maximum value for ID numbers  :   11        ******
00031> ****************                Max. number of rainfall points: 105408      ******
00032> ****************                Max. number of flow points    : 105408      ******
00033> ********************************************************************************
00034>
00035> ********************************************************************************
00036> ***************************************  SWMHYMO Ver4.05.0  ***********************
00037> ****************  A single event and continuous hydrologic simulation model  ******
00038> ****************      based on the principles of HYMO and its successors      ******
00039> ****************                 OTTHYMO-83 and OTTHYMO-89.                    ******
00040> ********************************************************************************
00041> ****************  Distributed by:  J.F. Sabourin and Associates Inc.          ******
00042> ****************                  Ottawa,  Ontario: (613) 836-3884            ******
00043> ****************                  Gatineau, Quebec: (819) 243-6858            ******
00044> ****************                  E-Mail: swmhymo@jfsa.com                    ******
00045> ********************************************************************************
00046>
00047> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00048> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++
00049> ++++++++++++++++++                 Collingwood          SERIAL#:3737016      ++++++++++++++++++
00050> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00051>
00052> ********************************************************************************
00053> ****************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++      ******
00054> ****************                Maximum value for ID numbers  :   11        ******
00055> ****************                Max. number of rainfall points: 105408      ******
00056> ****************                Max. number of flow points    : 105408      ******
00057> ********************************************************************************
00058>
00059>
00060> ******************************  D E T A I L E D   O U T P U T  ******************************
00061> ********************************************************************************
00062> *            RUN DATE: 2019-07-25       TIME: 20:55:22     RUN COUNTER: 000002          *
00063> ********************************************************************************
00064> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00065> *               HYMO\Pre\ALL_CHI.dat                                                   *
00066> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00067> *               HYMO\Pre\ALL_CHI.out                                                   *
00068> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00069> *               HYMO\Pre\ALL_CHI.sum                                                   *
00070> * User comments:                                                                     *
00071> * 1:_____________________________________________________________________________*
00072> * 2:_____________________________________________________________________________*
00073> * 3:_____________________________________________________________________________*
00074> ********************************************************************************
00075>
00076> --------------------------------------------------------------------------------
00077> R0001:C00001------------------------------------------------------------------------
00078> *#*****************************************************************************
00079> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00080> *#  Date        : 01-17-2011
00081> *#  Updated     : 07-25-2019
00082> *#  Modeller    : [J.Proctor/R.Alexander]
00083> *#  Company     : C.F. Crozier & Associates Inc.
00084> *#  License #   :  3737016
00085> *#*****************************************************************************
00086> *#  J:\200\281-...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\ALL_CHI.dat
00087> *#*****************************************************************************
00088> --------------------
00089> | START            | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00090> -------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00091>     TZERO =   .00 hrs on       0
00092>     METOUT=   2 (output = METRIC)
00093>     NRUN  = 0001
00094>     NSTORM=   0
00095> --------------------------------------------------------------------------------
00096> R0001:C00002------------------------------------------------------------------------
00097> *#*****************************************************************************
00098> *#**********************PRE-DEVELOPMENT - 2 YEAR Event **************************
00099> *#*****************************************************************************
00100> *
00101> *#   Rainfall Depths per MTO - Basins East of Collingwood
00102> *#                  Chicago Rainfall Distribution
00103> *
00104> *#*****************************************************************************
00105> --------------------
00106> | CHICAGO STORM    |    IDF curve parameters: A= 793.404
00107> | Ptotal= 33.82 mm |                          B=   7.539
00108> --------------------                          C=    .824
00109>                          used in:   INTENSITY =  A / (t + B)^C
00110>
00111>                          Duration of storm  =  4.00 hrs
00112>                          Storm time step    =  5.00 min
00113>                          Time to peak ratio =   .33
00114>
00115>                     The CORRELATION coefficient is = .9995845
00116>
00117>                      TIME        ENTERED             COMPUTED
00118>                     (min)        (mm/hr)              (mm/hr)
00119>                        5.          95.00               98.75
00120>                       10.          79.00               74.89
00121>                       15.          62.00               60.91
00122>                       30.          40.00               40.01
00123>                       60.          25.00               24.66
00124>                      120.          14.00               14.60
00125>                      360.           6.10                6.10
00126>                      720.           3.30                3.48
00127>                     1440.           2.10                1.97
00128>
00129>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00130>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00131>        0:05  1.822|   0:45   3.837|   1:25  46.015|   2:05   5.750|   2:45   3.066|   3:25   2.127
00132>        0:10  1.944|   0:50   4.499|   1:30  25.872|   2:10   5.171|   2:50   2.902|   3:30   2.051
00133>        0:15  2.086|   0:55   5.453|   1:35  17.562|   2:15   4.700|   2:55   2.756|   3:35   1.980
00134>        0:20  2.251|   1:00   6.943|   1:40  13.162|   2:20   4.310|   3:00   2.624|   3:40   1.914
00135>        0:25  2.448|   1:05   9.575|   1:45  10.482|   2:25   3.982|   3:05   2.505|   3:45   1.853
00136>        0:30  2.686|   1:10  15.343|   1:50   8.695|   2:30   3.703|   3:10   2.398|   3:50   1.796
00137>        0:35  2.980|   1:15  35.921|   1:55   7.425|   2:35   3.461|   3:15   2.299|   3:55   1.743
00138>        0:40  3.351|   1:20  98.747|   2:00   6.480|   2:40   3.251|   3:20   2.210|   4:00   1.693
00139>
00140> --------------------------------------------------------------------------------
00141> R0001:C00003------------------------------------------------------------------------
00142> *#-----------------|---------------------Area 101 (West)----------------------|
00143>  -------------------
00144> | CALIB NASHYD          |   Area     (ha)=   16.900   Curve Number    (CN)= 53.20
00145> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00146>  -----------------------   U.H. Tp(hrs)=    1.040
00147>
00148>      Unit Hyd Qpeak  (cms)=     .621
00149>
00150>      PEAK FLOW       (cms)=     .053 (i)
00151>      TIME TO PEAK    (hrs)=    2.833
00152>      DURATION        (hrs)=   11.250, (dddd|hh:mm:)=   0|11:15
00153>      AVERAGE FLOW    (cms)=     .013
00154>      RUNOFF VOLUME    (mm)=    3.141
00155>      TOTAL RAINFALL   (mm)=   33.819
00156>      RUNOFF COEFFICIENT   =     .093
00157>
00158>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00159>
00160> --------------------------------------------------------------------------------
00161> R0001:C00004------------------------------------------------------------------------
00162> *#-----------------|---------------------Area 102 (East)----------------------|
00163>  -------------------
00164> | CALIB NASHYD          |   Area     (ha)=   34.100   Curve Number    (CN)= 58.40
00165> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00166>  -----------------------   U.H. Tp(hrs)=    1.430
00167>
00168>      Unit Hyd Qpeak  (cms)=     .911
00169>
00170>      PEAK FLOW       (cms)=     .083 (i)
00171>      TIME TO PEAK    (hrs)=    3.417
00172>      DURATION        (hrs)=   14.000, (dddd|hh:mm:)=   0|14:00
00173>      AVERAGE FLOW    (cms)=     .020
00174>      RUNOFF VOLUME    (mm)=    3.028
00175>      TOTAL RAINFALL   (mm)=   33.819
00176>      RUNOFF COEFFICIENT   =     .090
00177>
00178>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00179>
00180> --------------------------------------------------------------------------------
00181> R0001:C00005------------------------------------------------------------------------
00182>  -------------------
00183> | SAVE HYD          |   AREA       (ha)=   16.900
00184> | ID=01:101         |   QPEAK      (cms)=     .053 (i)
00185> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=    2.833
00186>  -------------------   VOLUME       (mm)=    3.141
00187>   Filename: 101.0001
00188>   Comments: preWest
00189>
00190>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00191> --------------------------------------------------------------------------------
00192> R0001:C00006------------------------------------------------------------------------
00193>  -------------------
00194> | SAVE HYD          |   AREA       (ha)=   34.100
00195> | ID=02:102         |   QPEAK      (cms)=     .083 (i)
00196> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=    3.417
00197>  -------------------   VOLUME       (mm)=    3.028
00198>   Filename: 102.0001
00199>   Comments: preEast
00200>
00201>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00202> --------------------------------------------------------------------------------
00203> R0001:C00007------------------------------------------------------------------------
00204> *#*****************************************************************************
00205> *#*********************PRE-DEVELOPMENT - 5 YEAR Event **************************
00206> *#*****************************************************************************
00207> *
00208> *#   Rainfall Depths per MTO - Basins East of Collingwood
00209> *#                  Chicago Rainfall Distribution
00210> *
00211> *#*****************************************************************************
00212>  --------------------
00213> | CHICAGO STORM    |    IDF curve parameters: A=1142.331
00214> | Ptotal= 45.85 mm |                          B=   9.025
00215>  --------------------                          C=    .834
00216>                          used in:   INTENSITY =  A / (t + B)^C
00217>
00218>                          Duration of storm  =  4.00 hrs
00219>                          Storm time step    =  5.00 min
00220>                          Time to peak ratio =   .33
00221>
00222>                     The CORRELATION coefficient is = .9998649
00223>
00224>                      TIME        ENTERED             COMPUTED
00225>                     (min)        (mm/hr)              (mm/hr)
00226>                        5.         125.00               126.26
00227>                       10.         100.00                97.91
00228>                       15.          82.00                80.60
00229>                       30.          53.00                53.78
00230>                       60.          34.00                33.42
00231>                      120.          19.00                19.84
00232>                      360.           8.40                 8.26
00233>                      720.           4.60                 4.68
00234>                     1440.           2.70                 2.64
00235>
00236>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00237>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00238>        0:05  2.417|   0:45   5.236|   1:25  63.053|   2:05   7.964|   2:45   4.147|   3:25   2.837
00239>        0:10  2.585|   0:50   6.176|   1:30  36.365|   2:10   7.135|   2:50   3.917|   3:30   2.731
00240>        0:15  2.780|   0:55   7.538|   1:35  24.820|   2:15   6.463|   2:55   3.712|   3:35   2.634
00241>        0:20  3.009|   1:00   9.674|   1:40  18.587|   2:20   5.908|   3:00   3.528|   3:40   2.543
00242>        0:25  3.283|   1:05  13.454|   1:45  14.756|   2:25   5.442|   3:05   3.362|   3:45   2.459
00243>        0:30  3.615|   1:10  21.676|   1:50  12.191|   2:30   5.045|   3:10   3.212|   3:50   2.381
00244>        0:35  4.026|   1:15  49.678|   1:55  10.367|   2:35   4.704|   3:15   3.076|   3:55   2.308
00245>        0:40  4.549|   1:20 126.263|   2:00   9.010|   2:40   4.407|   3:20   2.951|   4:00   2.240
00246>
00247> --------------------------------------------------------------------------------
00248> R0001:C00008------------------------------------------------------------------------
00249> *#-----------------|---------------------Area 101 (West)----------------------|
00250>  -------------------
00251> | CALIB NASHYD          |   Area     (ha)=   16.900   Curve Number    (CN)= 53.20
00252> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00253>  -----------------------   U.H. Tp(hrs)=    1.040
00254>
00255>      Unit Hyd Qpeak  (cms)=     .621
00256>
00257>      PEAK FLOW       (cms)=     .106 (i)
00258>      TIME TO PEAK    (hrs)=    2.750
00259>      DURATION        (hrs)=   11.250, (dddd|hh:mm:)=   0|11:15
00260>      AVERAGE FLOW    (cms)=     .026
00261>      RUNOFF VOLUME    (mm)=    6.113
00262>      TOTAL RAINFALL   (mm)=   45.851
00263>      RUNOFF COEFFICIENT   =     .133
00264>
00265>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00266>
00267> --------------------------------------------------------------------------------
00268> R0001:C00009------------------------------------------------------------------------
00269> *#-----------------|---------------------Area 102 (East)----------------------|
00270>  -------------------
00271> | CALIB NASHYD          |   Area     (ha)=   34.100   Curve Number    (CN)= 58.40
00272> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00273>  -----------------------   U.H. Tp(hrs)=    1.430
00274>
00275>      Unit Hyd Qpeak  (cms)=     .911
00276>
00277>      PEAK FLOW       (cms)=     .175 (i)
00278>      TIME TO PEAK    (hrs)=    3.333
00279>      DURATION        (hrs)=   14.000, (dddd|hh:mm:)=   0|14:00
00280>      AVERAGE FLOW    (cms)=     .043
00281>      RUNOFF VOLUME    (mm)=    6.282
00282>      TOTAL RAINFALL   (mm)=   45.851
00283>      RUNOFF COEFFICIENT   =     .137
00284>
00285>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00286>
00287> --------------------------------------------------------------------------------
00288> R0001:C00010------------------------------------------------------------------------
00289>  -------------------
00290> | SAVE HYD          |   AREA       (ha)=   16.900
00291> | ID=01:101         |   QPEAK      (cms)=     .106 (i)
00292> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=    2.750
00293>  -------------------   VOLUME       (mm)=    6.113
00294>   Filename: 101.0001
00295>   Comments: preWest
00296>
00297>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00298> --------------------------------------------------------------------------------
00299> R0001:C00011------------------------------------------------------------------------
00300>  -------------------
00301> | SAVE HYD          |   AREA       (ha)=   34.100
00302> | ID=02:102         |   QPEAK      (cms)=     .175 (i)
00303> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=    3.333
00304>  -------------------   VOLUME       (mm)=    6.282
00305>   Filename: 102.0001
00306>   Comments: preEast
00307>
00308>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
00309> ------------------------------------------------------------------------------------------------
00310> R0001:C00012------------------------------------------------------------------------------------
00311> *#**************************************************************************
00312> *#**********************PRE-DEVELOPMENT - 10 YEAR Event **********************
00313> *#**************************************************************************
00314> *
00315> *#   Rainfall Depths per MTO - Basins East of Collingwood
00316> *#                    Chicago Rainfall Distribution
00317> *
00318> *#**************************************************************************
00319> --------------------
00320> | CHICAGO STORM    |    IDF curve parameters: A=1362.588
00321> | Ptotal= 54.36 mm |                          B=   9.188
00322> --------------------                          C=    .835
00323>                          used in:   INTENSITY =  A / (t + B)^C
00324>
00325>                          Duration of storm  =  4.00 hrs
00326>                          Storm time step    =  5.00 min
00327>                          Time to peak ratio =   .33
00328>
00329>                       The CORRELATION coefficient is = .9999022
00330>
00331>                        TIME        ENTERED             COMPUTED
00332>                       (min)        (mm/hr)              (mm/hr)
00333>                          5.         150.00               148.77
00334>                         10.         115.00               115.62
00335>                         15.          95.00                95.29
00336>                         30.          62.00                63.69
00337>                         60.          41.00                39.62
00338>                        120.          23.00                23.52
00339>                        360.          10.00                 9.79
00340>                        720.           5.50                 5.54
00341>                       1440.           3.10                 3.12
00342>
00343>      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00344>     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00345>      0:05   2.860|   0:45   6.214|   1:25  74.800|   2:05   9.465|   2:45   4.917|   3:25   3.358
00346>      0:10   3.059|   0:50   7.334|   1:30  43.260|   2:10   8.477|   2:50   4.643|   3:30   3.233
00347>      0:15   3.291|   0:55   8.958|   1:35  29.549|   2:15   7.676|   2:55   4.399|   3:35   3.117
00348>      0:20   3.564|   1:00  11.505|   1:40  22.129|   2:20   7.014|   3:00   4.181|   3:40   3.010
00349>      0:25   3.889|   1:05  16.012|   1:45  17.564|   2:25   6.459|   3:05   3.984|   3:45   2.910
00350>      0:30   4.284|   1:10  25.806|   1:50  14.506|   2:30   5.987|   3:10   3.805|   3:50   2.817
00351>      0:35   4.773|   1:15  58.993|   1:55  12.331|   2:35   5.580|   3:15   3.643|   3:55   2.731
00352>      0:40   5.396|   1:20 148.768|   2:00  10.713|   2:40   5.227|   3:20   3.495|   4:00   2.649
00353>
00354> ------------------------------------------------------------------------------------------------
00355> R0001:C00013------------------------------------------------------------------------------------
00356> *#-------------------|----------------------Area 101 (West)----------------------|
00357> --------------------------
00358> | CALIB NASHYD           |   Area     (ha)=   16.900   Curve Number    (CN)= 53.20
00359> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00360> --------------------------   U.H. Tp(hrs)=    1.040
00361>
00362>      Unit Hyd Qpeak  (cms)=     .621
00363>
00364>      PEAK FLOW       (cms)=     .152 (i)
00365>      TIME TO PEAK    (hrs)=    2.750
00366>      DURATION        (hrs)=   11.250, (dddd|hh:mm:)=   0|11:15
00367>      AVERAGE FLOW    (cms)=     .036
00368>      RUNOFF VOLUME     (mm)=    8.699
00369>      TOTAL RAINFALL    (mm)=   54.361
00370>      RUNOFF COEFFICIENT   =     .160
00371>
00372>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00373>
00374> ------------------------------------------------------------------------------------------------
00375> R0001:C00014------------------------------------------------------------------------------------
00376> *#-------------------|----------------------Area 102 (East)----------------------|
00377> --------------------------
00378> | CALIB NASHYD           |   Area     (ha)=   34.100   Curve Number    (CN)= 58.40
00379> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00380> --------------------------   U.H. Tp(hrs)=    1.430
00381>
00382>      Unit Hyd Qpeak  (cms)=     .911
00383>
00384>      PEAK FLOW       (cms)=     .256 (i)
00385>      TIME TO PEAK    (hrs)=    3.333
00386>      DURATION        (hrs)=   14.000, (dddd|hh:mm:)=   0|14:00
00387>      AVERAGE FLOW    (cms)=     .062
00388>      RUNOFF VOLUME     (mm)=    9.147
00389>      TOTAL RAINFALL    (mm)=   54.361
00390>      RUNOFF COEFFICIENT   =     .168
00391>
00392>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00393>
00394> ------------------------------------------------------------------------------------------------
00395> R0001:C00015------------------------------------------------------------------------------------
00396> --------------------
00397> | SAVE HYD          |   AREA       (ha)=   16.900
00398> | ID=01:101         |   QPEAK      (cms)=    .152 (i)
00399> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=   2.750
00400> --------------------   VOLUME       (mm)=   8.699
00401>   Filename: 101.0001
00402>   Comments: preWest
00403>
00404>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00405> ------------------------------------------------------------------------------------------------
00406> R0001:C00016------------------------------------------------------------------------------------
00407> --------------------
00408> | SAVE HYD          |   AREA       (ha)=   34.100
00409> | ID=02:102         |   QPEAK      (cms)=    .256 (i)
00410> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=   3.333
00411> --------------------   VOLUME       (mm)=   9.147
00412>   Filename: 102.0001
00413>   Comments: preEast
00414>
00415>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00416> ------------------------------------------------------------------------------------------------
00417> R0001:C00017------------------------------------------------------------------------------------
00418> *#**************************************************************************
00419> *#**********************PRE-DEVELOPMENT - 25 YEAR Event **********************
00420> *#**************************************************************************
00421> *
00422> *#   Rainfall Depths per MTO - Basins East of Collingwood
00423> *#                    Chicago Rainfall Distribution
00424> *
00425> *#**************************************************************************
00426> --------------------
00427> | CHICAGO STORM    |    IDF curve parameters: A=1706.133
00428> | Ptotal= 64.48 mm |                          B=  10.500
00429> --------------------                          C=    .844
00430>                          used in:   INTENSITY =  A / (t + B)^C
00431>
00432>                          Duration of storm  =  4.00 hrs
00433>                          Storm time step    =  5.00 min
00434>                          Time to peak ratio =   .33
00435>
00436>                       The CORRELATION coefficient is = .9997648
00437>
00438>                        TIME        ENTERED             COMPUTED
00439>                       (min)        (mm/hr)              (mm/hr)
00440>                          5.         175.00               168.80
00441>                         10.         130.00               133.32
00442>                         15.         110.00               110.89
00443>                         30.          73.00                75.04
00444>                         60.          49.00                47.00
00445>                        120.          27.00                27.95
00446>                        360.          12.00                11.59
00447>                        720.           6.60                 6.53
00448>                       1440.           3.60                 3.66
00449>
00450>      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00451>     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00452>      0:05   3.323|   0:45   7.407|   1:25  89.112|   2:05  11.424|   2:45   5.817|   3:25   3.923
00453>      0:10   3.563|   0:50   8.788|   1:30  52.616|   2:10  10.201|   2:50   5.483|   3:30   3.772
00454>      0:15   3.842|   0:55  10.796|   1:35  36.148|   2:15   9.210|   2:55   5.185|   3:35   3.633
00455>      0:20   4.171|   1:00  13.953|   1:40  27.083|   2:20   8.393|   3:00   4.919|   3:40   3.504
00456>      0:25   4.565|   1:05  19.537|   1:45  21.457|   2:25   7.709|   3:05   4.680|   3:45   3.384
00457>      0:30   5.045|   1:10  31.576|   1:50  17.674|   2:30   7.128|   3:10   4.464|   3:50   3.273
00458>      0:35   5.641|   1:15  70.822|   1:55  14.978|   2:35   6.629|   3:15   4.267|   3:55   3.169
00459>      0:40   6.403|   1:20 168.800|   2:00  12.970|   2:40   6.196|   3:20   4.088|   4:00   3.071
00460>
00461> ------------------------------------------------------------------------------------------------
00462> R0001:C00018------------------------------------------------------------------------------------
00463> *#-------------------|----------------------Area 101 (West)----------------------|
00464> --------------------------
00465> | CALIB NASHYD           |   Area     (ha)=   16.900   Curve Number    (CN)= 53.20
00466> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00467> --------------------------   U.H. Tp(hrs)=    1.040
00468>
00469>      Unit Hyd Qpeak  (cms)=     .621
00470>
00471>      PEAK FLOW       (cms)=     .216 (i)
00472>      TIME TO PEAK    (hrs)=    2.750
00473>      DURATION        (hrs)=   11.250, (dddd|hh:mm:)=   0|11:15
00474>      AVERAGE FLOW    (cms)=     .051
00475>      RUNOFF VOLUME     (mm)=   12.240
00476>      TOTAL RAINFALL    (mm)=   64.483
00477>      RUNOFF COEFFICIENT   =     .190
00478>
00479>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00480>
00481> ------------------------------------------------------------------------------------------------
00482> R0001:C00019------------------------------------------------------------------------------------
00483> *#-------------------|----------------------Area 102 (East)----------------------|
00484> --------------------------
00485> | CALIB NASHYD           |   Area     (ha)=   34.100   Curve Number    (CN)= 58.40
00486> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00487> --------------------------   U.H. Tp(hrs)=    1.430
00488>
00489>      Unit Hyd Qpeak  (cms)=     .911
00490>
00491>      PEAK FLOW       (cms)=     .370 (i)
00492>      TIME TO PEAK    (hrs)=    3.250
00493>      DURATION        (hrs)=   14.000, (dddd|hh:mm:)=   0|14:00
00494>      AVERAGE FLOW    (cms)=     .089
00495>      RUNOFF VOLUME     (mm)=   13.083
00496>      TOTAL RAINFALL    (mm)=   64.483
00497>      RUNOFF COEFFICIENT   =     .203
00498>
00499>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00500>
00501> ------------------------------------------------------------------------------------------------
00502> R0001:C00020------------------------------------------------------------------------------------
00503> --------------------
00504> | SAVE HYD          |   AREA       (ha)=   16.900
00505> | ID=01:101         |   QPEAK      (cms)=    .216 (i)
00506> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=   2.750
00507> --------------------   VOLUME       (mm)=   12.240
00508>   Filename: 101.0001
00509>   Comments: preWest
00510>
00511>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00512> ------------------------------------------------------------------------------------------------
00513> R0001:C00021------------------------------------------------------------------------------------
00514> --------------------
00515> | SAVE HYD          |   AREA       (ha)=   34.100
00516> | ID=02:102         |   QPEAK      (cms)=    .370 (i)
00517> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=   3.250
00518> --------------------   VOLUME       (mm)=   13.083
00519>   Filename: 102.0001
00520>   Comments: preEast
00521>
00522>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00523> ------------------------------------------------------------------------------------------------
00524> R0001:C00022------------------------------------------------------------------------------------
00525> *#**************************************************************************
00526> *#**********************PRE-DEVELOPMENT - 50 YEAR Event **********************
00527> *#**************************************************************************
00528> *
00529> *#   Rainfall Depths per MTO - Basins East of Collingwood
00530> *#                    Chicago Rainfall Distribution
00531> *
00532> *#**************************************************************************
00533> --------------------
00534> | CHICAGO STORM    |    IDF curve parameters: A=1924.754
00535> | Ptotal= 71.55 mm |                          B=  10.500
00536> --------------------                          C=    .847
00537>                          used in:   INTENSITY =  A / (t + B)^C
00538>
00539>                          Duration of storm  =  4.00 hrs
00540>                          Storm time step    =  5.00 min
00541>                          Time to peak ratio =   .33
00542>
00543>                       The CORRELATION coefficient is = .9997656
00544>
00545>                        TIME        ENTERED             COMPUTED
00546>                       (min)        (mm/hr)              (mm/hr)
00547>                          5.         195.00               188.87
00548>                         10.         145.00               149.05
00549>                         15.         125.00               123.89
00550>                         30.          81.00                83.73
00551>                         60.          55.00                52.36
00552>                        120.          30.00                31.08
00553>                        360.          13.00                12.84
00554>                        720.           7.40                 7.23
00555>                       1440.           4.00                 4.04
00556>
00557>      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00558>     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00559>      0:05   3.634|   0:45   8.143|   1:25  99.441|   2:05  12.597|   2:45   6.385|   3:25   4.295
00560>      0:10   3.898|   0:50   9.673|   1:30  58.562|   2:10  11.239|   2:50   6.015|   3:30   4.128
00561>      0:15   4.205|   0:55  11.899|   1:35  40.150|   2:15  10.140|   2:55   5.687|   3:35   3.975
00562>      0:20   4.568|   1:00  15.406|   1:40  30.030|   2:20   9.235|   3:00   5.393|   3:40   3.833
00563>      0:25   5.002|   1:05  21.620|   1:45  23.758|   2:25   8.477|   3:05   5.129|   3:45   3.701
00564>      0:30   5.531|   1:10  35.046|   1:50  19.545|   2:30   7.834|   3:10   4.890|   3:50   3.578
00565>      0:35   6.190|   1:15  78.954|   1:55  16.545|   2:35   7.282|   3:15   4.673|   3:55   3.464
00566>      0:40   7.032|   1:20 188.871|   2:00  14.314|   2:40   6.804|   3:20   4.476|   4:00   3.357
00567>
00568> ------------------------------------------------------------------------------------------------
00569> R0001:C00023------------------------------------------------------------------------------------
00570> *#-------------------|----------------------Area 101 (West)----------------------|
00571> --------------------------
00572> | CALIB NASHYD           |   Area     (ha)=   16.900   Curve Number    (CN)= 53.20
00573> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00574> --------------------------   U.H. Tp(hrs)=    1.040
00575>
00576>      Unit Hyd Qpeak  (cms)=     .621
00577>
00578>      PEAK FLOW       (cms)=     .266 (i)
00579>      TIME TO PEAK    (hrs)=    2.750
00580>      DURATION        (hrs)=   11.250, (dddd|hh:mm:)=   0|11:15
00581>      AVERAGE FLOW    (cms)=     .063
00582>      RUNOFF VOLUME     (mm)=   14.985
00583>      TOTAL RAINFALL    (mm)=   71.550
00584>      RUNOFF COEFFICIENT   =     .209
00585>
00586>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00587>
00588> ------------------------------------------------------------------------------------------------
00589> R0001:C00024------------------------------------------------------------------------------------
00590> *#-------------------|----------------------Area 102 (East)----------------------|
00591> --------------------------
00592> | CALIB NASHYD           |   Area     (ha)=   34.100   Curve Number    (CN)= 58.40
00593> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00594> --------------------------   U.H. Tp(hrs)=    1.430
00595>
00596>      Unit Hyd Qpeak  (cms)=     .911
00597>
00598>      PEAK FLOW       (cms)=     .458 (i)
00599>      TIME TO PEAK    (hrs)=    3.250
00600>      DURATION        (hrs)=   14.000, (dddd|hh:mm:)=   0|14:00
00601>      AVERAGE FLOW    (cms)=     .109
00602>      RUNOFF VOLUME     (mm)=   16.136
00603>      TOTAL RAINFALL    (mm)=   71.550
00604>      RUNOFF COEFFICIENT   =     .226
00605>
00606>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00607>
00608> ------------------------------------------------------------------------------------------------
00609> R0001:C00025------------------------------------------------------------------------------------
00610> --------------------
00611> | SAVE HYD          |   AREA       (ha)=   16.900
00612> | ID=01:101         |   QPEAK      (cms)=    .266 (i)
00613> | DT= 5.00 PCYC=-1  |   TPEAK      (hrs)=   2.750
00614> --------------------   VOLUME       (mm)=   14.985
00615>   Filename: 101.0001
00616>   Comments: preWest
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00617>
00618>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00619> ---------------------------------------------------------------------------------------------------
00620> R0001:C00026---------------------------------------------------------------------------------------
00621> --------------------
00622> | SAVE HYD          |   AREA       (ha)=   34.100
00623> | ID=02:102         |   QPEAK     (cms)=     .458 (i)
00624> | DT= 5.00 PCYC=-1 |   TPEAK     (hrs)=    3.250
00625> --------------------   VOLUME      (mm)=   16.136
00626>   Filename: 102.0001
00627>   Comments: preEast
00628>
00629>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00630> ---------------------------------------------------------------------------------------------------
00631> R0001:C00027---------------------------------------------------------------------------------------
00632> *#*************************************************************************
00633> *#**********************PRE-DEVELOPMENT - 100 YEAR Event **********************
00634> *#*************************************************************************
00635> *
00636> *#   Rainfall Depths per MTO - Basins East of Collingwood
00637> *#                    Chicago Rainfall Distribution
00638> *
00639> *#*************************************************************************
00640> --------------------
00641> | CHICAGO STORM    |    IDF curve parameters: A=2088.320
00642> | Ptotal= 79.80 mm |                          B=  10.500
00643> --------------------                          C=    .842
00644>                         used in:   INTENSITY =  A / (t + B)^C
00645>
00646>                         Duration of storm  =  4.00 hrs
00647>                         Storm time step    =  5.00 min
00648>                         Time to peak ratio =   .33
00649>
00650>                      The CORRELATION coefficient is = .9996362
00651>
00652>                       TIME        ENTERED             COMPUTED
00653>                      (min)        (mm/hr)             (mm/hr)
00654>                        5.          215.00              207.75
00655>                       10.          160.00              164.17
00656>                       15.          135.00              136.61
00657>                       30.           89.00               92.54
00658>                       60.           61.00               58.03
00659>                      120.           33.00               34.55
00660>                      360.           15.00               14.35
00661>                      720.            8.20                8.10
00662>                     1440.            4.40                4.55
00663>
00664>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00665>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00666>       0:05   4.153|   0:45   9.224|   1:25 109.869|   2:05  14.197|   2:45   7.252|   3:25   4.899
00667>       0:10   4.451|   0:50  10.935|   1:30  64.984|   2:10  12.683|   2:50   6.836|   3:30   4.711
00668>       0:15   4.798|   0:55  13.420|   1:35  44.706|   2:15  11.457|   2:55   6.467|   3:35   4.538
00669>       0:20   5.207|   1:00  17.324|   1:40  33.532|   2:20  10.445|   3:00   6.137|   3:40   4.377
00670>       0:25   5.697|   1:05  24.223|   1:45  26.593|   2:25   9.598|   3:05   5.840|   3:45   4.228
00671>       0:30   6.293|   1:10  39.070|   1:50  21.922|   2:30   8.878|   3:10   5.571|   3:50   4.090
00672>       0:35   7.033|   1:15  87.375|   1:55  18.591|   2:35   8.259|   3:15   5.326|   3:55   3.960
00673>       0:40   7.978|   1:20 207.748|   2:00  16.110|   2:40   7.722|   3:20   5.104|   4:00   3.839
00674>
00675> ---------------------------------------------------------------------------------------------------
00676> R0001:C00028---------------------------------------------------------------------------------------
00677> *#-------------------|---------------------Area 101 (West)----------------------|
00678> --------------------
00679> | CALIB NASHYD           |   Area     (ha)=   16.900   Curve Number   (CN)= 53.20
00680> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00681> ------------------------   U.H. Tp(hrs)=    1.040
00682>
00683>      Unit Hyd Qpeak  (cms)=     .621
00684>
00685>      PEAK FLOW       (cms)=     .327 (i)
00686>      TIME TO PEAK    (hrs)=    2.750
00687>      DURATION        (hrs)=   11.250, (dddd|hh:mm:)=   0|11:15
00688>      AVERAGE FLOW    (cms)=     .077
00689>      RUNOFF VOLUME    (mm)=   18.451
00690>      TOTAL RAINFALL   (mm)=   79.804
00691>      RUNOFF COEFFICIENT   =     .231
00692>
00693>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00694>
00695> ---------------------------------------------------------------------------------------------------
00696> R0001:C00029---------------------------------------------------------------------------------------
00697> *#-------------------|---------------------Area 102 (East)----------------------|
00698> --------------------
00699> | CALIB NASHYD           |   Area     (ha)=   34.100   Curve Number   (CN)= 58.40
00700> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00701> ------------------------   U.H. Tp(hrs)=    1.430
00702>
00703>      Unit Hyd Qpeak  (cms)=     .911
00704>
00705>      PEAK FLOW       (cms)=     .568 (i)
00706>      TIME TO PEAK    (hrs)=    3.250
00707>      DURATION        (hrs)=   14.000, (dddd|hh:mm:)=   0|14:00
00708>      AVERAGE FLOW    (cms)=     .135
00709>      RUNOFF VOLUME    (mm)=   19.987
00710>      TOTAL RAINFALL   (mm)=   79.804
00711>      RUNOFF COEFFICIENT   =     .250
00712>
00713>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00714>
00715> ---------------------------------------------------------------------------------------------------
00716> R0001:C00030---------------------------------------------------------------------------------------
00717> --------------------
00718> | SAVE HYD          |   AREA       (ha)=   16.900
00719> | ID=01:101         |   QPEAK     (cms)=     .327 (i)
00720> | DT= 5.00 PCYC=-1 |   TPEAK     (hrs)=    2.750
00721> --------------------   VOLUME      (mm)=   18.451
00722>   Filename: 101.0001
00723>   Comments: preWest
00724>
00725>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00726> ---------------------------------------------------------------------------------------------------
00727> R0001:C00031---------------------------------------------------------------------------------------
00728> --------------------
00729> | SAVE HYD          |   AREA       (ha)=   34.100
00730> | ID=02:102         |   QPEAK     (cms)=     .568 (i)
00731> | DT= 5.00 PCYC=-1 |   TPEAK     (hrs)=    3.250
00732> --------------------   VOLUME      (mm)=   19.987
00733>   Filename: 102.0001
00734>   Comments: preEast
00735>
00736>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00737> ---------------------------------------------------------------------------------------------------
00738> R0001:C00032---------------------------------------------------------------------------------------
00739> --------------------
00740> | FINISH           |
00741> --------------------
00742> ---------------------------------------------------------------------------------------------------
00743> ***************************************************************************************************
00744>      WARNINGS / ERRORS / NOTES
00745>      -------------------------
00746>    Simulation ended on 2019-07-25     at 20:55:23
00747> ===================================================================================================
00748>
```

```
00001> 2     Metric units
00002> *#*************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date       : 01-17-2011
00005> *#  Updated    : 07-25-2019
00006> *#  Modeller   : [J.Proctor/R.Alexander]
00007> *#  Company    : C.F. Crozier & Associates Inc.
00008> *#  License #  :  3737016
00009> *#*************************************************************************
00010> *#  J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\ALL_SCS.dat
00011> *#*************************************************************************
00012> START              TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                  [  ] <--storm filename, one per line for NSTORM time
00014> *%-----------------|-------------------------------------------------------|
00015> *#*************************************************************************
00016> *#**********************PRE-DEVELOPMENT - 2 YEAR Event ********************
00017> *#*************************************************************************
00018> *
00019> *#   Rainfall Depths per MTO - Basins East of Collingwood
00020> *#                   SCS Rainfall Distribution
00021> *
00022> *#*************************************************************************
00023> *%-----------------|-------------------------------------------------------|
00024> MASS STORM          PTOTAL=[50.4](mm), CSDT=[5](min),
00025>                     CURVE_FILENAME=["SCS24HII.MST"]
00026> *%-----------------|-------------------------------------------------------|
00027> *#-----------------|----------------------Area 101 (West)------------------|
00028> *%-----------------|-------------------------------------------------------|
00029> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
00030>                     DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
00031>                     N=[3], TP=[1.04]hrs,
00032>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00033> *%-----------------|-------------------------------------------------------|
00034> *#-----------------|----------------------Area 102 (East)------------------|
00035> *%-----------------|-------------------------------------------------------|
00036> CALIB NASHYD        ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
00037>                     DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
00038>                     N=[3], TP=[1.43]hrs,
00039>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00040> *%-----------------|-------------------------------------------------------|
00041> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00042>                     HYD_COMMENT=["preWest"]
00043> *%-----------------|-------------------------------------------------------|
00044> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00045>                     HYD_COMMENT=["preEast"]
00046> *%-----------------|-------------------------------------------------------|
00047> *#*************************************************************************
00048> *#**********************PRE-DEVELOPMENT - 5 YEAR Event ********************
00049> *#*************************************************************************
00050> *
00051> *#   Rainfall Depths per MTO - Basins East of Collingwood
00052> *#                   SCS Rainfall Distribution
00053> *
00054> *#*************************************************************************
00055> *%-----------------|-------------------------------------------------------|
00056> MASS STORM          PTOTAL=[64.8](mm), CSDT=[5](min),
00057>                     CURVE_FILENAME=["SCS24HII.MST"]
00058> *%-----------------|-------------------------------------------------------|
00059> *#-----------------|----------------------Area 101 (West)------------------|
00060> *%-----------------|-------------------------------------------------------|
00061> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
00062>                     DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
00063>                     N=[3], TP=[1.04]hrs,
00064>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00065> *%-----------------|-------------------------------------------------------|
00066> *#-----------------|----------------------Area 102 (East)------------------|
00067> *%-----------------|-------------------------------------------------------|
00068> CALIB NASHYD        ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
00069>                     DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
00070>                     N=[3], TP=[1.43]hrs,
00071>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00072> *%-----------------|-------------------------------------------------------|
00073> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00074>                     HYD_COMMENT=["preWest"]
00075> *%-----------------|-------------------------------------------------------|
00076> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00077>                     HYD_COMMENT=["preEast"]
00078> *%-----------------|-------------------------------------------------------|
00079> *#*************************************************************************
00080> *#**********************PRE-DEVELOPMENT - 10 YEAR Event *******************
00081> *#*************************************************************************
00082> *
00083> *#   Rainfall Depths per MTO - Basins East of Collingwood
00084> *#                   SCS Rainfall Distribution
00085> *
00086> *#*************************************************************************
00087> *%-----------------|-------------------------------------------------------|
00088> MASS STORM          PTOTAL=[74.4](mm), CSDT=[5](min),
00089>                     CURVE_FILENAME=["SCS24HII.MST"]
00090> *%-----------------|-------------------------------------------------------|
00091> *#-----------------|----------------------Area 101 (West)------------------|
00092> *%-----------------|-------------------------------------------------------|
00093> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
00094>                     DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
00095>                     N=[3], TP=[1.04]hrs,
00096>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00097> *%-----------------|-------------------------------------------------------|
00098> *#-----------------|----------------------Area 102 (East)------------------|
00099> *%-----------------|-------------------------------------------------------|
00100> CALIB NASHYD        ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
00101>                     DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
00102>                     N=[3], TP=[1.43]hrs,
00103>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00104> *%-----------------|-------------------------------------------------------|
00105> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00106>                     HYD_COMMENT=["preWest"]
00107> *%-----------------|-------------------------------------------------------|
00108> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00109>                     HYD_COMMENT=["preEast"]
00110> *%-----------------|-------------------------------------------------------|
00111> *#*************************************************************************
00112> *#**********************PRE-DEVELOPMENT - 25 YEAR Event *******************
00113> *#*************************************************************************
00114> *
00115> *#   Rainfall Depths per MTO - Basins East of Collingwood
00116> *#                   SCS Rainfall Distribution
00117> *
00118> *#*************************************************************************
00119> *%-----------------|-------------------------------------------------------|
00120> MASS STORM          PTOTAL=[86.4](mm), CSDT=[5](min),
00121>                     CURVE_FILENAME=["SCS24HII.MST"]
00122> *%-----------------|-------------------------------------------------------|
00123> *#-----------------|----------------------Area 101 (West)------------------|
00124> *%-----------------|-------------------------------------------------------|
00125> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
00126>                     DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
00127>                     N=[3], TP=[1.04]hrs,
00128>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00129> *%-----------------|-------------------------------------------------------|
00130> *#-----------------|----------------------Area 102 (East)------------------|
00131> *%-----------------|-------------------------------------------------------|
00132> CALIB NASHYD        ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
00133>                     DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
00134>                     N=[3], TP=[1.43]hrs,
00135>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00136> *%-----------------|-------------------------------------------------------|
00137> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00138>                     HYD_COMMENT=["preWest"]
00139> *%-----------------|-------------------------------------------------------|
00140> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00141>                     HYD_COMMENT=["preEast"]
00142> *%-----------------|-------------------------------------------------------|
00143> *#*************************************************************************
00144> *#**********************PRE-DEVELOPMENT - 50 YEAR Event *******************
00145> *#*************************************************************************
00146> *
00147> *#   Rainfall Depths per MTO - Basins East of Collingwood
00148> *#                   SCS Rainfall Distribution
00149> *
00150> *#*************************************************************************
00151> *%-----------------|-------------------------------------------------------|
00152> MASS STORM          PTOTAL=[96.0](mm), CSDT=[5](min),
00153>                     CURVE_FILENAME=["SCS24HII.MST"]
00154> *%-----------------|-------------------------------------------------------|
00155> *#-----------------|----------------------Area 101 (West)------------------|
00156> *%-----------------|-------------------------------------------------------|
00157> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
00158>                     DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
00159>                     N=[3], TP=[1.04]hrs,
00160>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00161> *%-----------------|-------------------------------------------------------|
00162> *#-----------------|----------------------Area 102 (East)------------------|
00163> *%-----------------|-------------------------------------------------------|
00164> CALIB NASHYD        ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
00165>                     DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
00166>                     N=[3], TP=[1.43]hrs,
00167>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00168> *%-----------------|-------------------------------------------------------|
00169> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00170>                     HYD_COMMENT=["preWest"]
00171> *%-----------------|-------------------------------------------------------|
00172> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00173>                     HYD_COMMENT=["preEast"]
00174> *%-----------------|-------------------------------------------------------|
00175> *#*************************************************************************
00176> *#**********************PRE-DEVELOPMENT - 100 YEAR Event ******************
00177> *#*************************************************************************
00178> *
00179> *#   Rainfall Depths per MTO - Basins East of Collingwood
00180> *#                   SCS Rainfall Distribution
00181> *
00182> *#*************************************************************************
00183> *%-----------------|-------------------------------------------------------|
00184> MASS STORM          PTOTAL=[105.6](mm), CSDT=[5](min),
00185>                     CURVE_FILENAME=["SCS24HII.MST"]
00186> *%-----------------|-------------------------------------------------------|
00187> *#-----------------|----------------------Area 101 (West)------------------|
00188> *%-----------------|-------------------------------------------------------|
00189> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
00190>                     DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
00191>                     N=[3], TP=[1.04]hrs,
00192>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00193> *%-----------------|-------------------------------------------------------|
00194> *#-----------------|----------------------Area 102 (East)------------------|
00195> *%-----------------|-------------------------------------------------------|
00196> CALIB NASHYD        ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
00197>                     DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
00198>                     N=[3], TP=[1.43]hrs,
00199>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00200> *%-----------------|-------------------------------------------------------|
00201> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00202>                     HYD_COMMENT=["preWest"]
00203> *%-----------------|-------------------------------------------------------|
00204> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00205>                     HYD_COMMENT=["preEast"]
00206> *%-----------------|-------------------------------------------------------|
00207> FINISH
00208>
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 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222     000    11   77777 ========
 S       W W W   MM MM   H   H   Y Y     MM MM   O   O          2   0   0   11   7    7
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2   0   0   11       7  Ver4.05.0
     S   W W     M   M   H   H     Y     M   M   O   O        222   0   0   11      7   APR 2017
 SSSSS   W W     M   M   H   H     Y     M   M    OOO         2     0   0   11     7    ========
                                                              2     0   0   11    7     # 3737016
        StormWater Management HYdrologic Model                222     000    11    7    ========

 ********************************************************************************************
 ***************************************  SWMHYMO Ver4.05.0  ****************************************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************      based on the principles of HYMO and its successors      ******************
 ******************                    OTTHYMO-83 and OTTHYMO-89.                 ******************
 ********************************************************************************************
 ******************* Distributed by:  J.F. Sabourin and Associates Inc.          ******************
 ******************                   Ottawa,  Ontario: (613) 836-3884           ******************
 ******************                   Gatineau, Quebec: (819) 243-6858           ******************
 ******************                   E-Mail: swmhymo@jfsa.com                   ******************
 ********************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                Collingwood          SERIAL#:3737016     ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ******************************          ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
 ******************                  Maximum value for ID numbers  :     11            ******************
 ******************                  Max. number of rainfall points: 105408            ******************
 ******************                  Max. number of flow points    : 105408            ******************
 ********************************************************************************************

 ******************************   S U M M A R Y   O U T P U T   ******************************
 ********************************************************************************************
 *               RUN DATE: 2019-07-25     TIME: 20:47:59     RUN COUNTER: 000001               *
 ********************************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Pre\ALL_SCS.dat                                                          *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Pre\ALL_SCS.out                                                          *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Pre\ALL_SCS.sum                                                          *
 * User comments:                                                                             *
 * 1:_____________________________________________________________________________________*
 * 2:_____________________________________________________________________________________*
 * 3:_____________________________________________________________________________________*
 ********************************************************************************************


#*************************************************************************
#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
#  Date        : 01-17-2011
#  Updated     : 07-25-2019
#  Modeller    : [J.Proctor/R.Alexander]
#  Company     : C.F. Crozier & Associates Inc.
#  License #   :  3737016
#*************************************************************************
#  J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\ALL_SCS.dat
#*************************************************************************
 RUN#:COMMAND#
R0001:C00001-------------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on        0]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0001 ]
#*************************************************************************
#*********************PRE-DEVELOPMENT - 2 YEAR Event **********************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#                SCS Rainfall Distribution
#*************************************************************************
R0001:C00002-------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  50.40]
#----------------|--------------------Area 101 (West)-----------------------|
R0001:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 01:101          16.90     .091 No_date   13:18    7.45 .148     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#----------------|--------------------Area 102 (East)-----------------------|
R0001:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:102          34.10     .147 No_date   13:48    7.76 .154     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 01:101          16.90     .091 No_date   13:18    7.45  n/a     .000
       fname :101.0001
       remark:preWest
R0001:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 02:102          34.10     .147 No_date   13:48    7.76  n/a     .000
       fname :102.0001
       remark:preEast
#*************************************************************************
#*********************PRE-DEVELOPMENT - 5 YEAR Event **********************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#                SCS Rainfall Distribution
#*************************************************************************
R0001:C00007-------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  64.80]
#----------------|--------------------Area 101 (West)-----------------------|
R0001:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 01:101          16.90     .153 No_date   13:11   12.36 .191     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#----------------|--------------------Area 102 (East)-----------------------|
R0001:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:102          34.10     .257 No_date   13:41   13.22 .204     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 01:101          16.90     .153 No_date   13:11   12.36  n/a     .000
       fname :101.0001
       remark:preWest
R0001:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 02:102          34.10     .257 No_date   13:41   13.22  n/a     .000
       fname :102.0001
       remark:preEast
#*************************************************************************
#*********************PRE-DEVELOPMENT - 10 YEAR Event **********************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#                SCS Rainfall Distribution
#*************************************************************************
R0001:C00012-------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  74.40]
#----------------|--------------------Area 101 (West)-----------------------|
R0001:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 01:101          16.90     .201 No_date   13:11   16.15 .217     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#----------------|--------------------Area 102 (East)-----------------------|
R0001:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:102          34.10     .344 No_date   13:41   17.43 .234     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 01:101          16.90     .201 No_date   13:11   16.15  n/a     .000
       fname :101.0001
       remark:preWest
R0001:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 02:102          34.10     .344 No_date   13:41   17.43  n/a     .000
       fname :102.0001
       remark:preEast
#*************************************************************************
#*********************PRE-DEVELOPMENT - 25 YEAR Event **********************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
                SCS Rainfall Distribution
#*************************************************************************
R0001:C00017-------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  86.40]
#----------------|--------------------Area 101 (West)-----------------------|
R0001:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 01:101          16.90     .269 No_date   13:11   21.41 .248     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#----------------|--------------------Area 102 (East)-----------------------|
R0001:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:102          34.10     .465 No_date   13:41   23.27 .269     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 01:101          16.90     .269 No_date   13:11   21.41  n/a     .000
       fname :101.0001
       remark:preWest
R0001:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 02:102          34.10     .465 No_date   13:41   23.27  n/a     .000
       fname :102.0001
       remark:preEast
#*************************************************************************
#*********************PRE-DEVELOPMENT - 50 YEAR Event **********************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
                SCS Rainfall Distribution
#*************************************************************************
R0001:C00022-------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  96.00]
#----------------|--------------------Area 101 (West)-----------------------|
R0001:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 01:101          16.90     .328 No_date   13:11   25.98 .271     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#----------------|--------------------Area 102 (East)-----------------------|
R0001:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:102          34.10     .570 No_date   13:41   28.33 .295     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 01:101          16.90     .328 No_date   13:11   25.98  n/a     .000
       fname :101.0001
       remark:preWest
R0001:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 02:102          34.10     .570 No_date   13:41   28.33  n/a     .000
       fname :102.0001
       remark:preEast
#*************************************************************************
#*********************PRE-DEVELOPMENT - 100 YEAR Event **********************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
                SCS Rainfall Distribution
#*************************************************************************
R0001:C00027-------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT= 105.60]
#----------------|--------------------Area 101 (West)-----------------------|
R0001:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 01:101          16.90     .392 No_date   13:11   30.86 .292     .000
       [CN= 53.2: N= 3.00: Tp= 1.04]
#----------------|--------------------Area 102 (East)-----------------------|
R0001:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:102          34.10     .682 No_date   13:41   33.71 .319     .000
       [CN= 58.4: N= 3.00: Tp= 1.43]
R0001:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 01:101          16.90     .392 No_date   13:11   30.86  n/a     .000
       fname :101.0001
       remark:preWest
R0001:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              6.0 02:102          34.10     .682 No_date   13:41   33.71  n/a     .000
       fname :102.0001
       remark:preEast
R0001:C00032-------------------------------------------------------------------------------------
     FINISH
 ********************************************************************************************
   WARNINGS / ERRORS / NOTES
   -------------------------
  Simulation ended on 2019-07-25     at 20:47:59
 ============================================================================================

```

```
 ================================================================================
 SSSSS   W   W   M   M   H   H   Y   Y   M   M     OOO          222     000    11   77777 ========
 S       W   W   MM MM   H   H   Y Y     MM MM    O   O          2     0   0   11     7    7
 SSSSS   W W W   M M M   HHHHH     Y     M M M    O   O          2     0   0   11       7  Ver4.05.0
     S   W W W   M   M   H   H     Y     M   M    O   O        222     0   0   11       7  APR 2017
 SSSSS    W W    M   M   H   H     Y     M   M     OOO         2       0   0   11     7    ========
                                                               2       0   0   11     7    # 3737016
       StormWater Management HYdrologic Model                  222     000    11     7    ========

 ************************************************************************************
 ************************************  SWMHYMO Ver4.05.0  ***************************
 ******************  A single event and continuous hydrologic simulation model  *******
 ******************     based on the principles of HYMO and its successors      *******
 ******************                OTTHYMO-83 and OTTHYMO-89.                   *******
 ************************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *******
 ******************                  Ottawa,  Ontario: (613) 836-3884           *******
 ******************                  Gatineau, Quebec: (819) 243-6858           *******
 ******************                  E-Mail: swmhymo@jfsa.com                   *******
 ************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ************************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++       *******
 ******************           Maximum value for ID numbers  :    11       *******
 ******************           Max. number of rainfall points: 105408      *******
 ******************           Max. number of flow points    : 105408      *******
 ************************************************************************************

 ************************************************************************************
 ************************************  SWMHYMO Ver4.05.0  ***************************
 ******************  A single event and continuous hydrologic simulation model  *******
 ******************     based on the principles of HYMO and its successors      *******
 ******************                OTTHYMO-83 and OTTHYMO-89.                   *******
 ************************************************************************************
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 ******************                  Ottawa,  Ontario: (613) 836-3884           *******
 ******************                  Gatineau, Quebec: (819) 243-6858           *******
 ******************                  E-Mail: swmhymo@jfsa.com                   *******
 ************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ************************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++       *******
 ******************           Maximum value for ID numbers  :    11       *******
 ******************           Max. number of rainfall points: 105408      *******
 ******************           Max. number of flow points    : 105408      *******
 ************************************************************************************



 *****************************  D E T A I L E D   O U T P U T  *****************************
 ************************************************************************************
 *                  RUN DATE: 2019-07-25       TIME: 20:47:59      RUN COUNTER: 1000    *
 ************************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\Pre\ALL_SCS.dat                                                   *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\Pre\ALL_SCS.out                                                   *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\Pre\ALL_SCS.sum                                                   *
 * User comments:                                                                       *
 * 1:_____________________________________________________________________________*
 * 2:_____________________________________________________________________________*
 * 3:_____________________________________________________________________________*
 ************************************************************************************

 --------------------------------------------------------------------------------------------------------------
 R0001:C00001-----------------------------------------------------------------------------------------------------
 *#*************************************************************************
 *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
 *#  Date        : 01-17-2011
 *#  Updated     : 07-25-2019
 *#  Modeller    : [J.Proctor/R.Alexander]
 *#  Company     : C.F. Crozier & Associates Inc.
 *#  License #   :  3737016
 *#*************************************************************************
 *#  J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\ALL_SCS.dat
 *#*************************************************************************
 ---------------------
 | START             | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
 ------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
     TZERO =   .00 hrs on       0
     METOUT=   2 (output = METRIC)
     NRUN  = 0001
     NSTORM=   0
 --------------------------------------------------------------------------------------------------------------
 R0001:C00002-----------------------------------------------------------------------------------------------------
 *#*************************************************************************
 *#**********************PRE-DEVELOPMENT - 2 YEAR Event **********************
 *#*************************************************************************
 *
 *#   Rainfall Depths per MTO - Basins East of Collingwood
 *#                  SCS Rainfall Distribution
 *
 *#*************************************************************************
 ---------------------
 | MASS STORM        |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
 | Ptotal= 50.40 mm  |    Comments: 24 hour SCS II storm mass curve
 ---------------------

                          Duration of storm        =   24.00 hrs
                          Mass curve time step     =   12.00 min
                          Selected storm time step =    6.00 min
                          Volume of derived storm  =   50.40 mm

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:06    .000|   4:06    .504|   8:06   1.008|  12:06  56.700|  16:06   1.260|  20:06   1.008
      0:12    .000|   4:12    .504|   8:12   1.008|  12:12  56.700|  16:12   1.260|  20:12   1.008
      0:18    .504|   4:18   1.008|   8:18   1.512|  12:18  10.080|  16:18   1.260|  20:18    .756
      0:24    .504|   4:24   1.008|   8:24   1.512|  12:24  10.080|  16:24   1.260|  20:24    .756
      0:30    .504|   4:30   1.008|   8:30   1.512|  12:30   6.300|  16:30   1.260|  20:30    .756
      0:36    .504|   4:36   1.008|   8:36   1.512|  12:36   6.300|  16:36   1.260|  20:36    .756
      0:42    .504|   4:42   1.008|   8:42   1.512|  12:42   4.536|  16:42   1.260|  20:42    .504
      0:48    .504|   4:48   1.008|   8:48   1.512|  12:48   4.536|  16:48   1.260|  20:48    .504
      0:54    .504|   4:54   1.008|   8:54   1.512|  12:54   4.284|  16:54   1.260|  20:54    .756
      1:00    .504|   5:00   1.008|   9:00   1.512|  13:00   4.284|  17:00   1.260|  21:00    .756
      1:06    .504|   5:06   1.008|   9:06   1.512|  13:06   3.024|  17:06    .756|  21:06    .756
      1:12    .504|   5:12   1.008|   9:12   1.512|  13:12   3.024|  17:12    .756|  21:12    .756
      1:18    .504|   5:18   1.008|   9:18   1.512|  13:18   2.520|  17:18    .756|  21:18    .504
      1:24    .504|   5:24   1.008|   9:24   1.512|  13:24   2.520|  17:24    .756|  21:24    .504
      1:30    .504|   5:30   1.008|   9:30   1.512|  13:30   2.520|  17:30   1.008|  21:30    .756
      1:36    .504|   5:36   1.008|   9:36   1.512|  13:36   2.520|  17:36   1.008|  21:36    .756
      1:42    .504|   5:42   1.008|   9:42   1.512|  13:42   2.520|  17:42    .756|  21:42    .504
      1:48    .504|   5:48   1.008|   9:48   1.512|  13:48   2.520|  17:48    .756|  21:48    .504
      1:54    .504|   5:54   1.008|   9:54   1.512|  13:54   2.520|  17:54   1.008|  21:54    .756
      2:00    .504|   6:00   1.008|  10:00   1.512|  14:00   2.520|  18:00   1.008|  22:00    .756
      2:06    .504|   6:06   1.008|  10:06   1.512|  14:06   2.520|  18:06    .756|  22:06    .504
      2:12    .504|   6:12   1.008|  10:12   1.512|  14:12   2.520|  18:12    .756|  22:12    .504
      2:18    .504|   6:18   1.008|  10:18   2.772|  14:18   1.512|  18:18    .756|  22:18    .504
      2:24    .504|   6:24   1.008|  10:24   2.772|  14:24   1.512|  18:24    .756|  22:24    .504
      2:30    .504|   6:30   1.008|  10:30   2.772|  14:30   1.512|  18:30    .756|  22:30    .756
      2:36    .504|   6:36   1.008|  10:36   2.772|  14:36   1.512|  18:36    .756|  22:36    .756
      2:42    .504|   6:42   1.008|  10:42   2.772|  14:42   1.512|  18:42   1.008|  22:42    .504
      2:48    .504|   6:48   1.008|  10:48   2.772|  14:48   1.512|  18:48   1.008|  22:48    .504
      2:54    .504|   6:54   1.008|  10:54   2.772|  14:54   1.512|  18:54    .756|  22:54    .756
      3:00    .504|   7:00   1.008|  11:00   2.772|  15:00   1.512|  19:00    .756|  23:00    .756
      3:06    .504|   7:06   1.008|  11:06   2.772|  15:06   1.512|  19:06    .756|  23:06    .504
      3:12    .504|   7:12   1.008|  11:12   2.772|  15:12   1.512|  19:12    .756|  23:12    .504
      3:18    .504|   7:18   1.008|  11:18   3.780|  15:18   1.260|  19:18   1.008|  23:18    .504
      3:24    .504|   7:24   1.008|  11:24   3.780|  15:24   1.260|  19:24   1.008|  23:24    .504
      3:30    .504|   7:30   1.008|  11:30   5.544|  15:30   1.260|  19:30    .756|  23:30    .504
      3:36    .504|   7:36   1.008|  11:36   5.544|  15:36   1.260|  19:36    .756|  23:36    .504
      3:42    .504|   7:42   1.008|  11:42  13.356|  15:42   1.260|  19:42   1.008|  23:42    .756
      3:48    .504|   7:48   1.008|  11:48  13.356|  15:48   1.260|  19:48   1.008|  23:48    .756
      3:54    .504|   7:54   1.008|  11:54  27.720|  15:54   1.260|  19:54    .756|  23:54   1.008
      4:00    .504|   8:00   1.008|  12:00  27.720|  16:00   1.260|  20:00    .756|  24:00   1.008

 --------------------------------------------------------------------------------------------------------------
 R0001:C00003-----------------------------------------------------------------------------------------------------
 *#------------------|--------------------Area 101 (West)----------------------|
 ------------------------
 | CALIB NASHYD          |   Area     (ha)=   16.900   Curve Number   (CN)= 53.20
 | 01:101       DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=    1.040

     Unit Hyd Qpeak  (cms)=      .621

     PEAK FLOW       (cms)=      .091 (i)
     TIME TO PEAK    (hrs)=   13.300
     DURATION        (hrs)=   31.300, (dddd|hh:mm:)=   1|07:18
     AVERAGE FLOW    (cms)=      .011
     RUNOFF VOLUME    (mm)=    7.449
     TOTAL RAINFALL   (mm)=   50.400
     RUNOFF COEFFICIENT   =     .148

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

 --------------------------------------------------------------------------------------------------------------
 R0001:C00004-----------------------------------------------------------------------------------------------------
 *#------------------|--------------------Area 102 (East)---------------------|
 ------------------------
 | CALIB NASHYD          |   Area     (ha)=   34.100   Curve Number   (CN)= 58.40
 | 02:102       DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=    1.430

     Unit Hyd Qpeak  (cms)=      .911

     PEAK FLOW       (cms)=      .147 (i)
     TIME TO PEAK    (hrs)=   13.800
     DURATION        (hrs)=   34.000, (dddd|hh:mm:)=   1|10:00
     AVERAGE FLOW    (cms)=      .022
     RUNOFF VOLUME    (mm)=    7.760
     TOTAL RAINFALL   (mm)=   50.400
     RUNOFF COEFFICIENT   =     .154

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

 --------------------------------------------------------------------------------------------------------------
 R0001:C00005-----------------------------------------------------------------------------------------------------
 ---------------------
 | SAVE HYD          |   AREA       (ha)=   16.900
 | ID=01:101         |   QPEAK      (cms)=     .091 (i)
 | DT= 6.00 PCYC=-1  |   TPEAK      (hrs)=   13.300
 ---------------------   VOLUME       (mm)=    7.449
   Filename: 101.0001
   Comments: preWest

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

 --------------------------------------------------------------------------------------------------------------
 R0001:C00006-----------------------------------------------------------------------------------------------------
 ---------------------
 | SAVE HYD          |   AREA       (ha)=   34.100
 | ID=02:102         |   QPEAK      (cms)=     .147 (i)
 | DT= 6.00 PCYC=-1  |   TPEAK      (hrs)=   13.800
 ---------------------   VOLUME       (mm)=    7.760
   Filename: 102.0001
   Comments: preEast

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

 --------------------------------------------------------------------------------------------------------------
 R0001:C00007-----------------------------------------------------------------------------------------------------
 *#*************************************************************************
 *#**********************PRE-DEVELOPMENT - 5 YEAR Event **********************
 *#*************************************************************************
 *
 *#   Rainfall Depths per MTO - Basins East of Collingwood
 *#                  SCS Rainfall Distribution
 *
 *#*************************************************************************
 ---------------------
 | MASS STORM        |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
 | Ptotal= 64.80 mm  |    Comments: 24 hour SCS II storm mass curve
 ---------------------

                          Duration of storm        =   24.00 hrs
                          Mass curve time step     =   12.00 min
                          Selected storm time step =    6.00 min
                          Volume of derived storm  =   64.80 mm

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:06    .000|   4:06    .648|   8:06   1.296|  12:06  72.900|  16:06   1.620|  20:06   1.296
      0:12    .000|   4:12    .648|   8:12   1.296|  12:12  72.900|  16:12   1.620|  20:12   1.296
      0:18    .648|   4:18   1.296|   8:18   1.944|  12:18  12.960|  16:18   1.620|  20:18    .972
      0:24    .648|   4:24   1.296|   8:24   1.944|  12:24  12.960|  16:24   1.620|  20:24    .972
      0:30    .648|   4:30   1.296|   8:30   1.944|  12:30   8.100|  16:30   1.620|  20:30    .972
      0:36    .648|   4:36   1.296|   8:36   1.944|  12:36   8.100|  16:36   1.620|  20:36    .972
      0:42    .648|   4:42   1.296|   8:42   1.944|  12:42   5.832|  16:42   1.620|  20:42    .648
      0:48    .648|   4:48   1.296|   8:48   1.944|  12:48   5.832|  16:48   1.620|  20:48    .648
      0:54    .648|   4:54   1.296|   8:54   1.944|  12:54   5.508|  16:54   1.620|  20:54    .972
      1:00    .648|   5:00   1.296|   9:00   1.944|  13:00   5.508|  17:00   1.620|  21:00    .972
      1:06    .648|   5:06   1.296|   9:06   1.944|  13:06   3.888|  17:06    .972|  21:06    .972
      1:12    .648|   5:12   1.296|   9:12   1.944|  13:12   3.888|  17:12    .972|  21:12    .972
      1:18    .648|   5:18   1.296|   9:18   1.944|  13:18   3.240|  17:18    .972|  21:18    .648
      1:24    .648|   5:24   1.296|   9:24   1.944|  13:24   3.240|  17:24    .972|  21:24    .648
      1:30    .648|   5:30   1.296|   9:30   1.944|  13:30   3.240|  17:30   1.296|  21:30    .972
      1:36    .648|   5:36   1.296|   9:36   1.944|  13:36   3.240|  17:36   1.296|  21:36    .972
      1:42    .648|   5:42   1.296|   9:42   1.944|  13:42   3.240|  17:42    .972|  21:42    .648
      1:48    .648|   5:48   1.296|   9:48   1.944|  13:48   3.240|  17:48    .972|  21:48    .648
      1:54    .648|   5:54   1.296|   9:54   1.944|  13:54   3.240|  17:54   1.296|  21:54    .972
      2:00    .648|   6:00   1.296|  10:00   1.944|  14:00   3.240|  18:00   1.296|  22:00    .972
      2:06    .648|   6:06   1.296|  10:06   1.944|  14:06   3.240|  18:06    .972|  22:06    .648
      2:12    .648|   6:12   1.296|  10:12   1.944|  14:12   3.240|  18:12    .972|  22:12    .648
      2:18    .648|   6:18   1.296|  10:18   3.564|  14:18   1.944|  18:18    .972|  22:18    .648
      2:24    .648|   6:24   1.296|  10:24   3.564|  14:24   1.944|  18:24    .972|  22:24    .648
      2:30    .648|   6:30   1.296|  10:30   3.564|  14:30   1.944|  18:30    .972|  22:30    .972
      2:36    .648|   6:36   1.296|  10:36   3.564|  14:36   1.944|  18:36    .972|  22:36    .972
      2:42    .648|   6:42   1.296|  10:42   3.564|  14:42   1.944|  18:42   1.296|  22:42    .648
      2:48    .648|   6:48   1.296|  10:48   3.564|  14:48   1.944|  18:48   1.296|  22:48    .648
      2:54    .648|   6:54   1.296|  10:54   3.564|  14:54   1.944|  18:54    .972|  22:54    .972
      3:00    .648|   7:00   1.296|  11:00   3.564|  15:00   1.944|  19:00    .972|  23:00    .972
      3:06    .648|   7:06   1.296|  11:06   3.564|  15:06   1.944|  19:06    .972|  23:06    .648
      3:12    .648|   7:12   1.296|  11:12   3.564|  15:12   1.944|  19:12    .972|  23:12    .648
      3:18    .648|   7:18   1.296|  11:18   4.860|  15:18   1.620|  19:18   1.296|  23:18    .648
      3:24    .648|   7:24   1.296|  11:24   4.860|  15:24   1.620|  19:24   1.296|  23:24    .648
      3:30    .648|   7:30   1.296|  11:30   7.128|  15:30   1.620|  19:30    .972|  23:30    .648
      3:36    .648|   7:36   1.296|  11:36   7.128|  15:36   1.620|  19:36    .972|  23:36    .648
      3:42    .648|   7:42   1.296|  11:42  17.172|  15:42   1.620|  19:42   1.296|  23:42    .972
      3:48    .648|   7:48   1.296|  11:48  17.172|  15:48   1.620|  19:48   1.296|  23:48    .972
      3:54    .648|   7:54   1.296|  11:54  35.640|  15:54   1.620|  19:54    .972|  23:54   1.296
      4:00    .648|   8:00   1.296|  12:00  35.640|  16:00   1.620|  20:00    .972|  24:00   1.296

 --------------------------------------------------------------------------------------------------------------
 R0001:C00008-----------------------------------------------------------------------------------------------------
 *#------------------|--------------------Area 101 (West)----------------------|
 ------------------------
 | CALIB NASHYD          |   Area     (ha)=   16.900   Curve Number   (CN)= 53.20
 | 01:101       DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=    1.040

     Unit Hyd Qpeak  (cms)=      .621

     PEAK FLOW       (cms)=      .153 (i)
     TIME TO PEAK    (hrs)=   13.200
     DURATION        (hrs)=   31.300, (dddd|hh:mm:)=   1|07:18
     AVERAGE FLOW    (cms)=      .019
     RUNOFF VOLUME    (mm)=   12.358
     TOTAL RAINFALL   (mm)=   64.800
     RUNOFF COEFFICIENT   =     .191

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

 --------------------------------------------------------------------------------------------------------------
 R0001:C00009-----------------------------------------------------------------------------------------------------
 *#------------------|--------------------Area 102 (East)---------------------|
 ------------------------
 | CALIB NASHYD          |   Area     (ha)=   34.100   Curve Number   (CN)= 58.40
 | 02:102       DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=    1.430
```

```
      Unit Hyd Qpeak  (cms)=     .911

      PEAK FLOW       (cms)=     .257 (i)
      TIME TO PEAK    (hrs)=   13.700
      DURATION        (hrs)=   34.000, (dddd|hh:mm:)=   1|10:00
      AVERAGE FLOW    (cms)=     .037
      RUNOFF VOLUME    (mm)=   13.215
      TOTAL RAINFALL   (mm)=   64.800
      RUNOFF COEFFICIENT   =     .204

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

R0001:C00010----------------------------------------------------------------------------------------------------
 | SAVE HYD         |   AREA       (ha)=   16.900
 | ID=01:101        |   QPEAK      (cms)=     .153 (i)
 | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.200
 --------------------   VOLUME        (mm)=   12.358
  Filename: 101.0001
  Comments: preWest

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

R0001:C00011----------------------------------------------------------------------------------------------------
 | SAVE HYD         |   AREA       (ha)=   34.100
 | ID=02:102        |   QPEAK      (cms)=     .257 (i)
 | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.700
 --------------------   VOLUME        (mm)=   13.215
  Filename: 102.0001
  Comments: preEast

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

R0001:C00012----------------------------------------------------------------------------------------------------
*#*********************************************************************
*#*********************PRE-DEVELOPMENT - 10 YEAR Event *********************
*#*********************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                    SCS Rainfall Distribution
*
*#*********************************************************************
 --------------------
 | MASS STORM       |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
 | Ptotal= 74.40 mm |    Comments: 24 hour SCS II storm mass curve
 --------------------
                          Duration of storm        =   24.00 hrs
                          Mass curve time step     =   12.00 min
                          Selected storm time step =    6.00 min
                          Volume of derived storm  =   74.40 mm

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
     hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr
      0:06    .000|  4:06    .744|  8:06   1.488|  12:06  83.700|  16:06   1.860|  20:06   1.488
      0:12    .000|  4:12    .744|  8:12   1.488|  12:12  83.700|  16:12   1.860|  20:12   1.488
      0:18    .744|  4:18   1.488|  8:18   2.232|  12:18  14.880|  16:18   1.860|  20:18   1.116
      0:24    .744|  4:24   1.488|  8:24   2.232|  12:24  14.880|  16:24   1.860|  20:24   1.116
      0:30    .744|  4:30   1.488|  8:30   2.232|  12:30   9.300|  16:30   1.860|  20:30   1.116
      0:36    .744|  4:36   1.488|  8:36   2.232|  12:36   9.300|  16:36   1.860|  20:36   1.116
      0:42    .744|  4:42   1.488|  8:42   2.232|  12:42   6.696|  16:42   1.860|  20:42    .744
      0:48    .744|  4:48   1.488|  8:48   2.232|  12:48   6.696|  16:48   1.860|  20:48    .744
      0:54    .744|  4:54   1.488|  8:54   2.232|  12:54   6.324|  16:54   1.860|  20:54   1.116
      1:00    .744|  5:00   1.488|  9:00   2.232|  13:00   6.324|  17:00   1.860|  21:00   1.116
      1:06    .744|  5:06   1.488|  9:06   2.232|  13:06   4.464|  17:06   1.116|  21:06   1.116
      1:12    .744|  5:12   1.488|  9:12   2.232|  13:12   4.464|  17:12   1.116|  21:12   1.116
      1:18    .744|  5:18   1.488|  9:18   2.232|  13:18   3.720|  17:18   1.116|  21:18    .744
      1:24    .744|  5:24   1.488|  9:24   2.232|  13:24   3.720|  17:24   1.116|  21:24    .744
      1:30    .744|  5:30   1.488|  9:30   2.232|  13:30   3.720|  17:30   1.488|  21:30   1.116
      1:36    .744|  5:36   1.488|  9:36   2.232|  13:36   3.720|  17:36   1.488|  21:36   1.116
      1:42    .744|  5:42   1.488|  9:42   2.232|  13:42   3.720|  17:42   1.116|  21:42    .744
      1:48    .744|  5:48   1.488|  9:48   2.232|  13:48   3.720|  17:48   1.488|  21:48    .744
      1:54    .744|  5:54   1.488|  9:54   2.232|  13:54   3.720|  18:00   1.488|  22:00   1.116
      2:00    .744|  6:00   1.488| 10:00   2.232|  14:00   3.720|  18:06   1.116|  22:06    .744
      2:06    .744|  6:12   1.488| 10:12   2.232|  14:12   3.720|  18:12   1.116|  22:12    .744
      2:12    .744|  6:18   1.488| 10:18   4.092|  14:18   2.232|  18:18   1.116|  22:18    .744
      2:18    .744|  6:24   1.488| 10:24   4.092|  14:24   2.232|  18:24   1.116|  22:24    .744
      2:24    .744|  6:30   1.488| 10:30   4.092|  14:30   2.232|  18:30   1.116|  22:30   1.116
      2:30    .744|  6:36   1.488| 10:36   4.092|  14:36   2.232|  18:36   1.116|  22:36   1.116
      2:36    .744|  6:42   1.488| 10:42   4.092|  14:42   2.232|  18:42   1.488|  22:42    .744
      2:42    .744|  6:48   1.488| 10:48   4.092|  14:48   2.232|  18:48   1.488|  22:48    .744
      2:48    .744|  6:54   1.488| 10:54   4.092|  14:54   2.232|  18:54   1.116|  22:54   1.116
      2:54    .744|  7:00   1.488| 11:00   4.092|  15:00   2.232|  19:00   1.116|  23:00   1.116
      3:00    .744|  7:06   1.488| 11:06   4.092|  15:06   2.232|  19:06   1.116|  23:06    .744
      3:06    .744|  7:12   1.488| 11:12   4.092|  15:12   2.232|  19:12   1.116|  23:12    .744
      3:12    .744|  7:18   1.488| 11:18   5.580|  15:18   1.860|  19:18   1.488|  23:18    .744
      3:18    .744|  7:24   1.488| 11:24   5.580|  15:24   1.860|  19:24   1.488|  23:24    .744
      3:24    .744|  7:30   1.488| 11:30   8.184|  15:30   1.860|  19:30   1.116|  23:30    .744
      3:30    .744|  7:36   1.488| 11:36   8.184|  15:36   1.860|  19:36   1.116|  23:36    .744
      3:36    .744|  7:42   1.488| 11:42  19.716|  15:42   1.860|  19:42   1.488|  23:42   1.116
      3:42    .744|  7:48   1.488| 11:48  19.716|  15:48   1.860|  19:48   1.488|  23:48   1.116
      3:48    .744|  7:54   1.488| 11:54  40.920|  15:54   1.860|  19:54   1.116|  23:54   1.488
      3:54    .744|  8:00   1.488| 12:00  40.920|  16:00   1.860|  20:00   1.116|  24:00   1.488
      4:00    .744|

R0001:C00013----------------------------------------------------------------------------------------------------
*#-----------------|--------------------Area 101 (West)---------------------|
 ------------------------
 | CALIB NASHYD           |   Area     (ha)=   16.900   Curve Number   (CN)= 53.20
 | 01:101       DT= 5.00  |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=    1.040

      Unit Hyd Qpeak  (cms)=     .621

      PEAK FLOW       (cms)=     .201 (i)
      TIME TO PEAK    (hrs)=   13.200
      DURATION        (hrs)=   31.300, (dddd|hh:mm:)=   1|07:18
      AVERAGE FLOW    (cms)=     .024
      RUNOFF VOLUME    (mm)=   16.151
      TOTAL RAINFALL   (mm)=   74.400
      RUNOFF COEFFICIENT   =     .217

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

R0001:C00014----------------------------------------------------------------------------------------------------
*#-----------------|--------------------Area 102 (East)---------------------|
 ------------------------
 | CALIB NASHYD           |   Area     (ha)=   34.100   Curve Number   (CN)= 58.40
 | 02:102       DT= 5.00  |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=    1.430

      Unit Hyd Qpeak  (cms)=     .911

      PEAK FLOW       (cms)=     .344 (i)
      TIME TO PEAK    (hrs)=   13.700
      DURATION        (hrs)=   34.000, (dddd|hh:mm:)=   1|10:00
      AVERAGE FLOW    (cms)=     .049
      RUNOFF VOLUME    (mm)=   17.433
      TOTAL RAINFALL   (mm)=   74.400
      RUNOFF COEFFICIENT   =     .234

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

R0001:C00015----------------------------------------------------------------------------------------------------
 --------------------
 | SAVE HYD         |   AREA       (ha)=   16.900
 | ID=01:101        |   QPEAK      (cms)=     .201 (i)
 | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.200
 --------------------   VOLUME        (mm)=   16.151
  Filename: 101.0001
  Comments: preWest

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

R0001:C00016----------------------------------------------------------------------------------------------------
 --------------------
 | SAVE HYD         |   AREA       (ha)=   34.100
 | ID=02:102        |   QPEAK      (cms)=     .344 (i)
 | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.700
 --------------------   VOLUME        (mm)=   17.433
  Filename: 102.0001
  Comments: preEast

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

R0001:C00017----------------------------------------------------------------------------------------------------
*#*********************************************************************
*#*********************PRE-DEVELOPMENT - 25 YEAR Event *********************
*#*********************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                    SCS Rainfall Distribution
*
*#*********************************************************************
 --------------------
 | MASS STORM       |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
 | Ptotal= 86.40 mm |    Comments: 24 hour SCS II storm mass curve
 --------------------
                          Duration of storm        =   24.00 hrs
                          Mass curve time step     =   12.00 min
                          Selected storm time step =    6.00 min
                          Volume of derived storm  =   86.40 mm

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
     hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr
      0:06    .000|  4:06    .864|  8:06   1.728|  12:06  97.200|  16:06   2.160|  20:06   1.728
      0:12    .000|  4:12    .864|  8:12   1.728|  12:12  97.200|  16:12   2.160|  20:12   1.728
      0:18    .864|  4:18   1.728|  8:18   2.592|  12:18  17.280|  16:18   2.160|  20:18   1.296
      0:24    .864|  4:24   1.728|  8:24   2.592|  12:24  17.280|  16:24   2.160|  20:24   1.296
      0:30    .864|  4:30   1.728|  8:30   2.592|  12:30  10.800|  16:30   2.160|  20:30   1.296
      0:36    .864|  4:36   1.728|  8:36   2.592|  12:36  10.800|  16:36   2.160|  20:36   1.296
      0:42    .864|  4:42   1.728|  8:42   2.592|  12:42   7.776|  16:42   2.160|  20:42    .864
      0:48    .864|  4:48   1.728|  8:48   2.592|  12:48   7.776|  16:48   2.160|  20:48    .864
      0:54    .864|  4:54   1.728|  8:54   2.592|  12:54   7.344|  16:54   2.160|  20:54   1.296
      1:00    .864|  5:00   1.728|  9:00   2.592|  13:00   7.344|  17:00   2.160|  21:00   1.296
      1:06    .864|  5:06   1.728|  9:06   2.592|  13:06   5.184|  17:06   1.296|  21:06   1.296
      1:12    .864|  5:12   1.728|  9:12   2.592|  13:12   5.184|  17:12   1.296|  21:12   1.296
      1:18    .864|  5:18   1.728|  9:18   2.592|  13:18   4.320|  17:18   1.296|  21:18    .864
      1:24    .864|  5:24   1.728|  9:24   2.592|  13:24   4.320|  17:24   1.296|  21:24    .864
      1:30    .864|  5:30   1.728|  9:30   2.592|  13:30   4.320|  17:30   1.728|  21:30   1.296
      1:36    .864|  5:36   1.728|  9:36   2.592|  13:36   4.320|  17:36   1.728|  21:36   1.296
      1:42    .864|  5:42   1.728|  9:42   2.592|  13:42   4.320|  17:42   1.296|  21:42    .864
      1:48    .864|  5:48   1.728|  9:48   2.592|  13:48   4.320|  17:48   1.296|  21:48    .864
      1:54    .864|  5:54   1.728|  9:54   2.592|  13:54   4.320|  17:54   1.728|  21:54   1.296
      2:00    .864|  6:00   1.728| 10:00   2.592|  14:00   4.320|  18:00   1.728|  22:00   1.296
      2:06    .864|  6:06   1.728| 10:06   2.592|  14:06   4.320|  18:06   1.296|  22:06    .864
      2:12    .864|  6:12   1.728| 10:12   2.592|  14:12   4.320|  18:12   1.296|  22:12    .864
      2:18    .864|  6:18   1.728| 10:18   4.752|  14:18   2.592|  18:18   1.296|  22:18    .864
      2:24    .864|  6:24   1.728| 10:24   4.752|  14:24   2.592|  18:24   1.296|  22:24    .864
      2:30    .864|  6:30   1.728| 10:30   4.752|  14:30   2.592|  18:30   1.296|  22:30   1.296
      2:36    .864|  6:36   1.728| 10:36   4.752|  14:36   2.592|  18:36   1.296|  22:36   1.296
      2:42    .864|  6:42   1.728| 10:42   4.752|  14:42   2.592|  18:42   1.728|  22:42    .864
      2:48    .864|  6:48   1.728| 10:48   4.752|  14:48   2.592|  18:48   1.728|  22:48    .864
      2:54    .864|  6:54   1.728| 10:54   4.752|  14:54   2.592|  18:54   1.296|  22:54   1.296
      3:00    .864|  7:00   1.728| 11:00   4.752|  15:00   2.592|  19:00   1.296|  23:00   1.296
      3:06    .864|  7:06   1.728| 11:06   4.752|  15:06   2.592|  19:06   1.296|  23:06    .864
      3:12    .864|  7:12   1.728| 11:12   4.752|  15:12   2.592|  19:12   1.296|  23:12    .864
      3:18    .864|  7:18   1.728| 11:18   6.480|  15:18   2.160|  19:18   1.728|  23:18    .864
      3:24    .864|  7:24   1.728| 11:24   6.480|  15:24   2.160|  19:24   1.728|  23:24    .864
      3:30    .864|  7:30   1.728| 11:30   9.504|  15:30   2.160|  19:30   1.296|  23:30    .864
      3:36    .864|  7:36   1.728| 11:36   9.504|  15:36   2.160|  19:36   1.296|  23:36    .864
      3:42    .864|  7:42   1.728| 11:42  22.896|  15:42   2.160|  19:42   1.728|  23:42   1.296
      3:48    .864|  7:48   1.728| 11:48  22.896|  15:48   2.160|  19:48   1.728|  23:48   1.296
      3:54    .864|  7:54   1.728| 11:54  47.520|  15:54   2.160|  19:54   1.296|  23:54   1.728
      4:00    .864|  8:00   1.728| 12:00  47.520|  16:00   2.160|  20:00   1.296|  24:00   1.728

R0001:C00018----------------------------------------------------------------------------------------------------
*#-----------------|--------------------Area 101 (West)---------------------|
 ------------------------
 | CALIB NASHYD           |   Area     (ha)=   16.900   Curve Number   (CN)= 53.20
 | 01:101       DT= 5.00  |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=    1.040

      Unit Hyd Qpeak  (cms)=     .621

      PEAK FLOW       (cms)=     .269 (i)
      TIME TO PEAK    (hrs)=   13.200
      DURATION        (hrs)=   31.300, (dddd|hh:mm:)=   1|07:18
      AVERAGE FLOW    (cms)=     .032
      RUNOFF VOLUME    (mm)=   21.408
      TOTAL RAINFALL   (mm)=   86.400
      RUNOFF COEFFICIENT   =     .248

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

R0001:C00019----------------------------------------------------------------------------------------------------
*#-----------------|--------------------Area 102 (East)---------------------|
 ------------------------
 | CALIB NASHYD           |   Area     (ha)=   34.100   Curve Number   (CN)= 58.40
 | 02:102       DT= 5.00  |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=    1.430

      Unit Hyd Qpeak  (cms)=     .911

      PEAK FLOW       (cms)=     .465 (i)
      TIME TO PEAK    (hrs)=   13.700
      DURATION        (hrs)=   34.000, (dddd|hh:mm:)=   1|10:00
      AVERAGE FLOW    (cms)=     .065
      RUNOFF VOLUME    (mm)=   23.267
      TOTAL RAINFALL   (mm)=   86.400
      RUNOFF COEFFICIENT   =     .269

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

R0001:C00020----------------------------------------------------------------------------------------------------
 --------------------
 | SAVE HYD         |   AREA       (ha)=   16.900
 | ID=01:101        |   QPEAK      (cms)=     .269 (i)
 | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.200
 --------------------   VOLUME        (mm)=   21.408
  Filename: 101.0001
  Comments: preWest

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

R0001:C00021----------------------------------------------------------------------------------------------------
 --------------------
 | SAVE HYD         |   AREA       (ha)=   34.100
 | ID=02:102        |   QPEAK      (cms)=     .465 (i)
 | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.700
 --------------------   VOLUME        (mm)=   23.267
  Filename: 102.0001
  Comments: preEast

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

R0001:C00022----------------------------------------------------------------------------------------------------
*#*********************************************************************
*#*********************PRE-DEVELOPMENT - 50 YEAR Event *********************
*#*********************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#                    SCS Rainfall Distribution
*
*#*********************************************************************
 --------------------
 | MASS STORM       |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
 | Ptotal= 96.00 mm |    Comments: 24 hour SCS II storm mass curve
 --------------------
                          Duration of storm        =   24.00 hrs
                          Mass curve time step     =   12.00 min
                          Selected storm time step =    6.00 min
                          Volume of derived storm  =   96.00 mm

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
     hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr| hh:mm    mm/hr
      0:06    .000|  4:06    .960|  8:06   1.920|  12:06 108.000|  16:06   2.400|  20:06   1.920
      0:12    .000|  4:12    .960|  8:12   1.920|  12:12 108.000|  16:12   2.400|  20:12   1.920
      0:18    .960|  4:18   1.920|  8:18   2.880|  12:18  19.200|  16:18   2.400|  20:18   1.440
      0:24    .960|  4:24   1.920|  8:24   2.880|  12:24  19.200|  16:24   2.400|  20:24   1.440
      0:30    .960|  4:30   1.920|  8:30   2.880|  12:30  12.000|  16:30   2.400|  20:30   1.440
```

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00617>       0:36    .960|   4:36   1.920|   8:36   2.880|  12:36  12.000|  16:36   2.400|  20:36   1.440
00618>       0:42    .960|   4:42   1.920|   8:42   2.880|  12:42   8.640|  16:42   2.400|  20:42    .960
00619>       0:48    .960|   4:48   1.920|   8:48   2.880|  12:48   8.640|  16:48   2.400|  20:48    .960
00620>       0:54    .960|   4:54   1.920|   8:54   2.880|  12:54   8.160|  16:54   2.400|  20:54   1.440
00621>       1:00    .960|   5:00   1.920|   9:00   2.880|  13:00   8.160|  17:00   2.400|  21:00   1.440
00622>       1:06    .960|   5:06   1.920|   9:06   2.880|  13:06   5.760|  17:06   1.440|  21:06   1.440
00623>       1:12    .960|   5:12   1.920|   9:12   2.880|  13:12   5.760|  17:12   1.440|  21:12   1.440
00624>       1:18    .960|   5:18   1.920|   9:18   2.880|  13:18   4.800|  17:18   1.440|  21:18    .960
00625>       1:24    .960|   5:24   1.920|   9:24   2.880|  13:24   4.800|  17:24   1.440|  21:24    .960
00626>       1:30    .960|   5:30   1.920|   9:30   2.880|  13:30   4.800|  17:30   1.920|  21:30   1.440
00627>       1:36    .960|   5:36   1.920|   9:36   2.880|  13:36   4.800|  17:36   1.920|  21:36   1.440
00628>       1:42    .960|   5:42   1.920|   9:42   2.880|  13:42   4.800|  17:42   1.440|  21:42    .960
00629>       1:48    .960|   5:48   1.920|   9:48   2.880|  13:48   4.800|  17:48   1.440|  21:48    .960
00630>       1:54    .960|   5:54   1.920|   9:54   2.880|  13:54   4.800|  17:54   1.920|  21:54   1.440
00631>       2:00    .960|   6:00   1.920|  10:00   2.880|  14:00   4.800|  18:00   1.920|  22:00   1.440
00632>       2:06    .960|   6:06   1.920|  10:06   2.880|  14:06   4.800|  18:06   1.440|  22:06    .960
00633>       2:12    .960|   6:12   1.920|  10:12   2.880|  14:12   4.800|  18:12   1.440|  22:12    .960
00634>       2:18    .960|   6:18   1.920|  10:18   5.280|  14:18   2.880|  18:18   1.440|  22:18    .960
00635>       2:24    .960|   6:24   1.920|  10:24   5.280|  14:24   2.880|  18:24   1.440|  22:24    .960
00636>       2:30    .960|   6:30   1.920|  10:30   5.280|  14:30   2.880|  18:30   1.440|  22:30   1.440
00637>       2:36    .960|   6:36   1.920|  10:36   5.280|  14:36   2.880|  18:36   1.440|  22:36   1.440
00638>       2:42    .960|   6:42   1.920|  10:42   5.280|  14:42   2.880|  18:42   1.920|  22:42    .960
00639>       2:48    .960|   6:48   1.920|  10:48   5.280|  14:48   2.880|  18:48   1.920|  22:48    .960
00640>       2:54    .960|   6:54   1.920|  10:54   5.280|  14:54   2.880|  18:54   1.440|  22:54   1.440
00641>       3:00    .960|   7:00   1.920|  11:00   5.280|  15:00   2.880|  19:00   1.440|  23:00   1.440
00642>       3:06    .960|   7:06   1.920|  11:06   5.280|  15:06   2.880|  19:06   1.440|  23:06    .960
00643>       3:12    .960|   7:12   1.920|  11:12   5.280|  15:12   2.880|  19:12   1.440|  23:12    .960
00644>       3:18    .960|   7:18   1.920|  11:18   7.200|  15:18   2.400|  19:18   1.920|  23:18    .960
00645>       3:24    .960|   7:24   1.920|  11:24   7.200|  15:24   2.400|  19:24   1.920|  23:24    .960
00646>       3:30    .960|   7:30   1.920|  11:30  10.560|  15:30   2.400|  19:30   1.440|  23:30    .960
00647>       3:36    .960|   7:36   1.920|  11:36  10.560|  15:36   2.400|  19:36   1.440|  23:36    .960
00648>       3:42    .960|   7:42   1.920|  11:42  25.440|  15:42   2.400|  19:42   1.920|  23:42   1.440
00649>       3:48    .960|   7:48   1.920|  11:48  25.440|  15:48   2.400|  19:48   1.920|  23:48   1.440
00650>       3:54    .960|   7:54   1.920|  11:54  52.800|  15:54   2.400|  19:54   1.440|  23:54   1.920
00651>       4:00    .960|   8:00   1.920|  12:00  52.800|  16:00   2.400|  20:00   1.440|  24:00   1.920
00652>
00653> ------------------------------------------------------------------------------------------------------------
00654> R0001:C00023-------------------------------------------------------------------------------------------------
00655> *#-----------------|---------------------Area 101 (West)----------------------|
00656> ------------------------
00657> | CALIB NASHYD          |   Area     (ha)=   16.900   Curve Number    (CN)= 53.20
00658> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00659> ------------------------  U.H. Tp(hrs)=    1.040
00660>
00661>      Unit Hyd Qpeak  (cms)=      .621
00662>
00663>      PEAK FLOW       (cms)=      .328 (i)
00664>      TIME TO PEAK    (hrs)=   13.200
00665>      DURATION        (hrs)=   31.300, (dddd|hh:mm:)=   1|07:18
00666>      AVERAGE FLOW    (cms)=     .039
00667>      RUNOFF VOLUME    (mm)=   25.985
00668>      TOTAL RAINFALL   (mm)=   96.000
00669>      RUNOFF COEFFICIENT   =     .271
00670>
00671>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00672>
00673> ------------------------------------------------------------------------------------------------------------
00674> R0001:C00024-------------------------------------------------------------------------------------------------
00675> *#-----------------|---------------------Area 102 (East)----------------------|
00676> ------------------------
00677> | CALIB NASHYD          |   Area     (ha)=   34.100   Curve Number    (CN)= 58.40
00678> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00679> ------------------------  U.H. Tp(hrs)=    1.430
00680>
00681>      Unit Hyd Qpeak  (cms)=      .911
00682>
00683>      PEAK FLOW       (cms)=      .570 (i)
00684>      TIME TO PEAK    (hrs)=   13.700
00685>      DURATION        (hrs)=   34.000, (dddd|hh:mm:)=   1|10:00
00686>      AVERAGE FLOW    (cms)=     .079
00687>      RUNOFF VOLUME    (mm)=   28.331
00688>      TOTAL RAINFALL   (mm)=   96.000
00689>      RUNOFF COEFFICIENT   =     .295
00690>
00691>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00692>
00693> ------------------------------------------------------------------------------------------------------------
00694> R0001:C00025-------------------------------------------------------------------------------------------------
00695> --------------------
00696> | SAVE HYD          |   AREA       (ha)=   16.900
00697> | ID=01:101         |   QPEAK      (cms)=     .328 (i)
00698> | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.200
00699> --------------------   VOLUME       (mm)=   25.985
00700>   Filename: 101.0001
00701>   Comments: preWest
00702>
00703>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00704> ------------------------------------------------------------------------------------------------------------
00705> R0001:C00026-------------------------------------------------------------------------------------------------
00706> --------------------
00707> | SAVE HYD          |   AREA       (ha)=   34.100
00708> | ID=02:102         |   QPEAK      (cms)=     .570 (i)
00709> | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.700
00710> --------------------   VOLUME       (mm)=   28.331
00711>   Filename: 102.0001
00712>   Comments: preEast
00713>
00714>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00715> ------------------------------------------------------------------------------------------------------------
00716> R0001:C00027-------------------------------------------------------------------------------------------------
00717> *#*************************************************************************
00718> *#*********************PRE-DEVELOPMENT - 100 YEAR Event **********************
00719> *#*************************************************************************
00720> *
00721> *#   Rainfall Depths per MTO - Basins East of Collingwood
00722> *#                   SCS Rainfall Distribution
00723> *
00724> *#*************************************************************************
00725> --------------------
00726> | MASS STORM        |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
00727> | Ptotal=105.60 mm |    Comments: 24 hour SCS II storm mass curve
00728> --------------------
00729>                         Duration of storm        =   24.00 hrs
00730>                         Mass curve time step     =   12.00 min
00731>                         Selected storm time step =    6.00 min
00732>                         Volume of derived storm  =  105.60 mm
00733>
00734>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00735>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00736>       0:06    .000|   4:06   1.056|   8:06   2.112|  12:06 118.800|  16:06   2.640|  20:06   2.112
00737>       0:12    .000|   4:12   1.056|   8:12   2.112|  12:12 118.800|  16:12   2.640|  20:12   2.112
00738>       0:18   1.056|   4:18   2.112|   8:18   3.168|  12:18  21.120|  16:18   2.640|  20:18   1.584
00739>       0:24   1.056|   4:24   2.112|   8:24   3.168|  12:24  21.120|  16:24   2.640|  20:24   1.584
00740>       0:30   1.056|   4:30   2.112|   8:30   3.168|  12:30  13.200|  16:30   2.640|  20:30   1.584
00741>       0:36   1.056|   4:36   2.112|   8:36   3.168|  12:36  13.200|  16:36   2.640|  20:36   1.584
00742>       0:42   1.056|   4:42   2.112|   8:42   3.168|  12:42   9.504|  16:42   2.640|  20:42   1.056
00743>       0:48   1.056|   4:48   2.112|   8:48   3.168|  12:48   9.504|  16:48   2.640|  20:48   1.056
00744>       0:54   1.056|   4:54   2.112|   8:54   3.168|  12:54   8.976|  16:54   2.640|  20:54   1.584
00745>       1:00   1.056|   5:00   2.112|   9:00   3.168|  13:00   8.976|  17:00   2.640|  21:00   1.584
00746>       1:06   1.056|   5:06   2.112|   9:06   3.168|  13:06   6.336|  17:06   1.584|  21:06   1.584
00747>       1:12   1.056|   5:12   2.112|   9:12   3.168|  13:12   6.336|  17:12   1.584|  21:12   1.584
00748>       1:18   1.056|   5:18   2.112|   9:18   3.168|  13:18   5.280|  17:18   1.584|  21:18   1.056
00749>       1:24   1.056|   5:24   2.112|   9:24   3.168|  13:24   5.280|  17:24   1.584|  21:24   1.056
00750>       1:30   1.056|   5:30   2.112|   9:30   3.168|  13:30   5.280|  17:30   2.112|  21:30   1.584
00751>       1:36   1.056|   5:36   2.112|   9:36   3.168|  13:36   5.280|  17:36   2.112|  21:36   1.584
00752>       1:42   1.056|   5:42   2.112|   9:42   3.168|  13:42   5.280|  17:42   1.584|  21:42   1.056
00753>       1:48   1.056|   5:48   2.112|   9:48   3.168|  13:48   5.280|  17:48   1.584|  21:48   1.056
00754>       1:54   1.056|   5:54   2.112|   9:54   3.168|  13:54   5.280|  17:54   2.112|  21:54   1.584
00755>       2:00   1.056|   6:00   2.112|  10:00   3.168|  14:00   5.280|  18:00   2.112|  22:00   1.584
00756>       2:06   1.056|   6:06   2.112|  10:06   3.168|  14:06   5.280|  18:06   1.584|  22:06   1.056
00757>       2:12   1.056|   6:12   2.112|  10:12   3.168|  14:12   5.280|  18:12   1.584|  22:12   1.056
00758>       2:18   1.056|   6:18   2.112|  10:18   5.808|  14:18   3.168|  18:18   1.584|  22:18   1.056
00759>       2:24   1.056|   6:24   2.112|  10:24   5.808|  14:24   3.168|  18:24   1.584|  22:24   1.056
00760>       2:30   1.056|   6:30   2.112|  10:30   5.808|  14:30   3.168|  18:30   1.584|  22:30   1.584
00761>       2:36   1.056|   6:36   2.112|  10:36   5.808|  14:36   3.168|  18:36   1.584|  22:36   1.584
00762>       2:42   1.056|   6:42   2.112|  10:42   5.808|  14:42   3.168|  18:42   2.112|  22:42   1.056
00763>       2:48   1.056|   6:48   2.112|  10:48   5.808|  14:48   3.168|  18:48   2.112|  22:48   1.056
00764>       2:54   1.056|   6:54   2.112|  10:54   5.808|  14:54   3.168|  18:54   1.584|  22:54   1.584
00765>       3:00   1.056|   7:00   2.112|  11:00   5.808|  15:00   3.168|  19:00   1.584|  23:00   1.584
00766>       3:06   1.056|   7:06   2.112|  11:06   5.808|  15:06   3.168|  19:06   1.584|  23:06   1.056
00767>       3:12   1.056|   7:12   2.112|  11:12   5.808|  15:12   3.168|  19:12   1.584|  23:12   1.056
00768>       3:18   1.056|   7:18   2.112|  11:18   7.920|  15:18   2.640|  19:18   2.112|  23:18   1.056
00769>       3:24   1.056|   7:24   2.112|  11:24   7.920|  15:24   2.640|  19:24   2.112|  23:24   1.056
00770>       3:30   1.056|   7:30   2.112|  11:30  11.616|  15:30   2.640|  19:30   1.584|  23:30   1.056
00771>       3:36   1.056|   7:36   2.112|  11:36  11.616|  15:36   2.640|  19:36   1.584|  23:36   1.056
00772>       3:42   1.056|   7:42   2.112|  11:42  27.984|  15:42   2.640|  19:42   2.112|  23:42   1.584
00773>       3:48   1.056|   7:48   2.112|  11:48  27.984|  15:48   2.640|  19:48   2.112|  23:48   1.584
00774>       3:54   1.056|   7:54   2.112|  11:54  58.080|  15:54   2.640|  19:54   1.584|  23:54   2.112
00775>       4:00   1.056|   8:00   2.112|  12:00  58.080|  16:00   2.640|  20:00   1.584|  24:00   2.112
00776>
00777> ------------------------------------------------------------------------------------------------------------
00778> R0001:C00028-------------------------------------------------------------------------------------------------
00779> *#-----------------|---------------------Area 101 (West)----------------------|
00780> ------------------------
00781> | CALIB NASHYD          |   Area     (ha)=   16.900   Curve Number    (CN)= 53.20
00782> | 01:101        DT= 5.00 |   Ia       (mm)=    5.710   # of Linear Res.(N)=  3.00
00783> ------------------------  U.H. Tp(hrs)=    1.040
00784>
00785>      Unit Hyd Qpeak  (cms)=      .621
00786>
00787>      PEAK FLOW       (cms)=      .392 (i)
00788>      TIME TO PEAK    (hrs)=   13.200
00789>      DURATION        (hrs)=   31.300, (dddd|hh:mm:)=   1|07:18
00790>      AVERAGE FLOW    (cms)=     .046
00791>      RUNOFF VOLUME    (mm)=   30.860
00792>      TOTAL RAINFALL   (mm)=   105.600
00793>      RUNOFF COEFFICIENT   =     .292
00794>
00795>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00796>
00797> ------------------------------------------------------------------------------------------------------------
00798> R0001:C00029-------------------------------------------------------------------------------------------------
00799> *#-----------------|---------------------Area 102 (East)----------------------|
00800> ------------------------
00801> | CALIB NASHYD          |   Area     (ha)=   34.100   Curve Number    (CN)= 58.40
00802> | 02:102        DT= 5.00 |   Ia       (mm)=    8.850   # of Linear Res.(N)=  3.00
00803> ------------------------  U.H. Tp(hrs)=    1.430
00804>
00805>      Unit Hyd Qpeak  (cms)=      .911
00806>
00807>      PEAK FLOW       (cms)=      .682 (i)
00808>      TIME TO PEAK    (hrs)=   13.700
00809>      DURATION        (hrs)=   34.000, (dddd|hh:mm:)=   1|10:00
00810>      AVERAGE FLOW    (cms)=     .094
00811>      RUNOFF VOLUME    (mm)=   33.710
00812>      TOTAL RAINFALL   (mm)=   105.600
00813>      RUNOFF COEFFICIENT   =     .319
00814>
00815>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00816>
00817> ------------------------------------------------------------------------------------------------------------
00818> R0001:C00030-------------------------------------------------------------------------------------------------
00819> --------------------
00820> | SAVE HYD          |   AREA       (ha)=   16.900
00821> | ID=01:101         |   QPEAK      (cms)=     .392 (i)
00822> | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.200
00823> --------------------   VOLUME       (mm)=   30.860
00824>   Filename: 101.0001
00825>   Comments: preWest
00826>
00827>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00828> ------------------------------------------------------------------------------------------------------------
00829> R0001:C00031-------------------------------------------------------------------------------------------------
00830> --------------------
00831> | SAVE HYD          |   AREA       (ha)=   34.100
00832> | ID=02:102         |   QPEAK      (cms)=     .682 (i)
00833> | DT= 6.00 PCYC=-1 |   TPEAK      (hrs)=   13.700
00834> --------------------   VOLUME       (mm)=   33.710
00835>   Filename: 102.0001
00836>   Comments: preEast
00837>
00838>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00839> ------------------------------------------------------------------------------------------------------------
00840> R0001:C00032-------------------------------------------------------------------------------------------------
00841> --------------------
00842> | FINISH            |
00843> --------------------
00844> ------------------------------------------------------------------------------------------------------------
00845> ************************************************************************************************************
00846>      WARNINGS / ERRORS / NOTES
00847>      -------------------------
00848>    Simulation ended on 2019-07-25     at 20:47:59
00849> ============================================================================================================
00850>
```

```
00001> 2     Metric units
00002> *#*****************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date        : 01-17-2011
00005> *#  Updated     : 07-25-2019
00006> *#  Modeller    : [J.Proctor/R.Alexander]
00007> *#  Company     : C.F. Crozier & Associates Inc.
00008> *#  License #   :  3737016
00009> *#*****************************************************************************
00010> *#  J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\Tim.dat
00011> *#*****************************************************************************
00012> START               TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                   [  ] <--storm filename, one per line for NSTORM time
00014> *%------------------|-------------------------------------------------------|
00015> *#*****************************************************************************
00016> *#************************PRE-DEVELOPMENT - Timmins Event **********************
00017> *#*****************************************************************************
00018> *%------------------|-------------------------------------------------------|
00019> READ STORM           STORM_FILENAME=["tim.stm"]
00020> *%------------------|-------------------------------------------------------|
00021> *#------------------|---------------------Area 101 (West)-------------------|
00022> *%------------------|-------------------------------------------------------|
00023> CALIB NASHYD        ID=[1], NHYD=["101"], DT=[5]min, AREA=[16.9](ha),
00024>                     DWF=[0](cms),  CN/C=[53.2], IA=[5.71](mm),
00025>                     N=[3], TP=[1.04]hrs,
00026>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00027> *%------------------|-------------------------------------------------------|
00028> *#------------------|---------------------Area 102 (East)-------------------|
00029> *%------------------|-------------------------------------------------------|
00030> CALIB NASHYD        ID=[2], NHYD=["102"], DT=[5]min, AREA=[34.1](ha),
00031>                     DWF=[0](cms),  CN/C=[58.4], IA=[8.85](mm),
00032>                     N=[3], TP=[1.43]hrs,
00033>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00034> *%------------------|-------------------------------------------------------|
00035> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00036>                     HYD_COMMENT=["preWest"]
00037> *%------------------|-------------------------------------------------------|
00038> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00039>                     HYD_COMMENT=["preEast"]
00040> *%------------------|-------------------------------------------------------|
00041>
00042> FINISH
00043>
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```

```
00001> ================================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 =========
00004> S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2    0   0   11   7   7
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2    0   0   11       7 Ver4.05.0
00006>     S    W W    M   M   H   H     Y     M   M   O   O        222    0   0   11      7  APR 2017
00007> SSSSS    W W    M   M   H   H     Y     M   M    OOO         2      0   0   11     7   =========
00008>                                                              2      0   0   11    7    # 3737016
00009>       StormWater Management HYdrologic Model                  222     000    11    7    =========
00010>
00011> ************************************************************************************************
00012> ************************************  SWMHYMO Ver4.05.0  ***************************************
00013> ******************  A single event and continuous hydrologic simulation model  *******************
00014> ******************     based on the principles of HYMO and its successors      *******************
00015> ******************                OTTHYMO-83 and OTTHYMO-89.                 *******************
00016> ************************************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *******************
00018> ******************                 Ottawa,  Ontario: (613) 836-3884           *******************
00019> ******************                 Gatineau, Quebec: (819) 243-6858           *******************
00020> ******************                 E-Mail: swmhymo@jfsa.com                   *******************
00021> ************************************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.                ++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ************************************************************************************************
00029> ******************              ++++++ PROGRAM ARRAY DIMENSIONS ++++++                 *******************
00030> ******************              Maximum value for ID numbers  :      11               *******************
00031> ******************              Max. number of rainfall points: 105408                *******************
00032> ******************              Max. number of flow points    : 105408                *******************
00033> ************************************************************************************************
00034>
00035>
00036> *******************************   S U M M A R Y   O U T P U T   ********************************
00037> ************************************************************************************************
00038> *                 RUN DATE: 2019-07-25     TIME: 20:57:20     RUN COUNTER: 000003                *
00039> ************************************************************************************************
00040> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00041> *                HYMO\Pre\Tim.dat                                                                *
00042> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00043> *                HYMO\Pre\Tim.out                                                                *
00044> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00045> *                HYMO\Pre\Tim.sum                                                                *
00046> * User comments:                                                                                *
00047> * 1:_____________________________________________________________________________________________*
00048> * 2:_____________________________________________________________________________________________*
00049> * 3:_____________________________________________________________________________________________*
00050> ************************************************************************************************
00051>
00052>
00053> #*****************************************************************************
00054> #  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00055> #  Date        : 01-17-2011
00056> #  Updated     : 07-25-2019
00057> #  Modeller    : [J.Proctor/R.Alexander]
00058> #  Company     : C.F. Crozier & Associates Inc.
00059> #  License #   :  3737016
00060> #*****************************************************************************
00061> #  J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\Tim.dat
00062> #*****************************************************************************
00063>  RUN#:COMMAND#
00064> R0001:C00001-------------------------------------------------------------------------------------
00065>      START
00066>       [TZERO =    .00 hrs on        0]
00067>       [METOUT=   2    (1=imperial, 2=metric output)]
00068>       [NSTORM=   0 ]
00069>       [NRUN  = 0001 ]
00070> #*****************************************************************************
00071> #*********************PRE-DEVELOPMENT - Timmins Event ************************
00072> #*****************************************************************************
00073> R0001:C00002-------------------------------------------------------------------------------------
00074>      READ STORM
00075>       Filename = tim.stm
00076>       Comment  = Timmins Storm Event
00077>       [SDT=60.00:SDUR=  12.00:PTOT= 193.00]
00078> #-----------------|---------------------Area 101 (West)-----------------------|
00079> R0001:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00080>     CALIB NASHYD           5.0 01:101           16.90     .666 No_date    8:00   85.40 .442     .000
00081>       [CN= 53.2: N= 3.00: Tp= 1.04]
00082> #-----------------|---------------------Area 102 (East)-----------------------|
00083> R0001:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00084>     CALIB NASHYD           5.0 02:102           34.10    1.382 No_date    9:20   92.89 .481     .000
00085>       [CN= 58.4: N= 3.00: Tp= 1.43]
00086> R0001:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00087>     SAVE HYD               5.0 01:101           16.90     .666 No_date    8:00   85.40  n/a     .000
00088>       fname :101.0001
00089>       remark:preWest
00090> R0001:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00091>     SAVE HYD               5.0 02:102           34.10    1.382 No_date    9:20   92.89  n/a     .000
00092>       fname :102.0001
00093>       remark:preEast
00094> R0001:C00007-------------------------------------------------------------------------------------
00095>     FINISH
00096> -------------------------------------------------------------------------------------------------
00097> *************************************************************************************************
00098>      WARNINGS / ERRORS / NOTES
00099>      ------------------------
00100>     Simulation ended on 2019-07-25     at 20:57:20
00101> ================================================================================================
00102>
```

```
 ================================================================================
 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222    000    11   77777 ========
 S       W W W   MM MM   H   H   Y Y     MM MM   O   O          2   0   0   11   7   7
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2   0   0   11       7 Ver4.05.0
     S   W W     M   M   H   H     Y     M   M   O   O        222   0   0   11       7  APR 2017
 SSSSS    W W    M   M   H   H     Y     M   M    OOO        2      0   0   11       7  ========
                                                            2      0   0   11   7    # 3737016
       StormWater Management HYdrologic Model                222    000    11   7    ========
 ================================================================================
 ********************************************************************************
 ************************************  SWMHYMO Ver4.05.0  ***********************
 ******************  A single event and continuous hydrologic simulation model  ***
 ******************     based on the principles of HYMO and its successors      ***
 ******************                OTTHYMO-83 and OTTHYMO-89.                   ***
 ********************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ***
 ******************                  Ottawa,  Ontario: (613) 836-3884           ***
 ******************                  Gatineau, Quebec: (819) 243-6858           ***
 ******************                  E-Mail: swmhymo@jfsa.com                   ***
 ********************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ********************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++            ***
 ******************           Maximum value for ID numbers  :     11            ***
 ******************           Max. number of rainfall points: 105408            ***
 ******************           Max. number of flow points    : 105408            ***
 ********************************************************************************

 ********************************************************************************
 ************************************  SWMHYMO Ver4.05.0  ***********************
 ******************  A single event and continuous hydrologic simulation model  ***
 ******************     based on the principles of HYMO and its successors      ***
 ******************                OTTHYMO-83 and OTTHYMO-89.                   ***
 ********************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ***
 ******************                  Ottawa,  Ontario: (613) 836-3884           ***
 ******************                  Gatineau, Quebec: (819) 243-6858           ***
 ******************                  E-Mail: swmhymo@jfsa.com                   ***
 ********************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ********************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++            ***
 ******************           Maximum value for ID numbers  :     11            ***
 ******************           Max. number of rainfall points: 105408            ***
 ******************           Max. number of flow points    : 105408            ***
 ********************************************************************************


 ******************************  D E T A I L E D   O U T P U T  ******************************
 ********************************************************************************************
 *            RUN DATE: 2019-07-25      TIME: 20:57:20     RUN COUNTER: 000003              *
 ********************************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\Pre\Tim.dat                                                             *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\Pre\Tim.out                                                             *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\Pre\Tim.sum                                                             *
 * User comments:                                                                             *
 * 1:_____________________________________________________________________________________*
 * 2:_____________________________________________________________________________________*
 * 3:_____________________________________________________________________________________*
 ********************************************************************************************

 --------------------------------------------------------------------------------------------
 R0001:C00001-------------------------------------------------------------------------------
 *#*****************************************************************************
 *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
 *#  Date        : 01-17-2011
 *#  Updated     : 07-25-2019
 *#  Modeller    : [J.Proctor/R.Alexander]
 *#  Company     : C.F. Crozier & Associates Inc.
 *#  License #   :  3737016
 *#*****************************************************************************
 *#  J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Pre\Tim.dat
 *#*****************************************************************************
 --------------------
 | START           | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
 -------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
     TZERO =   .00 hrs on       0
     METOUT=   2 (output = METRIC)
     NRUN  = 0001
     NSTORM=   0
 --------------------------------------------------------------------------------------------
 R0001:C00002-------------------------------------------------------------------------------
 *#*****************************************************************************
 *#**********************PRE-DEVELOPMENT - Timmins Event ************************
 *#*****************************************************************************
 --------------------
 | READ STORM      |  Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update
 | Ptotal= 193.00 mm|  Comments: Timmins Storm Event
 --------------------
       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       1:00  15.000|   3:00  10.000|   5:00   5.000|   7:00  43.000|   9:00  23.000|  11:00  13.000
       2:00  20.000|   4:00   3.000|   6:00  20.000|   8:00  20.000|  10:00  13.000|  12:00   8.000

 --------------------------------------------------------------------------------------------
 R0001:C00003-------------------------------------------------------------------------------
 *#------------------|---------------------Area 101 (West)----------------------|
 ---------------------------
 | CALIB NASHYD      |   Area    (ha)=   16.900   Curve Number   (CN)= 53.20
 | 01:101      DT= 5.00 |   Ia      (mm)=    5.710   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=    1.040

      Unit Hyd Qpeak  (cms)=     .621

      PEAK FLOW       (cms)=     .666 (i)
      TIME TO PEAK    (hrs)=    8.000
      DURATION        (hrs)=   19.250, (dddd|hh:mm:)=   0|19:15
      AVERAGE FLOW    (cms)=     .208
      RUNOFF VOLUME    (mm)=   85.402
      TOTAL RAINFALL   (mm)=  193.000
      RUNOFF COEFFICIENT   =     .442

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

 --------------------------------------------------------------------------------------------
 R0001:C00004-------------------------------------------------------------------------------
 *#------------------|---------------------Area 102 (East)----------------------|
 ---------------------------
 | CALIB NASHYD      |   Area    (ha)=   34.100   Curve Number   (CN)= 58.40
 | 02:102      DT= 5.00 |   Ia      (mm)=    8.850   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=    1.430

      Unit Hyd Qpeak  (cms)=     .911

      PEAK FLOW       (cms)=    1.382 (i)
      TIME TO PEAK    (hrs)=    9.333
      DURATION        (hrs)=   22.000, (dddd|hh:mm:)=   0|22:00
      AVERAGE FLOW    (cms)=     .400
      RUNOFF VOLUME    (mm)=   92.887
      TOTAL RAINFALL   (mm)=  193.000
      RUNOFF COEFFICIENT   =     .481

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

 --------------------------------------------------------------------------------------------
 R0001:C00005-------------------------------------------------------------------------------
 --------------------
 | SAVE HYD        |   AREA       (ha)=   16.900
 | ID=01:101       |   QPEAK     (cms)=     .666 (i)
 | DT= 5.00 PCYC=-1 |   TPEAK     (hrs)=    8.000
 --------------------   VOLUME     (mm)=   85.402
   Filename: 101.0001
   Comments: preWest

      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
 --------------------------------------------------------------------------------------------
 R0001:C00006-------------------------------------------------------------------------------
 --------------------
 | SAVE HYD        |   AREA       (ha)=   34.100
 | ID=02:102       |   QPEAK     (cms)=    1.382 (i)
 | DT= 5.00 PCYC=-1 |   TPEAK     (hrs)=    9.333
 --------------------   VOLUME     (mm)=   92.887
   Filename: 102.0001
   Comments: preEast

      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
 --------------------------------------------------------------------------------------------
 R0001:C00007-------------------------------------------------------------------------------
 --------------------
 | FINISH          |
 --------------------
 --------------------------------------------------------------------------------------------
 ********************************************************************************************
      WARNINGS / ERRORS / NOTES
      -------------------------
    Simulation ended on 2019-07-25     at 20:57:20
 ============================================================================================
```

```
00001> 2     Metric units
00002> *#*****************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date        : 01-17-2011
00005> *#  Updated     : 07-25-2019
00006> *#  Modeller    : [J.Proctor/R.Alexander]
00007> *#  Company     : C.F. Crozier & Associates Inc.
00008> *#  License #   :  3737016
00009> *#*****************************************************************************
00010> *# J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\25mm_CHI.dat
00011> *#*****************************************************************************
00012> START                TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                    [  ] <--storm filename, one per line for NSTORM time
00014> *%-----------------|-------------------------------------------------------|
00015> *#*****************************************************************************
00016> *#*****************POST-DEVELOPMENT UNCONTROLLED - 25mm Event ****************
00017> *#*****************************************************************************
00018> *
00019> *#   Rainfall Depths per MTO - Basins East of Collingwood
00020> *#   24 hour Kifer Chu Chicago Rainfall Distribution
00021> *
00022> *#*****************************************************************************
00023> *%-----------------|-------------------------------------------------------|
00024> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[15](min),
00025>                     ICASEcs=[1],
00026>                      A=[568.7],  B=[6.662], and C=[0.819],
00027> *%-----------------|-------------------------------------------------------|
00028> *#-----------------|-----------Area 2101 (West Developed Area)---------------|
00029> *%-----------------|-------------------------------------------------------|
00030> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00031>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00032>                     SCS curve number CN=[54],
00033>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00034>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00035>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00036>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00037>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00038> *%-----------------|-------------------------------------------------------|
00039> *#-----------------|-------------Area 2102 (Silver Creek Buffer)--------------|
00040> *%-----------------|-------------------------------------------------------|
00041> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00042>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00043>                     N=[3], TP=[1.02]hrs,
00044>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00045> *%-----------------|-------------------------------------------------------|
00046> *#-----------------|-------------Area 2103 (East Developed Area)--------------|
00047> *%-----------------|-------------------------------------------------------|
00048> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00049>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00050>                     SCS curve number CN=[74],
00051>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00052>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00053>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00054>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00055>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00056> *%-----------------|-------------------------------------------------------|
00057> *#-----------------|-------------Area 2104 (East Natural Area)------------|
00058> *%-----------------|-------------------------------------------------------|
00059> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00060>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00061>                     N=[3], TP=[0.74]hrs,
00062>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00063> *%-----------------|-------------------------------------------------------|
00064> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00065> *%-----------------|-------------------------------------------------------|
00066> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00067>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00068>                     N=[3], TP=[2.35]hrs,
00069>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00070> *%-----------------|-------------------------------------------------------|
00071> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00072> *%-----------------|-------------------------------------------------------|
00073> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00074> *%-----------------|-------------------------------------------------------|
00075> SAVE HYD            ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00076>                     HYD_COMMENT=["UC-West"]
00077> *%-----------------|-------------------------------------------------------|
00078> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00079> *%-----------------|-------------------------------------------------------|
00080> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00081> *%-----------------|-------------------------------------------------------|
00082> SAVE HYD            ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00083>                     HYD_COMMENT=["UC-East"]
00084> *%-----------------|-------------------------------------------------------|
00085> FINISH
```

```
00001> ================================================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
00004> S       W W W   MM MM   H   H   Y Y     MM MM   O   O          2     0   0   11     7   7
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2     0   0   11       7 Ver4.05.0
00006>     S    W W    M   M   H   H     Y     M   M   O   O        222     0   0   11       7  APR 2017
00007> SSSSS    W W    M   M   H   H     Y     M   M    OOO         2       0   0   11     7   ========
00008>                                                              2       0   0   11     7    # 3737016
00009>       StormWater Management HYdrologic Model                  222     000    11    7    ========
00010>
00011> ********************************************************************************************************
00012> ************************************  SWMHYMO Ver4.05.0  ***********************************************
00013> ******************  A single event and continuous hydrologic simulation model  ***************************
00014> ******************     based on the principles of HYMO and its successors      ***************************
00015> ******************                 OTTHYMO-83 and OTTHYMO-89.                  ***************************
00016> ********************************************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ***************************
00018> ******************                  Ottawa,  Ontario: (613) 836-3884           ***************************
00019> ******************                  Gatineau, Quebec: (819) 243-6858           ***************************
00020> ******************                  E-Mail: swmhymo@jfsa.com                   ***************************
00021> ********************************************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016       ++++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ********************************************************************************************************
00029> ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++                 ***************
00030> ******************                Maximum value for ID numbers  :      11               ***************
00031> ******************                Max. number of rainfall points: 105408                ***************
00032> ******************                Max. number of flow points    : 105408                ***************
00033> ********************************************************************************************************
00034>
00035>
00036> *******************************   S U M M A R Y   O U T P U T   ********************************************
00037> ********************************************************************************************************
00038> *                 RUN DATE: 2019-07-25     TIME: 21:37:18     RUN COUNTER: 000007                        *
00039> ********************************************************************************************************
00040> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00041> *                HYMO\UC\25mm_CHI.dat                                                          *
00042> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00043> *                HYMO\UC\25mm_CHI.out                                                          *
00044> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00045> *                HYMO\UC\25mm_CHI.sum                                                          *
00046> * User comments:                                                                              *
00047> * 1:_____________________________________________________________________________________________*
00048> * 2:_____________________________________________________________________________________________*
00049> * 3:_____________________________________________________________________________________________*
00050> ********************************************************************************************************
00051>
00052>
00053> #*************************************************************************
00054> #  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00055> #  Date         : 01-17-2011
00056> #  Updated      : 07-25-2019
00057> #  Modeller     : [J.Proctor/R.Alexander]
00058> #  Company      : C.F. Crozier & Associates Inc.
00059> #  License #    :  3737016
00060> #*************************************************************************
00061> # J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\25mm_CHI.dat
00062> #*************************************************************************
00063>  RUN#:COMMAND#
00064> R0001:C00001-----------------------------------------------------------------------------------------------
00065>      START
00066>       [TZERO =    .00 hrs on        0]
00067>       [METOUT=   2    (1=imperial, 2=metric output)]
00068>       [NSTORM=   0 ]
00069>       [NRUN  = 0001 ]
00070> #*************************************************************************
00071> #***************POST-DEVELOPMENT UNCONTROLLED - 25mm Event ******************
00072> #*************************************************************************
00073> #   Rainfall Depths per MTO - Basins East of Collingwood
00074> #   24 hour Kifer Chu Chicago Rainfall Distribution
00075> #*************************************************************************
00076> R0001:C00002-----------------------------------------------------------------------------------------------
00077>      CHICAGO STORM
00078>       [SDT=15.00:SDUR=   4.00:PTOT=  24.95]
00079>       [A/B/C= 568.700/   6.662/    .819]
00080> #-----------------|------------Area 2101 (West Developed Area)----------------|
00081> R0001:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00082>     CALIB STANDHYD          1.0 01:2101          10.00     .376 No_date    1:15    8.70 .349     .000
00083>       [XIMP=.30:TIMP=.50]
00084>       [LOSS= 2 :CN= 54.0]
00085>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00086>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00087> #-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00088> R0001:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00089>     CALIB NASHYD            5.0 02:2102           6.90     .009 No_date    2:40    1.39 .056     .000
00090>       [CN= 52.8: N= 3.00: Tp= 1.02]
00091> #-----------------|------------Area 2103 (East Developed Area)--------------|
00092> R0001:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00093>     CALIB STANDHYD          1.0 03:2103           1.70     .077 No_date    1:18   13.11 .526     .000
00094>       [XIMP=.40:TIMP=.65]
00095>       [LOSS= 2 :CN= 74.0]
00096>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00097>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00098> #-----------------|------------Area 2104 (East Natural Area)-------------|
00099> R0001:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00100>     CALIB NASHYD            5.0 04:2104          10.90     .016 No_date    2:25    1.34 .054     .000
00101>       [CN= 61.6: N= 3.00: Tp=  .74]
00102> #-----------------|-----------Area 2105 (Central Natural Area)------------|
00103> R0001:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00104>     CALIB NASHYD            5.0 05:2105          21.50     .014 No_date    4:35    1.13 .045     .000
00105>       [CN= 53.9: N= 3.00: Tp= 2.35]
00106> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00107> R0001:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00108>     ADD HYD                 1.0 01:2101          10.00     .376 No_date    1:15    8.70  n/a     .000
00109>                       +     5.0 02:2102           6.90     .009 No_date    2:40    1.39  n/a     .000
00110>                     SUM=    1.0 06:UC-West       16.90     .377 No_date    1:15    5.72  n/a     .000
00111> R0001:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00112>     SAVE HYD                1.0 06:UC-West       16.90     .377 No_date    1:15    5.72  n/a     .000
00113>       fname :UC-West.0001
00114>       remark:UC-West
00115> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00116> R0001:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00117>     ADD HYD                 1.0 03:2103           1.70     .077 No_date    1:18   13.11  n/a     .000
00118>                       +     5.0 04:2104          10.90     .016 No_date    2:25    1.34  n/a     .000
00119>                       +     5.0 05:2105          21.50     .014 No_date    4:35    1.13  n/a     .000
00120>                     SUM=    1.0 07:UC-East       34.10     .078 No_date    1:19    1.79  n/a     .000
00121> R0001:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00122>     SAVE HYD                1.0 07:UC-East       34.10     .078 No_date    1:19    1.79  n/a     .000
00123>       fname :UC-East.0001
00124>       remark:UC-East
00125> R0001:C00012-----------------------------------------------------------------------------------------------
00126>     FINISH
00127> -----------------------------------------------------------------------------------------------------------
00128> ***********************************************************************************************************
00129>      WARNINGS / ERRORS / NOTES
00130>      -------------------------
00131>    Simulation ended on 2019-07-25     at 21:37:18
00132> ===========================================================================================================
00133>
```

East SWM Facility Extended Detention
25mm RV = 8.7 mm x 10.0 ha = 870 cu.m

```
 ================================================================================
 
 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222     000    11   77777 ========
 S       W W W   MM MM   H   H   Y Y     MM MM   O   O          2     0   0   11     7   7
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2     0   0   11       7  Ver4.05.0
     S   W W     M   M   H   H     Y     M   M   O   O        222     0   0   11       7  APR 2017
 SSSSS   W W     M   M   H   H     Y     M   M    OOO         2       000    11     7    ========
                                                              2       0   0   11     7    # 3737016
       StormWater Management HYdrologic Model                 222     000    11     7    ========
 
 ********************************************************************************
 ***************************************  SWMHYMO Ver4.05.0  ********************
 ****************  A single event and continuous hydrologic simulation model  ***
 ****************      based on the principles of HYMO and its successors      ***
 ****************                 OTTHYMO-83 and OTTHYMO-89.                   ***
 ********************************************************************************
 ***************** Distributed by:  J.F. Sabourin and Associates Inc.           ***
 *****************                  Ottawa,  Ontario: (613) 836-3884            ***
 *****************                  Gatineau, Quebec: (819) 243-6858            ***
 *****************                  E-Mail: swmhymo@jfsa.com                    ***
 ********************************************************************************
 
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016     ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 
 ********************************************************************************
 ****************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ***
 ****************                Maximum value for ID numbers  :     11         ***
 ****************                Max. number of rainfall points: 105408         ***
 ****************                Max. number of flow points    : 105408         ***
 ********************************************************************************
 
 ********************************************************************************
 ***************************************  SWMHYMO Ver4.05.0  ********************
 ****************  A single event and continuous hydrologic simulation model  ***
 ****************      based on the principles of HYMO and its successors      ***
 ****************                 OTTHYMO-83 and OTTHYMO-89.                   ***
 ********************************************************************************
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 *****************                  Ottawa,  Ontario: (613) 836-3884            ***
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 ********************************************************************************
 
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016     ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 
 ********************************************************************************
 ****************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ***
 ****************                Maximum value for ID numbers  :     11         ***
 ****************                Max. number of rainfall points: 105408         ***
 ****************                Max. number of flow points    : 105408         ***
 ********************************************************************************
 
 
 ******************************  D E T A I L E D   O U T P U T  ******************************
 ********************************************************************************************
 *              RUN DATE: 2019-07-25       TIME: 21:37:18     RUN COUNTER: 000007              *
 ********************************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\UC\25mm_CHI.dat                                                           *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\UC\25mm_CHI.out                                                           *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\UC\25mm_CHI.sum                                                           *
 * User comments:                                                                               *
 * 1:_____________________________________________________________________________________*
 * 2:_____________________________________________________________________________________*
 * 3:_____________________________________________________________________________________*
 ********************************************************************************************
 
 --------------------------------------------------------------------------------
 R0001:C00001------------------------------------------------------------------------------
 *#*****************************************************************************
 *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
 *#  Date        : 01-17-2011
 *#  Updated     : 07-25-2019
 *#  Modeller    : [J.Proctor/R.Alexander]
 *#  Company     : C.F. Crozier & Associates Inc.
 *#  License #   :  3737016
 *#*****************************************************************************
 *# J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\25mm_CHI.dat
 *#*****************************************************************************
 ---------------------
 | START             | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
 --------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
     TZERO =   .00 hrs on       0
     METOUT=   2 (output = METRIC)
     NRUN  = 0001
     NSTORM=   0
 --------------------------------------------------------------------------------
 R0001:C00002------------------------------------------------------------------------------
 *#*****************************************************************************
 *#****************POST-DEVELOPMENT UNCONTROLLED - 25mm Event ********************
 *#*****************************************************************************
 *
 *#   Rainfall Depths per MTO - Basins East of Collingwood
 *#   24 hour Kifer Chu Chicago Rainfall Distribution
 *
 *#*****************************************************************************
 ---------------------
 | CHICAGO STORM     |     IDF curve parameters: A= 568.700
 | Ptotal= 24.95 mm  |                           B=   6.662
 ---------------------                           C=    .819
                           used in:   INTENSITY =  A / (t + B)^C

                           Duration of storm  =  4.00 hrs
                           Storm time step    = 15.00 min
                           Time to peak ratio =   .33

       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       0:15   1.724|   1:00   9.052|   1:45   6.051|   2:30   2.500|   3:15   1.622|   4:00   1.219
       0:30   2.302|   1:15  45.809|   2:00   4.068|   2:45   2.110|   3:30   1.458|
       0:45   3.573|   1:30  12.066|   2:15   3.086|   3:00   1.831|   3:45   1.327|

 --------------------------------------------------------------------------------
 R0001:C00003------------------------------------------------------------------------------
 *#-----------------|------------Area 2101 (West Developed Area)---------------|
 ---------------------
 | CALIB STANDHYD    |   Area    (ha)=   10.00
 | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
 ---------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area      (ha)=       5.00         5.00
      Dep. Storage      (mm)=       2.00         5.00
      Average Slope     (%)=        .50         2.00
      Length            (m)=     100.00        35.00
      Mannings n            =       .013         .150

      Max.eff.Inten.(mm/hr)=      45.81        4.35
                  over (min)       4.00       21.00
      Storage Coeff.  (min)=      4.30 (ii)   21.10 (ii)
      Unit Hyd. Tpeak (min)=      4.00       21.00
      Unit Hyd. peak  (cms)=       .27         .05
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .37         .04          .376 (iii)
      TIME TO PEAK    (hrs)=      1.25        1.58         1.250
      RUNOFF VOLUME    (mm)=     22.95        2.60         8.703
      TOTAL RAINFALL   (mm)=     24.95       24.95        24.950
      RUNOFF COEFFICIENT   =       .92         .10          .349

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  54.0    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.

 --------------------------------------------------------------------------------
 R0001:C00004------------------------------------------------------------------------------
 *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
 ---------------------
 | CALIB NASHYD      |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
 | 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=    1.020

      Unit Hyd Qpeak  (cms)=      .258

      PEAK FLOW       (cms)=      .009 (i)
      TIME TO PEAK    (hrs)=    2.667
      DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
      AVERAGE FLOW    (cms)=     .002
      RUNOFF VOLUME    (mm)=    1.386
      TOTAL RAINFALL   (mm)=   24.950
      RUNOFF COEFFICIENT   =     .056

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

 --------------------------------------------------------------------------------
 R0001:C00005------------------------------------------------------------------------------
 *#-----------------|------------Area 2103 (East Developed Area)---------------|
 ---------------------
 | CALIB STANDHYD    |   Area    (ha)=    1.70
 | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
 ---------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area      (ha)=       1.10         .60
      Dep. Storage      (mm)=       2.00        5.00
      Average Slope     (%)=        .50        2.00
      Length            (m)=     295.00       35.00
      Mannings n            =       .013        .150

      Max.eff.Inten.(mm/hr)=      45.81       15.52
                  over (min)       8.00       18.00
      Storage Coeff.  (min)=      8.23 (ii)   18.33 (ii)
      Unit Hyd. Tpeak (min)=      8.00       18.00
      Unit Hyd. peak  (cms)=       .14         .06
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .07         .02          .077 (iii)
      TIME TO PEAK    (hrs)=      1.28        1.52         1.300
      RUNOFF VOLUME    (mm)=     22.95        6.55        13.111
      TOTAL RAINFALL   (mm)=     24.95       24.95        24.950
      RUNOFF COEFFICIENT   =       .92         .26          .526

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

 --------------------------------------------------------------------------------
 R0001:C00006------------------------------------------------------------------------------
 *#-----------------|------------Area 2104 (East Natural Area)-------------|
 ---------------------
 | CALIB NASHYD      |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
 | 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=      .563

      PEAK FLOW       (cms)=      .016 (i)
      TIME TO PEAK    (hrs)=    2.417
      DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
      AVERAGE FLOW    (cms)=     .004
      RUNOFF VOLUME    (mm)=    1.340
      TOTAL RAINFALL   (mm)=   24.950
      RUNOFF COEFFICIENT   =     .054

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

 --------------------------------------------------------------------------------
 R0001:C00007------------------------------------------------------------------------------
 *#-----------------|----------Area 2105 (Central Natural Area)-------------|
 ---------------------
 | CALIB NASHYD      |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
 | 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=      .349

      PEAK FLOW       (cms)=      .014 (i)
      TIME TO PEAK    (hrs)=    4.583
      DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
      AVERAGE FLOW    (cms)=     .003
      RUNOFF VOLUME    (mm)=    1.131
      TOTAL RAINFALL   (mm)=   24.950
      RUNOFF COEFFICIENT   =     .045

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

 --------------------------------------------------------------------------------
 R0001:C00008------------------------------------------------------------------------------
 *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
 ---------------------
 | ADD HYD           |
 | 06:UC-West        |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ---------------------                        (ha)     (cms)    (hrs)      (mm)   (cms)
                          ID 1 01:2101         10.000     .376    1.250     8.703    .000
                        +ID 2 02:2102          6.900     .009    2.667     1.386    .000
                        ================================================================
                        SUM   06:UC-West      16.900     .377    1.250     5.716    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 --------------------------------------------------------------------------------
 R0001:C00009------------------------------------------------------------------------------
 *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
 ---------------------
 | ADD HYD           |
 | 07:UC-East        |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ---------------------                        (ha)     (cms)    (hrs)      (mm)   (cms)
                          ID 1 03:2103          1.700     .077    1.300    13.111    .000
                        +ID 2 04:2104         10.900     .016    2.417     1.340    .000
                        +ID 3 05:2105         21.500     .014    4.583     1.131    .000
                        ================================================================
                        SUM   07:UC-East      34.100     .078    1.317     1.795    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 --------------------------------------------------------------------------------
 R0001:C00010------------------------------------------------------------------------------
 *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
 ---------------------
 | ADD HYD           |
 | 07:UC-East        |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ---------------------                        (ha)     (cms)    (hrs)      (mm)   (cms)
                          ID 1 03:2103          1.700     .077    1.300    13.111    .000
                        +ID 2 04:2104         10.900     .016    2.417     1.340    .000
                        +ID 3 05:2105         21.500     .014    4.583     1.131    .000
                        ================================================================
                        SUM   07:UC-East      34.100     .078    1.317     1.795    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 --------------------------------------------------------------------------------
 R0001:C00011------------------------------------------------------------------------------
 *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
 ---------------------
 | SAVE HYD          |   AREA       (ha)=   34.100
 | 07:UC-East        |   QPEAK     (cms)=    .078 (i)
 | DT= 1.00 PCYC=-1  |   TPEAK     (hrs)=   1.317
 ---------------------   VOLUME       (mm)=   1.795
   Filename: UC-East.0001
   Comments: UC-East

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

 --------------------------------------------------------------------------------
 R0001:C00012------------------------------------------------------------------------------
 ---------------------
 | FINISH            |
 ---------------------

 ********************************************************************************
      WARNINGS / ERRORS / NOTES
      -------------------------
    Simulation ended on 2019-07-25     at 21:37:18
 ================================================================================
```

```
00001> 2     Metric units
00002> *#*****************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date         : 01-17-2011
00005> *#  Updated      : 07-25-2019
00006> *#  Modeller     : [J.Proctor/R.Alexander]
00007> *#  Company      : C.F. Crozier & Associates Inc.
00008> *#  License #    :  3737016
00009> *#*****************************************************************************
00010> *#J:\200\281 ... \2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\ALL_CHI.dat
00011> *#*****************************************************************************
00012> START                TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                    [  ] <--storm filename, one per line for NSTORM time
00014> *%-------------------|-----------------------------------------------------|
00015> *#*****************************************************************************
00016> *#*******************POST-DEVELOPMENT UNCONTROLLED - 2 YEAR Event ***************
00017> *#*****************************************************************************
00018> *
00019> *#   Rainfall Depths per MTO - Basins East of Collingwood
00020> *#              Chicago Rainfall Distribution
00021> *
00022> *#*****************************************************************************
00023> *%-------------------|-----------------------------------------------------|
00024> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00025>                     ICASEcs=[2],
00026>                     Enter ordinates of IDF curve below, at least seven points
00027>                         TIME (min)    Intensity(mm/hr)
00028>                           [5]         [95]
00029>                           [10]        [79]
00030>                           [15]        [62]
00031>                           [30]        [40]
00032>                           [60]        [25]
00033>                           [120]       [14]
00034>                           [360]       [6.1]
00035>                           [720]       [3.3]
00036>                           [1440]      [2.1]
00037>                             -1            -1
00038> *%-------------------|-----------------------------------------------------|
00039> *#-------------------|------------Area 2101 (West Developed Area)---------------|
00040> *%-------------------|-----------------------------------------------------|
00041> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00042>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00043>                     SCS curve number CN=[54],
00044>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00045>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00046>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00047>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00048>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00049> *%-------------------|-----------------------------------------------------|
00050> *#-------------------|------------Area 2102 (Silver Creek Buffer)--------------|
00051> *%-------------------|-----------------------------------------------------|
00052> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00053>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00054>                     N=[3], TP=[1.02]hrs,
00055>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00056> *%-------------------|-----------------------------------------------------|
00057> *#-------------------|------------Area 2103 (East Developed Area)--------------|
00058> *%-------------------|-----------------------------------------------------|
00059> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00060>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00061>                     SCS curve number CN=[74],
00062>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00063>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00064>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00065>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00066>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00067> *%-------------------|-----------------------------------------------------|
00068> *#-------------------|-------------Area 2104 (East Natural Area)-------------|
00069> *%-------------------|-----------------------------------------------------|
00070> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00071>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00072>                     N=[3], TP=[0.74]hrs,
00073>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00074> *%-------------------|-----------------------------------------------------|
00075> *#-------------------|-------------Area 2105 (Central Natural Area)------------|
00076> *%-------------------|-----------------------------------------------------|
00077> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00078>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00079>                     N=[3], TP=[2.35]hrs,
00080>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00081> *%-------------------|-----------------------------------------------------|
00082> *#-------------------|----Post Development Uncontrolled Flow to Silver Creek----|
00083> *%-------------------|-----------------------------------------------------|
00084> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00085> *%-------------------|-----------------------------------------------------|
00086> SAVE HYD            ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00087>                     HYD_COMMENT=["UC-West"]
00088> *%-------------------|-----------------------------------------------------|
00089> *#-------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00090> *%-------------------|-----------------------------------------------------|
00091> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00092> *%-------------------|-----------------------------------------------------|
00093> SAVE HYD            ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00094>                     HYD_COMMENT=["UC-East"]
00095> *%-------------------|-----------------------------------------------------|
00096> *#*****************************************************************************
00097> *#*******************POST-DEVELOPMENT UNCONTROLLED - 5 YEAR Event ***************
00098> *#*****************************************************************************
00099> *
00100> *#   Rainfall Depths per MTO - Basins East of Collingwood
00101> *#              Chicago Rainfall Distribution
00102> *
00103> *#*****************************************************************************
00104> *%-------------------|-----------------------------------------------------|
00105> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00106>                     ICASEcs=[2],
00107>                     Enter ordinates of IDF curve below, at least seven points
00108>                         TIME (min)    Intensity(mm/hr)
00109>                           [5]         [125]
00110>                           [10]        [100]
00111>                           [15]        [82]
00112>                           [30]        [53]
00113>                           [60]        [34]
00114>                           [120]       [19]
00115>                           [360]       [8.4]
00116>                           [720]       [4.6]
00117>                           [1440]      [2.7]
00118>                             -1            -1
00119> *%-------------------|-----------------------------------------------------|
00120> *#-------------------|------------Area 2101 (West Developed Area)---------------|
00121> *%-------------------|-----------------------------------------------------|
00122> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00123>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00124>                     SCS curve number CN=[54],
00125>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00126>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00127>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00128>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00129>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00130> *%-------------------|-----------------------------------------------------|
00131> *#-------------------|------------Area 2102 (Silver Creek Buffer)--------------|
00132> *%-------------------|-----------------------------------------------------|
00133> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00134>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00135>                     N=[3], TP=[1.02]hrs,
00136>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00137> *%-------------------|-----------------------------------------------------|
00138> *#-------------------|------------Area 2103 (East Developed Area)--------------|
00139> *%-------------------|-----------------------------------------------------|
00140> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00141>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00142>                     SCS curve number CN=[74],
00143>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00144>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00145>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00146>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00147>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00148> *%-------------------|-----------------------------------------------------|
00149> *#-------------------|-------------Area 2104 (East Natural Area)-------------|
00150> *%-------------------|-----------------------------------------------------|
00151> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00152>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00153>                     N=[3], TP=[0.74]hrs,
00154>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00155> *%-------------------|-----------------------------------------------------|
00156> *#-------------------|-------------Area 2105 (Central Natural Area)------------|
00157> *%-------------------|-----------------------------------------------------|
00158> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00159>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00160>                     N=[3], TP=[2.35]hrs,
00161>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00162> *%-------------------|-----------------------------------------------------|
00163> *#-------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00164> *%-------------------|-----------------------------------------------------|
00165> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00166> *%-------------------|-----------------------------------------------------|
00167> SAVE HYD            ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00168>                     HYD_COMMENT=["UC-West"]
00169> *%-------------------|-----------------------------------------------------|
00170> *#-------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00171> *%-------------------|-----------------------------------------------------|
00172> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00173> *%-------------------|-----------------------------------------------------|
00174> SAVE HYD            ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00175>                     HYD_COMMENT=["UC-East"]
00176> *%-------------------|-----------------------------------------------------|
00177> *#*****************************************************************************
00178> *#*******************POST-DEVELOPMENT UNCONTROLLED - 10 YEAR Event ***************
00179> *#*****************************************************************************
00180> *
00181> *#   Rainfall Depths per MTO - Basins East of Collingwood
00182> *#              Chicago Rainfall Distribution
00183> *
00184> *#*****************************************************************************
00185> *%-------------------|-----------------------------------------------------|
00186> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00187>                     ICASEcs=[2],
00188>                     Enter ordinates of IDF curve below, at least seven points
00189>                         TIME (min)    Intensity(mm/hr)
00190>                           [5]         [150]
00191>                           [10]        [115]
00192>                           [15]        [95]
00193>                           [30]        [62]
00194>                           [60]        [41]
00195>                           [120]       [23]
00196>                           [360]       [10]
00197>                           [720]       [5.5]
00198>                           [1440]      [3.1]
00199>                             -1            -1
00200> *%-------------------|-----------------------------------------------------|
00201> *#-------------------|------------Area 2101 (West Developed Area)---------------|
00202> *%-------------------|-----------------------------------------------------|
00203> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00204>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00205>                     SCS curve number CN=[54],
00206>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00207>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00208>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00209>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00210>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00211> *%-------------------|-----------------------------------------------------|
00212> *#-------------------|------------Area 2102 (Silver Creek Buffer)--------------|
00213> *%-------------------|-----------------------------------------------------|
00214> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00215>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00216>                     N=[3], TP=[1.02]hrs,
00217>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00218> *%-------------------|-----------------------------------------------------|
00219> *#-------------------|------------Area 2103 (East Developed Area)--------------|
00220> *%-------------------|-----------------------------------------------------|
00221> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00222>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00223>                     SCS curve number CN=[74],
00224>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00225>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00226>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00227>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00228>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00229> *%-------------------|-----------------------------------------------------|
00230> *#-------------------|-------------Area 2104 (East Natural Area)-------------|
00231> *%-------------------|-----------------------------------------------------|
00232> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00233>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00234>                     N=[3], TP=[0.74]hrs,
00235>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00236> *%-------------------|-----------------------------------------------------|
00237> *#-------------------|-------------Area 2105 (Central Natural Area)------------|
00238> *%-------------------|-----------------------------------------------------|
00239> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00240>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00241>                     N=[3], TP=[2.35]hrs,
00242>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00243> *%-------------------|-----------------------------------------------------|
00244> *#-------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00245> *%-------------------|-----------------------------------------------------|
00246> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00247> *%-------------------|-----------------------------------------------------|
00248> SAVE HYD            ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00249>                     HYD_COMMENT=["UC-West"]
00250> *%-------------------|-----------------------------------------------------|
00251> *#-------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00252> *%-------------------|-----------------------------------------------------|
00253> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00254> *%-------------------|-----------------------------------------------------|
00255> SAVE HYD            ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00256>                     HYD_COMMENT=["UC-East"]
00257> *%-------------------|-----------------------------------------------------|
00258> *#*****************************************************************************
00259> *#*******************POST-DEVELOPMENT UNCONTROLLED - 25 YEAR Event ***************
00260> *#*****************************************************************************
00261> *
00262> *#   Rainfall Depths per MTO - Basins East of Collingwood
00263> *#              Chicago Rainfall Distribution
00264> *
00265> *#*****************************************************************************
00266> *%-------------------|-----------------------------------------------------|
00267> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00268>                     ICASEcs=[2],
00269>                     Enter ordinates of IDF curve below, at least seven points
00270>                         TIME (min)    Intensity(mm/hr)
00271>                           [5]         [175]
00272>                           [10]        [130]
00273>                           [15]        [110]
00274>                           [30]        [73]
00275>                           [60]        [49]
00276>                           [120]       [27]
00277>                           [360]       [12]
00278>                           [720]       [6.6]
00279>                           [1440]      [3.6]
00280>                             -1            -1
00281> *%-------------------|-----------------------------------------------------|
00282> *#-------------------|------------Area 2101 (West Developed Area)---------------|
00283> *%-------------------|-----------------------------------------------------|
00284> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00285>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00286>                     SCS curve number CN=[54],
00287>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00288>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00289>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00290>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00291>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00292> *%-------------------|-----------------------------------------------------|
00293> *#-------------------|------------Area 2102 (Silver Creek Buffer)--------------|
00294> *%-------------------|-----------------------------------------------------|
00295> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00296>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00297>                     N=[3], TP=[1.02]hrs,
00298>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00299> *%-------------------|-----------------------------------------------------|
00300> *#-------------------|------------Area 2103 (East Developed Area)--------------|
00301> *%-------------------|-----------------------------------------------------|
00302> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00303>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00304>                     SCS curve number CN=[74],
00305>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00306>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00307>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00308>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
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00309>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00310> *%-----------------|-------------------------------------------------------|
00311> *#-----------------|--------------Area 2104 (East Natural Area)-------------|
00312> *%-----------------|-------------------------------------------------------|
00313> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00314>                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00315>                      N=[3], TP=[0.74]hrs,
00316>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00317> *%-----------------|-------------------------------------------------------|
00318> *#-----------------|----------Area 2105 (Central Natural Area)-------------|
00319> *%-----------------|-------------------------------------------------------|
00320> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00321>                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00322>                      N=[3], TP=[2.35]hrs,
00323>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00324> *%-----------------|-------------------------------------------------------|
00325> *#-----------------|---Post Development Uncontrolled Flow to Silver Creek-----|
00326> *%-----------------|-------------------------------------------------------|
00327> ADD HYD            IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00328> *%-----------------|-------------------------------------------------------|
00329> SAVE HYD           ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00330>                      HYD_COMMENT=["UC-West"]
00331> *%-----------------|-------------------------------------------------------|
00332> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00333> *%-----------------|-------------------------------------------------------|
00334> ADD HYD            IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00335> *%-----------------|-------------------------------------------------------|
00336> SAVE HYD           ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00337>                      HYD_COMMENT=["UC-East"]
00338> *%-----------------|-------------------------------------------------------|
00339> *#*****************************************************************************
00340> *#*****************POST-DEVELOPMENT UNCONTROLLED - 50 YEAR Event ***************
00341> *#*****************************************************************************
00342> *
00343> *#   Rainfall Depths per MTO - Basins East of Collingwood
00344> *#             Chicago Rainfall Distribution
00345> *
00346> *#*****************************************************************************
00347> *%-----------------|-------------------------------------------------------|
00348> CHICAGO STORM      IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00349>                      ICASEcs=[2],
00350>                      Enter ordinates of IDF curve below, at least seven points
00351>                          TIME (min)    Intensity(mm/hr)
00352>                            [5]         [195]
00353>                            [10]        [145]
00354>                            [15]        [125]
00355>                            [30]        [81]
00356>                            [60]        [55]
00357>                            [120]       [30]
00358>                            [360]       [13]
00359>                            [720]       [7.4]
00360>                            [1440]      [4.0]
00361>                               -1            -1
00362> *%-----------------|-------------------------------------------------------|
00363> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00364> *%-----------------|-------------------------------------------------------|
00365> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00366>                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00367>                      SCS curve number CN=[54],
00368>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00369>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00370>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00371>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00372>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00373> *%-----------------|-------------------------------------------------------|
00374> *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00375> *%-----------------|-------------------------------------------------------|
00376> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00377>                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00378>                      N=[3], TP=[1.02]hrs,
00379>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00380> *%-----------------|-------------------------------------------------------|
00381> *#-----------------|------------Area 2103 (East Developed Area)--------------|
00382> *%-----------------|-------------------------------------------------------|
00383> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00384>                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00385>                      SCS curve number CN=[74],
00386>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00387>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00388>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00389>                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
00390>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00391> *%-----------------|-------------------------------------------------------|
00392> *#-----------------|--------------Area 2104 (East Natural Area)-------------|
00393> *%-----------------|-------------------------------------------------------|
00394> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00395>                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00396>                      N=[3], TP=[0.74]hrs,
00397>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00398> *%-----------------|-------------------------------------------------------|
00399> *#-----------------|----------Area 2105 (Central Natural Area)-------------|
00400> *%-----------------|-------------------------------------------------------|
00401> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00402>                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00403>                      N=[3], TP=[2.35]hrs,
00404>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00405> *%-----------------|-------------------------------------------------------|
00406> *#-----------------|---Post Development Uncontrolled Flow to Silver Creek-----|
00407> *%-----------------|-------------------------------------------------------|
00408> ADD HYD            IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00409> *%-----------------|-------------------------------------------------------|
00410> SAVE HYD           ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00411>                      HYD_COMMENT=["UC-West"]
00412> *%-----------------|-------------------------------------------------------|
00413> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00414> *%-----------------|-------------------------------------------------------|
00415> ADD HYD            IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00416> *%-----------------|-------------------------------------------------------|
00417> SAVE HYD           ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00418>                      HYD_COMMENT=["UC-East"]
00419> *%-----------------|-------------------------------------------------------|
00420> *#*****************************************************************************
00421> *#****************POST-DEVELOPMENT UNCONTROLLED - 100 YEAR Event **************
00422> *#*****************************************************************************
00423> *
00424> *#   Rainfall Depths per MTO - Basins East of Collingwood
00425> *#             Chicago Rainfall Distribution
00426> *
00427> *#*****************************************************************************
00428> *%-----------------|-------------------------------------------------------|
00429> CHICAGO STORM      IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00430>                      ICASEcs=[2],
00431>                      Enter ordinates of IDF curve below, at least seven points
00432>                          TIME (min)    Intensity(mm/hr)
00433>                            [5]         [215]
00434>                            [10]        [160]
00435>                            [15]        [135]
00436>                            [30]        [89]
00437>                            [60]        [61]
00438>                            [120]       [33]
00439>                            [360]       [15]
00440>                            [720]       [8.2]
00441>                            [1440]      [4.4]
00442>                               -1            -1
00443> *%-----------------|-------------------------------------------------------|
00444> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00445> *%-----------------|-------------------------------------------------------|
00446> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00447>                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00448>                      SCS curve number CN=[54],
00449>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00450>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00451>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00452>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00453>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00454> *%-----------------|-------------------------------------------------------|
00455> *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00456> *%-----------------|-------------------------------------------------------|
00457> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00458>                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00459>                      N=[3], TP=[1.02]hrs,
00460>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00461> *%-----------------|-------------------------------------------------------|
00462> *#-----------------|------------Area 2103 (East Developed Area)--------------|
00463> *%-----------------|-------------------------------------------------------|
00464> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00465>                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00466>                      SCS curve number CN=[74],
00467>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00468>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00469>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00470>                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
00471>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00472> *%-----------------|-------------------------------------------------------|
00473> *#-----------------|--------------Area 2104 (East Natural Area)-------------|
00474> *%-----------------|-------------------------------------------------------|
00475> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00476>                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00477>                      N=[3], TP=[0.74]hrs,
00478>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00479> *%-----------------|-------------------------------------------------------|
00480> *#-----------------|----------Area 2105 (Central Natural Area)-------------|
00481> *%-----------------|-------------------------------------------------------|
00482> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00483>                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00484>                      N=[3], TP=[2.35]hrs,
00485>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00486> *%-----------------|-------------------------------------------------------|
00487> *#-----------------|---Post Development Uncontrolled Flow to Silver Creek-----|
00488> *%-----------------|-------------------------------------------------------|
00489> ADD HYD            IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00490> *%-----------------|-------------------------------------------------------|
00491> SAVE HYD           ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00492>                      HYD_COMMENT=["UC-West"]
00493> *%-----------------|-------------------------------------------------------|
00494> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00495> *%-----------------|-------------------------------------------------------|
00496> ADD HYD            IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00497> *%-----------------|-------------------------------------------------------|
00498> SAVE HYD           ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00499>                      HYD_COMMENT=["UC-East"]
00500> *%-----------------|-------------------------------------------------------|
00501> FINISH
00502>
00503>
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00001>  ================================================================================
00002>
00003>  SSSSS   W   W   M   M   H   H   Y   Y   M   M     OOO          222     000    11   77777 ========
00004>  S       W W W   MM MM   H   H    Y Y    MM MM    O   O           2   0   0  1 1       7  ========
00005>  SSSSS   W W W   M M M   HHHHH     Y     M M M    O   O           2   0   0    1      7  Ver4.05.0
00006>      S    W W    M   M   H   H     Y     M   M    O   O         222   0   0  1 1     7   APR 2017
00007>  SSSSS    W W    M   M   H   H     Y     M   M     OOO          2     0   0    1     7    ========
00008>                                                                 2     0   0  1 1     7    # 3737016
00009>         StormWater Management HYdrologic Model                  222    000    11     7    ========
00010>
00011>  ********************************************************************************************
00012>  ***************************************  SWMHYMO Ver4.05.0  ***************************************
00013>  ******************  A single event and continuous hydrologic simulation model  ******************
00014>  ******************      based on the principles of HYMO and its successors      ******************
00015>  ******************                  OTTHYMO-83 and OTTHYMO-89.                  ******************
00016>  ********************************************************************************************
00017>  ****************** Distributed by:  J.F. Sabourin and Associates Inc.           ******************
00018>  ******************                  Ottawa, Ontario: (613) 836-3884             ******************
00019>  ******************                  Gatineau, Quebec: (819) 243-6858            ******************
00020>  ******************                  E-Mail: swmhymo@jfsa.com                    ******************
00021>  ********************************************************************************************
00022>
00023>  ********************************************************************************************
00024>  ****************** Licensed user: C.F. Crozier & Associates Inc.      ******************
00025>  ******************                 Collingwood          SERIAL#:3737016      ******************
00026>  ********************************************************************************************
00027>
00028>  ********************************************************************************
00029>  ****************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ****************
00030>  ****************                Maximum value for ID numbers  :    11           ****************
00031>  ****************                Max. number of rainfall points: 105408          ****************
00032>  ****************                Max. number of flow points    : 105408          ****************
00033>  ********************************************************************************
00034>
00035>
00036>  ******************************   S U M M A R Y   O U T P U T   ******************************
00037>  ********************************************************************************
00038>  *                 RUN DATE: 2019-07-25     TIME: 21:34:38     RUN COUNTER: 000004             *
00039>  ********************************************************************************
00040>  * Input  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00041>  *                 HYMO\UC\ALL_CHI.dat                                                          *
00042>  * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00043>  *                 HYMO\UC\ALL_CHI.out                                                          *
00044>  * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00045>  *                 HYMO\UC\ALL_CHI.sum                                                          *
00046>  * User comments:                                                                             *
00047>  * 1:_____________________________________________________________________________________*
00048>  * 2:_____________________________________________________________________________________*
00049>  * 3:_____________________________________________________________________________________*
00050>  ********************************************************************************
00051>
00052>
00053> #*************************************************************************
00054> #  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00055> #  Date       : 01-17-2011
00056> #  Updated    : 07-25-2019
00057> #  Modeller   : [J.Proctor/R.Alexander]
00058> #  Company    : C.F. Crozier & Associates Inc.
00059> #  License #  :  3737016
00060> #*************************************************************************
00061> #J:\200\281 ... \2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\ALL_CHI.dat
00062> #*************************************************************************
00063>  RUN#:COMMAND#
00064> R0001:C00001-----------------------------------------------------------------------------
00065>      START
00066>        [TZERO =    .00 hrs on       0]
00067>        [METOUT=   2    (1=imperial, 2=metric output)]
00068>        [NSTORM=   0 ]
00069>        [NRUN  = 0001 ]
00070> #*************************************************************************
00071> #*****************POST-DEVELOPMENT UNCONTROLLED - 2 YEAR Event ***************
00072> #*************************************************************************
00073> #   Rainfall Depths per MTO - Basins East of Collingwood
00074> #             Chicago Rainfall Distribution
00075> #*************************************************************************
00076> R0001:C00002-----------------------------------------------------------------------------
00077>      CHICAGO STORM
00078>        [SDT= 5.00:SDUR=   4.00:PTOT=  33.82]
00079>        {A/B/C= 793.404/   7.539/    .824: R=.9996}
00080> #-----------------|-----------Area 2101 (West Developed Area)---------------|
00081> R0001:C00003-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00082>      CALIB STANDHYD         1.0 01:2101          10.00     .684 No_date    1:21   13.01 .385     .000
00083>        [XIMP=.30:TIMP=.50]
00084>        [LOSS= 2 :CN= 54.0]
00085>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00086>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00087> #-----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
00088> R0001:C00004-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00089>      CALIB NASHYD           5.0 02:2102           6.90     .020 No_date    2:50    2.93 .087     .000
00090>        [CN= 52.8: N= 3.00: Tp= 1.02]
00091> #-----------------|-----------Area 2103 (East Developed Area)---------------|
00092> R0001:C00005-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00093>      CALIB STANDHYD         1.0 03:2103           1.70     .131 No_date    1:25   19.63 .581     .000
00094>        [XIMP=.40:TIMP=.65]
00095>        [LOSS= 2 :CN= 74.0]
00096>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00097>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00098> #-----------------|-----------Area 2104 (East Natural Area)--------------|
00099> R0001:C00006-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00100>      CALIB NASHYD           5.0 04:2104          10.90     .042 No_date    2:30    3.19 .094     .000
00101>        [CN= 61.6: N= 3.00: Tp=  .74]
00102> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00103> R0001:C00007-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00104>      CALIB NASHYD           5.0 05:2105          21.50     .032 No_date    4:35    2.60 .077     .000
00105>        [CN= 53.9: N= 3.00: Tp= 2.35]
00106> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00107> R0001:C00008-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00108>      ADD HYD                1.0 01:2101          10.00     .684 No_date    1:21   13.01  n/a     .000
00109>                       +     5.0 02:2102           6.90     .020 No_date    2:50    2.93  n/a     .000
00110>                     SUM=    1.0 06:UC-West       16.90     .684 No_date    1:21    8.90  n/a     .000
00111> R0001:C00009-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00112>      SAVE HYD               1.0 06:UC-West       16.90     .684 No_date    1:21    8.90  n/a     .000
00113>        fname :UC-West.0001
00114>        remark:UC-West
00115> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00116> R0001:C00010-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00117>      ADD HYD                1.0 03:2103           1.70     .131 No_date    1:25   19.63  n/a     .000
00118>                       +     5.0 04:2104          10.90     .042 No_date    2:30    3.19  n/a     .000
00119>                       +     5.0 05:2105          21.50     .032 No_date    4:35    2.60  n/a     .000
00120>                     SUM=    1.0 07:UC-East       34.10     .133 No_date    1:25    3.64  n/a     .000
00121> R0001:C00011-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00122>      SAVE HYD               1.0 07:UC-East       34.10     .133 No_date    1:25    3.64  n/a     .000
00123>        fname :UC-East.0001
00124>        remark:UC-East
00125> #*************************************************************************
00126> #*****************POST-DEVELOPMENT UNCONTROLLED - 5 YEAR Event ***************
00127> #*************************************************************************
00128> #   Rainfall Depths per MTO - Basins East of Collingwood
00129> #             Chicago Rainfall Distribution
00130> #*************************************************************************
00131> R0001:C00012-----------------------------------------------------------------------------
00132>      CHICAGO STORM
00133>        [SDT= 5.00:SDUR=   4.00:PTOT=  45.85]
00134>        {A/B/C=1142.331/   9.025/    .834: R=.9999}
00135> #-----------------|-----------Area 2101 (West Developed Area)---------------|
00136> R0001:C00013-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00137>      CALIB STANDHYD         1.0 01:2101          10.00     .935 No_date    1:21   19.51 .426     .000
00138>        [XIMP=.30:TIMP=.50]
00139>        [LOSS= 2 :CN= 54.0]
00140>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00141>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00142> #-----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
00143> R0001:C00014-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00144>      CALIB NASHYD           5.0 02:2102           6.90     .042 No_date    2:45    5.81 .127     .000
00145>        [CN= 52.8: N= 3.00: Tp= 1.02]
00146> #-----------------|-----------Area 2103 (East Developed Area)---------------|
00147> R0001:C00015-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00148>      CALIB STANDHYD         1.0 03:2103           1.70     .199 No_date    1:25   29.18 .636     .000
00149>        [XIMP=.40:TIMP=.65]
00150>        [LOSS= 2 :CN= 74.0]
00151>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00152>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00153> #-----------------|-----------Area 2104 (East Natural Area)--------------|
00154> R0001:C00016-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00155>      CALIB NASHYD           5.0 04:2104          10.90     .092 No_date    2:25    6.72 .147     .000
00156>        [CN= 61.6: N= 3.00: Tp=  .74]
00157> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00158> R0001:C00017-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00159>      CALIB NASHYD           5.0 05:2105          21.50     .067 No_date    4:30    5.43 .118     .000
00160>        [CN= 53.9: N= 3.00: Tp= 2.35]
00161> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00162> R0001:C00018-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00163>      ADD HYD                1.0 01:2101          10.00     .935 No_date    1:21   19.51  n/a     .000
00164>                       +     5.0 02:2102           6.90     .042 No_date    2:45    5.81  n/a     .000
00165>                     SUM=    1.0 06:UC-West       16.90     .936 No_date    1:21   13.92  n/a     .000
00166> R0001:C00019-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00167>      SAVE HYD               1.0 06:UC-West       16.90     .936 No_date    1:21   13.92  n/a     .000
00168>        fname :UC-West.0001
00169>        remark:UC-West
00170> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00171> R0001:C00020-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00172>      ADD HYD                1.0 03:2103           1.70     .199 No_date    1:25   29.18  n/a     .000
00173>                       +     5.0 04:2104          10.90     .092 No_date    2:25    6.72  n/a     .000
00174>                       +     5.0 05:2105          21.50     .067 No_date    4:30    5.43  n/a     .000
00175>                     SUM=    1.0 07:UC-East       34.10     .206 No_date    1:26    7.02  n/a     .000
00176> R0001:C00021-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00177>      SAVE HYD               1.0 07:UC-East       34.10     .206 No_date    1:26    7.02  n/a     .000
00178>        fname :UC-East.0001
00179>        remark:UC-East
00180> #*************************************************************************
00181> #*****************POST-DEVELOPMENT UNCONTROLLED - 10 YEAR Event ***************
00182> #*************************************************************************
00183> #   Rainfall Depths per MTO - Basins East of Collingwood
00184> #             Chicago Rainfall Distribution
00185> #*************************************************************************
00186> R0001:C00022-----------------------------------------------------------------------------
00187>      CHICAGO STORM
00188>        [SDT= 5.00:SDUR=   4.00:PTOT=  54.36]
00189>        {A/B/C=1362.588/   9.188/    .835: R=.9999}
00190> #-----------------|-----------Area 2101 (West Developed Area)---------------|
00191> R0001:C00023-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00192>      CALIB STANDHYD         1.0 01:2101          10.00    1.160 No_date    1:21   24.50 .451     .000
00193>        [XIMP=.30:TIMP=.50]
00194>        [LOSS= 2 :CN= 54.0]
00195>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00196>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00197> #-----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
00198> R0001:C00024-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00199>      CALIB NASHYD           5.0 02:2102           6.90     .060 No_date    2:45    8.33 .153     .000
00200>        [CN= 52.8: N= 3.00: Tp= 1.02]
00201> #-----------------|-----------Area 2103 (East Developed Area)---------------|
00202> R0001:C00025-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00203>      CALIB STANDHYD         1.0 03:2103           1.70     .253 No_date    1:24   36.29 .668     .000
00204>        [XIMP=.40:TIMP=.65]
00205>        [LOSS= 2 :CN= 74.0]
00206>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00207>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00208> #-----------------|-----------Area 2104 (East Natural Area)--------------|
00209> R0001:C00026-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00210>      CALIB NASHYD           5.0 04:2104          10.90     .137 No_date    2:25    9.83 .181     .000
00211>        [CN= 61.6: N= 3.00: Tp=  .74]
00212> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00213> R0001:C00027-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00214>      CALIB NASHYD           5.0 05:2105          21.50     .098 No_date    4:25    7.93 .146     .000
00215>        [CN= 53.9: N= 3.00: Tp= 2.35]
00216> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00217> R0001:C00028-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00218>      ADD HYD                1.0 01:2101          10.00    1.160 No_date    1:21   24.50  n/a     .000
00219>                       +     5.0 02:2102           6.90     .060 No_date    2:45    8.33  n/a     .000
00220>                     SUM=    1.0 06:UC-West       16.90    1.161 No_date    1:21   17.90  n/a     .000
00221> R0001:C00029-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00222>      SAVE HYD               1.0 06:UC-West       16.90    1.161 No_date    1:21   17.90  n/a     .000
00223>        fname :UC-West.0001
00224>        remark:UC-West
00225> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00226> R0001:C00030-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00227>      ADD HYD                1.0 03:2103           1.70     .253 No_date    1:24   36.29  n/a     .000
00228>                       +     5.0 04:2104          10.90     .137 No_date    2:25    9.83  n/a     .000
00229>                       +     5.0 05:2105          21.50     .098 No_date    4:25    7.93  n/a     .000
00230>                     SUM=    1.0 07:UC-East       34.10     .266 No_date    1:26    9.95  n/a     .000
00231> R0001:C00031-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00232>      SAVE HYD               1.0 07:UC-East       34.10     .266 No_date    1:26    9.95  n/a     .000
00233>        fname :UC-East.0001
00234>        remark:UC-East
00235> #*************************************************************************
00236> #*****************POST-DEVELOPMENT UNCONTROLLED - 25 YEAR Event ***************
00237> #*************************************************************************
00238> #   Rainfall Depths per MTO - Basins East of Collingwood
00239> #             Chicago Rainfall Distribution
00240> #*************************************************************************
00241> R0001:C00032-----------------------------------------------------------------------------
00242>      CHICAGO STORM
00243>        [SDT= 5.00:SDUR=   4.00:PTOT=  64.48]
00244>        {A/B/C=1706.133/  10.500/    .844: R=.9998}
00245> #-----------------|-----------Area 2101 (West Developed Area)---------------|
00246> R0001:C00033-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00247>      CALIB STANDHYD         1.0 01:2101          10.00    1.393 No_date    1:21   30.80 .478     .000
00248>        [XIMP=.30:TIMP=.50]
00249>        [LOSS= 2 :CN= 54.0]
00250>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00251>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00252> #-----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
00253> R0001:C00034-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00254>      CALIB NASHYD           5.0 02:2102           6.90     .086 No_date    2:45   11.79 .183     .000
00255>        [CN= 52.8: N= 3.00: Tp= 1.02]
00256> #-----------------|-----------Area 2103 (East Developed Area)---------------|
00257> R0001:C00035-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00258>      CALIB STANDHYD         1.0 03:2103           1.70     .319 No_date    1:25   45.01 .698     .000
00259>        [XIMP=.40:TIMP=.65]
00260>        [LOSS= 2 :CN= 74.0]
00261>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00262>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00263> #-----------------|-----------Area 2104 (East Natural Area)--------------|
00264> R0001:C00036-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00265>      CALIB NASHYD           5.0 04:2104          10.90     .201 No_date    2:20   14.08 .218     .000
00266>        [CN= 61.6: N= 3.00: Tp=  .74]
00267> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00268> R0001:C00037-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00269>      CALIB NASHYD           5.0 05:2105          21.50     .141 No_date    4:25   11.40 .177     .000
00270>        [CN= 53.9: N= 3.00: Tp= 2.35]
00271> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00272> R0001:C00038-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00273>      ADD HYD                1.0 01:2101          10.00    1.393 No_date    1:21   30.80  n/a     .000
00274>                       +     5.0 02:2102           6.90     .086 No_date    2:45   11.79  n/a     .000
00275>                     SUM=    1.0 06:UC-West       16.90    1.396 No_date    1:21   23.04  n/a     .000
00276> R0001:C00039-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00277>      SAVE HYD               1.0 06:UC-West       16.90    1.396 No_date    1:21   23.04  n/a     .000
00278>        fname :UC-West.0001
00279>        remark:UC-West
00280> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00281> R0001:C00040-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00282>      ADD HYD                1.0 03:2103           1.70     .319 No_date    1:25   45.01  n/a     .000
00283>                       +     5.0 04:2104          10.90     .201 No_date    2:20   14.08  n/a     .000
00284>                       +     5.0 05:2105          21.50     .141 No_date    4:25   11.40  n/a     .000
00285>                     SUM=    1.0 07:UC-East       34.10     .340 No_date    1:26   13.93  n/a     .000
00286> R0001:C00041-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00287>      SAVE HYD               1.0 07:UC-East       34.10     .340 No_date    1:26   13.93  n/a     .000
00288>        fname :UC-East.0001
00289>        remark:UC-East
00290> #*************************************************************************
00291> #*****************POST-DEVELOPMENT UNCONTROLLED - 50 YEAR Event ***************
00292> #*************************************************************************
00293> #   Rainfall Depths per MTO - Basins East of Collingwood
00294> #             Chicago Rainfall Distribution
00295> #*************************************************************************
00296> R0001:C00042-----------------------------------------------------------------------------
00297>      CHICAGO STORM
00298>        [SDT= 5.00:SDUR=   4.00:PTOT=  71.55]
00299>        {A/B/C=1924.754/  10.500/    .847: R=.9998}
00300> #-----------------|-----------Area 2101 (West Developed Area)---------------|
00301> R0001:C00043-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00302>      CALIB STANDHYD         1.0 01:2101          10.00    1.623 No_date    1:20   35.40 .495     .000
00303>        [XIMP=.30:TIMP=.50]
00304>        [LOSS= 2 :CN= 54.0]
00305>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00306>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00307> #-----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
00308> R0001:C00044-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
00309>     CALIB NASHYD           5.0 02:2102           6.90     .106 No_date    2:40   14.49 .202     .000
00310>       [CN= 52.8: N= 3.00: Tp= 1.02]
00311> #-----------------|-------------Area 2103 (East Developed Area)---------------|
00312> R0001:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00313>     CALIB STANDHYD         1.0 03:2103           1.70     .371 No_date    1:25   51.24 .716     .000
00314>       [XIMP=.40:TIMP=.65]
00315>       [LOSS= 2 :CN= 74.0]
00316>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00317>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00318> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00319> R0001:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00320>     CALIB NASHYD           5.0 04:2104          10.90     .251 No_date    2:20   17.37 .243     .000
00321>       [CN= 61.6: N= 3.00: Tp=  .74]
00322> #-----------------|-----------Area 2105 (Central Natural Area)------------|
00323> R0001:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00324>     CALIB NASHYD           5.0 05:2105          21.50     .174 No_date    4:25   14.10 .197     .000
00325>       [CN= 53.9: N= 3.00: Tp= 2.35]
00326> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00327> R0001:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00328>     ADD HYD                1.0 01:2101          10.00    1.623 No_date    1:20   35.40  n/a     .000
00329>                      +     5.0 02:2102           6.90     .106 No_date    2:40   14.49  n/a     .000
00330>                    SUM=    1.0 06:UC-West       16.90    1.625 No_date    1:20   26.86  n/a     .000
00331> R0001:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00332>     SAVE HYD               1.0 06:UC-West       16.90    1.625 No_date    1:20   26.86  n/a     .000
00333>       fname :UC-West.0001
00334>       remark:UC-West
00335> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00336> R0001:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00337>     ADD HYD                1.0 03:2103           1.70     .371 No_date    1:25   51.24  n/a     .000
00338>                      +     5.0 04:2104          10.90     .251 No_date    2:20   17.37  n/a     .000
00339>                      +     5.0 05:2105          21.50     .174 No_date    4:25   14.10  n/a     .000
00340>                    SUM=    1.0 07:UC-East       34.10     .399 No_date    1:27   17.00  n/a     .000
00341> R0001:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00342>     SAVE HYD               1.0 07:UC-East       34.10     .399 No_date    1:27   17.00  n/a     .000
00343>       fname :UC-East.0001
00344>       remark:UC-East
00345> #*****************************************************************************
00346> #****************POST-DEVELOPMENT UNCONTROLLED - 100 YEAR Event ***************
00347> #*****************************************************************************
00348> #   Rainfall Depths per MTO - Basins East of Collingwood
00349> #              Chicago Rainfall Distribution
00350> #*****************************************************************************
00351> R0001:C00052-----------------------------------------------------------------------------------------------
00352>     CHICAGO STORM
00353>       [SDT= 5.00:SDUR=   4.00:PTOT=  79.80]
00354>       {A/B/C=2088.320/  10.500/    .842: R=.9996}
00355> #-----------------|-----------Area 2101 (West Developed Area)---------------|
00356> R0001:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00357>     CALIB STANDHYD         1.0 01:2101          10.00    1.838 No_date    1:20   40.97 .513     .000
00358>       [XIMP=.30:TIMP=.50]
00359>       [LOSS= 2 :CN= 54.0]
00360>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00361>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00362> #-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00363> R0001:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00364>     CALIB NASHYD           5.0 02:2102           6.90     .131 No_date    2:40   17.89 .224     .000
00365>       [CN= 52.8: N= 3.00: Tp= 1.02]
00366> #-----------------|-------------Area 2103 (East Developed Area)---------------|
00367> R0001:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00368>     CALIB STANDHYD         1.0 03:2103           1.70     .428 No_date    1:25   58.63 .735     .000
00369>       [XIMP=.40:TIMP=.65]
00370>       [LOSS= 2 :CN= 74.0]
00371>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00372>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00373> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00374> R0001:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00375>     CALIB NASHYD           5.0 04:2104          10.90     .311 No_date    2:20   21.51 .270     .000
00376>       [CN= 61.6: N= 3.00: Tp=  .74]
00377> #-----------------|-----------Area 2105 (Central Natural Area)------------|
00378> R0001:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00379>     CALIB NASHYD           5.0 05:2105          21.50     .217 No_date    4:25   17.53 .220     .000
00380>       [CN= 53.9: N= 3.00: Tp= 2.35]
00381> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00382> R0001:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00383>     ADD HYD                1.0 01:2101          10.00    1.838 No_date    1:20   40.97  n/a     .000
00384>                      +     5.0 02:2102           6.90     .131 No_date    2:40   17.89  n/a     .000
00385>                    SUM=    1.0 06:UC-West       16.90    1.841 No_date    1:20   31.55  n/a     .000
00386> R0001:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00387>     SAVE HYD               1.0 06:UC-West       16.90    1.841 No_date    1:20   31.55  n/a     .000
00388>       fname :UC-West.0001
00389>       remark:UC-West
00390> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00391> R0001:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00392>     ADD HYD                1.0 03:2103           1.70     .428 No_date    1:25   58.63  n/a     .000
00393>                      +     5.0 04:2104          10.90     .311 No_date    2:20   21.51  n/a     .000
00394>                      +     5.0 05:2105          21.50     .217 No_date    4:25   17.53  n/a     .000
00395>                    SUM=    1.0 07:UC-East       34.10     .463 No_date    1:26   20.85  n/a     .000
00396> R0001:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00397>     SAVE HYD               1.0 07:UC-East       34.10     .463 No_date    1:26   20.85  n/a     .000
00398>       fname :UC-East.0001
00399>       remark:UC-East
00400> R0001:C00062-----------------------------------------------------------------------------------------------
00401>     FINISH
00402> -----------------------------------------------------------------------------------------------------------
00403> ***********************************************************************************************************
00404>      WARNINGS / ERRORS / NOTES
00405>      -------------------------
00406>    Simulation ended on 2019-07-25     at 21:34:38
00407> ===========================================================================================================
00408>
```

```
 ================================================================================
 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
 S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2     0   0   11     7   7
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2     0   0   11       7  Ver4.05.0
     S   W W     M   M   H   H     Y     M   M   O   O        222     0   0   11       7  APR 2017
 SSSSS   W W     M   M   H   H     Y     M   M    OOO         2       0   0   11     7    # 3737016
                                                              2       0   0   11     7    ========
       StormWater Management HYdrologic Model                 222     000    11     7    ========

 ********************************************************************************
 ***************************************  SWMHYMO Ver4.05.0  ***********************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************      based on the principles of HYMO and its successors      ******************
 ******************                  OTTHYMO-83 and OTTHYMO-89.                  ******************
 ********************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.           ******************
 ******************                  Ottawa,  Ontario: (613) 836-3884            ******************
 ******************                  Gatineau, Quebec: (819) 243-6858            ******************
 ******************                  E-Mail: swmhymo@jfsa.com                    ******************
 ********************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.                ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016         ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ********************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++             ******************
 ******************           Maximum value for ID numbers  :    11             ******************
 ******************           Max. number of rainfall points: 105408            ******************
 ******************           Max. number of flow points    : 105408            ******************
 ********************************************************************************

 ***************************************  SWMHYMO Ver4.05.0  ***********************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************      based on the principles of HYMO and its successors      ******************
 ******************                  OTTHYMO-83 and OTTHYMO-89.                  ******************
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 ******************                  E-Mail: swmhymo@jfsa.com                    ******************
 ********************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.                ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016         ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ********************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++             ******************
 ******************           Maximum value for ID numbers  :    11             ******************
 ******************           Max. number of rainfall points: 105408            ******************
 ******************           Max. number of flow points    : 105408            ******************
 ********************************************************************************



 ******************************  D E T A I L E D   O U T P U T  ******************************
 ********************************************************************************
 *                  RUN DATE: 2019-07-25       TIME: 21:34:38     RUN COUNTER: 000004          *
 ********************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\UC\ALL_CHI.dat                                                *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\UC\ALL_CHI.out                                                *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *               HYMO\UC\ALL_CHI.sum                                                *
 * User comments:                                                                   *
 * 1:_____________________________________________________________________________*
 * 2:_____________________________________________________________________________*
 * 3:_____________________________________________________________________________*
 ********************************************************************************

--------------------------------------------------------------------------------
R0001:C00001------------------------------------------------------------------------
*#*****************************************************************************
*#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
*#  Date        : 01-17-2011
*#  Updated     : 07-25-2019
*#  Modeller    : [J.Proctor/R.Alexander]
*#  Company     : C.F. Crozier & Associates Inc.
*#  License #   :  3737016
*#*****************************************************************************
*#J:\200\281 ... \2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\ALL_CHI.dat
*#*****************************************************************************
--------------------------------------------------------------------------------
| START             | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
-------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
    TZERO =   .00 hrs on       0
    METOUT=   2 (output = METRIC)
    NRUN  = 0001
    NSTORM=   0
--------------------------------------------------------------------------------
R0001:C00002------------------------------------------------------------------------
*#*****************************************************************************
*#******************POST-DEVELOPMENT UNCONTROLLED - 2 YEAR Event ***************
*#*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             Chicago Rainfall Distribution
*
*#*****************************************************************************
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 793.404
| Ptotal= 33.82 mm |                          B=   7.539
--------------------                          C=    .824
                         used in:   INTENSITY =  A / (t + B)^C

                         Duration of storm  =  4.00 hrs
                         Storm time step    =  5.00 min
                         Time to peak ratio =   .33

                    The CORRELATION coefficient is = .9995845

                      TIME        ENTERED             COMPUTED
                     (min)        (mm/hr)              (mm/hr)
                        5.          95.00               98.75
                       10.          79.00               74.89
                       15.          62.00               61.91
                       30.          40.00               40.01
                       60.          25.00               24.66
                      120.          14.00               14.60
                      360.           6.10                6.10
                      720.           3.30                3.48
                     1440.           2.10                1.97

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       0:05   1.822|   0:45   3.837|   1:25  46.015|   2:05   5.750|   2:45   3.066|   3:25   2.127
       0:10   1.944|   0:50   4.499|   1:30  25.872|   2:10   5.171|   2:50   2.902|   3:30   2.051
       0:15   2.086|   0:55   5.453|   1:35  17.562|   2:15   4.700|   2:55   2.756|   3:35   1.980
       0:20   2.251|   1:00   6.943|   1:40  13.162|   2:20   4.310|   3:00   2.624|   3:40   1.914
       0:25   2.448|   1:05   9.575|   1:45  10.482|   2:25   3.982|   3:05   2.505|   3:45   1.853
       0:30   2.686|   1:10  15.343|   1:50   8.695|   2:30   3.703|   3:10   2.398|   3:50   1.796
       0:35   2.980|   1:15  35.921|   1:55   7.425|   2:35   3.461|   3:15   2.299|   3:55   1.743
       0:40   3.351|   1:20  98.747|   2:00   6.480|   2:40   3.251|   3:20   2.210|   4:00   1.693

--------------------------------------------------------------------------------
R0001:C00003------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)---------------|
--------------------
| CALIB STANDHYD         |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
--------------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      5.00         5.00
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=       .50         2.00
     Length            (m)=    100.00        35.00
     Mannings n            =      .013         .150

     Max.eff.Inten.(mm/hr)=     98.75        10.91
                   over (min)       3.00        15.00
     Storage Coeff.  (min)=       3.16 (ii)   14.79 (ii)
     Unit Hyd. Tpeak (min)=       3.00        15.00
     Unit Hyd. peak  (cms)=        .36          .08

                                                      *TOTALS*
     PEAK FLOW       (cms)=        .67          .09          .684 (iii)
     TIME TO PEAK    (hrs)=       1.35         1.63         1.350
     RUNOFF VOLUME    (mm)=      31.82         4.95        13.011
     TOTAL RAINFALL   (mm)=      33.82        33.82        33.819
     RUNOFF COEFFICIENT   =        .94          .15          .385

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

--------------------------------------------------------------------------------
R0001:C00004------------------------------------------------------------------------
*#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
--------------------
| CALIB NASHYD           |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
-------------------------  U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=     .258

     PEAK FLOW       (cms)=     .020 (i)
     TIME TO PEAK    (hrs)=    2.833
     DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
     AVERAGE FLOW    (cms)=     .005
     RUNOFF VOLUME    (mm)=    2.934
     TOTAL RAINFALL   (mm)=   33.819
     RUNOFF COEFFICIENT   =     .087

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

--------------------------------------------------------------------------------
R0001:C00005------------------------------------------------------------------------
*#-----------------|-----------Area 2103 (East Developed Area)---------------|
--------------------
| CALIB STANDHYD         |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
--------------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.10          .60
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=       .50         2.00
     Length            (m)=    295.00        35.00
     Mannings n            =      .013         .150

     Max.eff.Inten.(mm/hr)=     89.96        34.47
                   over (min)       6.00        14.00
     Storage Coeff.  (min)=       6.28 (ii)   13.62 (ii)
     Unit Hyd. Tpeak (min)=       6.00        14.00
     Unit Hyd. peak  (cms)=        .18          .08

                                                      *TOTALS*
     PEAK FLOW       (cms)=        .11          .03          .131 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.60         1.417
     RUNOFF VOLUME    (mm)=      31.82        11.51        19.634
     TOTAL RAINFALL   (mm)=      33.82        33.82        33.819
     RUNOFF COEFFICIENT   =        .94          .34          .581

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.

--------------------------------------------------------------------------------
R0001:C00006------------------------------------------------------------------------
*#-----------------|-------------Area 2104 (East Natural Area)-------------|
--------------------
| CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
-------------------------  U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=     .563

     PEAK FLOW       (cms)=     .042 (i)
     TIME TO PEAK    (hrs)=    2.500
     DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
     AVERAGE FLOW    (cms)=     .011
     RUNOFF VOLUME    (mm)=    3.188
     TOTAL RAINFALL   (mm)=   33.819
     RUNOFF COEFFICIENT   =     .094

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

--------------------------------------------------------------------------------
R0001:C00007------------------------------------------------------------------------
*#-----------------|----------Area 2105 (Central Natural Area)------------|
--------------------
| CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
-------------------------  U.H. Tp(hrs)=    2.350

     Unit Hyd Qpeak  (cms)=     .349

     PEAK FLOW       (cms)=     .032 (i)
     TIME TO PEAK    (hrs)=    4.583
     DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
     AVERAGE FLOW    (cms)=     .008
     RUNOFF VOLUME    (mm)=    2.603
     TOTAL RAINFALL   (mm)=   33.819
     RUNOFF COEFFICIENT   =     .077

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

--------------------------------------------------------------------------------
R0001:C00008------------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
--------------------
| ADD HYD            |
| 06:UC-West         |    ID:NHYD            AREA      QPEAK    TPEAK      R.V.      DWF
---------------------                          (ha)      (cms)    (hrs)      (mm)    (cms)
                        ID 1 01:2101          10.000      .684    1.350    13.011     .000
                       +ID 2 02:2102           6.900      .020    2.833     2.934     .000
                       ================================================================
                       SUM   06:UC-West       16.900      .684    1.350     8.897     .000

  NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
R0001:C00009------------------------------------------------------------------------
--------------------
| SAVE HYD       |   AREA       (ha)=   16.900
| ID=06:UC-West  |   QPEAK      (cms)=    .684 (i)
| DT= 1.00 PCYC=1 |  TPEAK      (hrs)=   1.350
--------------------  VOLUME      (mm)=   8.897
  Filename: UC-West.0001
  Comments: UC-West

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

--------------------------------------------------------------------------------
R0001:C00010------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
--------------------
| ADD HYD            |
| 07:UC-East         |    ID:NHYD            AREA      QPEAK    TPEAK      R.V.      DWF
---------------------                          (ha)      (cms)    (hrs)      (mm)    (cms)
                        ID 1 03:2103           1.700      .131    1.417    19.634     .000
                       +ID 2 04:2104          10.900      .042    2.500     3.188     .000
                       +ID 3 05:2105          21.500      .032    4.583     2.603     .000
                       ================================================================
                       SUM   07:UC-East       34.100      .133    1.417     3.639     .000

  NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
R0001:C00011------------------------------------------------------------------------
--------------------
| SAVE HYD       |   AREA       (ha)=   34.100
| ID=07:UC-East  |   QPEAK      (cms)=    .133 (i)
| DT= 1.00 PCYC=1 |  TPEAK      (hrs)=   1.417
--------------------  VOLUME      (mm)=   3.639
```

```
   Filename: UC-East.0001
   Comments: UC-East

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

R0001:C00012
*#*****************************************************************************
*#******************POST-DEVELOPMENT UNCONTROLLED - 5 YEAR Event ***************
*#*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#            Chicago Rainfall Distribution
*
*#*****************************************************************************
--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1142.331
| Ptotal= 45.85 mm |                          B=    9.025
--------------------                          C=    .834
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =   .33

                     The CORRELATION coefficient is = .9998649

                      TIME        ENTERED             COMPUTED
                     (min)        (mm/hr)              (mm/hr)
                        5.         125.00               126.26
                       10.         100.00                97.91
                       15.          82.00                80.60
                       30.          53.00                53.78
                       60.          34.00                33.42
                      120.          19.00                19.84
                      360.           8.40                 8.26
                      720.           4.60                 4.68
                     1440.           2.70                 2.64

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:05   2.417|   0:45   5.236|   1:25  63.053|   2:05   7.964|   2:45   4.147|   3:25   2.837
      0:10   2.585|   0:50   6.176|   1:30  36.365|   2:10   7.135|   2:50   3.917|   3:30   2.731
      0:15   2.780|   0:55   7.538|   1:35  24.820|   2:15   6.463|   2:55   3.712|   3:35   2.634
      0:20   3.009|   1:00   9.674|   1:40  18.587|   2:20   5.908|   3:00   3.528|   3:40   2.543
      0:25   3.283|   1:05  13.454|   1:45  14.756|   2:25   5.442|   3:05   3.362|   3:45   2.459
      0:30   3.615|   1:10  21.676|   1:50  12.191|   2:30   5.045|   3:10   3.212|   3:50   2.381
      0:35   4.026|   1:15  49.678|   1:55  10.367|   2:35   4.704|   3:15   3.076|   3:55   2.308
      0:40   4.549|   1:20 126.263|   2:00   9.010|   2:40   4.407|   3:20   2.951|   4:00   2.240

R0001:C00013
*#-----------------|-----------Area 2101 (West Developed Area)---------------|
--------------------
| CALIB STANDHYD         |   Area    (ha)=   10.00
| 01:2101      DT= 1.00  |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
--------------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.00         5.00
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     100.00        35.00
     Mannings n             =     .013         .150

     Max.eff.Inten.(mm/hr)=     126.26        21.67
                 over (min)        3.00        12.00
     Storage Coeff.  (min)=       2.87 (ii)   11.70 (ii)
     Unit Hyd. Tpeak (min)=       3.00        12.00
     Unit Hyd. peak  (cms)=        .39         .10
                                                      *TOTALS*
     PEAK FLOW       (cms)=        .88         .19          .935 (iii)
     TIME TO PEAK    (hrs)=       1.35        1.58         1.350
     RUNOFF VOLUME    (mm)=      43.85        9.08        19.513
     TOTAL RAINFALL   (mm)=      45.85       45.85        45.851
     RUNOFF COEFFICIENT   =        .96         .20          .426

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

R0001:C00014
*#-----------------|-------------Area 2102 (Silver Creek Buffer)--------------|
--------------------------
| CALIB NASHYD           |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
--------------------------  U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=     .258

     PEAK FLOW       (cms)=     .042 (i)
     TIME TO PEAK    (hrs)=    2.750
     DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
     AVERAGE FLOW    (cms)=    .010
     RUNOFF VOLUME    (mm)=    5.813
     TOTAL RAINFALL   (mm)=   45.851
     RUNOFF COEFFICIENT   =     .127

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

R0001:C00015
*#-----------------|-------------Area 2103 (East Developed Area)---------------|
--------------------------
| CALIB STANDHYD         |   Area    (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
--------------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.10          .60
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     295.00        35.00
     Mannings n             =     .013         .150

     Max.eff.Inten.(mm/hr)=     115.73        64.68
                 over (min)        6.00        11.00
     Storage Coeff.  (min)=       5.68 (ii)   11.39 (ii)
     Unit Hyd. Tpeak (min)=       6.00        11.00
     Unit Hyd. peak  (cms)=        .20         .10
                                                      *TOTALS*
     PEAK FLOW       (cms)=        .16         .07          .199 (iii)
     TIME TO PEAK    (hrs)=       1.40        1.55         1.417
     RUNOFF VOLUME    (mm)=      43.85       19.41        29.184
     TOTAL RAINFALL   (mm)=      45.85       45.85        45.851
     RUNOFF COEFFICIENT   =        .96         .42          .636

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.

R0001:C00016
*#-----------------|-------------Area 2104 (East Natural Area)-------------|
--------------------------
| CALIB NASHYD           |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
--------------------------  U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=     .563

     PEAK FLOW       (cms)=     .092 (i)
     TIME TO PEAK    (hrs)=    2.417
     DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
     AVERAGE FLOW    (cms)=    .022
     RUNOFF VOLUME    (mm)=    6.720
     TOTAL RAINFALL   (mm)=   45.851
     RUNOFF COEFFICIENT   =     .147

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

R0001:C00017
*#-----------------|----------Area 2105 (Central Natural Area)-------------|
--------------------
| CALIB NASHYD         |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105      DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
--------------------------  U.H. Tp(hrs)=    2.350

     Unit Hyd Qpeak  (cms)=     .349

     PEAK FLOW       (cms)=     .067 (i)
     TIME TO PEAK    (hrs)=    4.500
     DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
     AVERAGE FLOW    (cms)=    .016
     RUNOFF VOLUME    (mm)=    5.426
     TOTAL RAINFALL   (mm)=   45.851
     RUNOFF COEFFICIENT   =     .118

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

R0001:C00018
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
--------------------
| ADD HYD              |
| 06:UC-West           |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
--------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 01:2101          10.000      .935    1.350    19.513    .000
                         +ID 2 02:2102           6.900      .042    2.750     5.813    .000
                         ==========================================================
                         SUM   06:UC-West       16.900      .936    1.350    13.919    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00019
--------------------
| SAVE HYD         |   AREA       (ha)=   16.900
| ID=06:UC-West    |   QPEAK     (cms)=    .936 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   1.350
--------------------  VOLUME       (mm)=  13.919
  Filename: UC-West.0001
  Comments: UC-West

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

R0001:C00020
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
--------------------
| ADD HYD              |
| 07:UC-East           |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
--------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 03:2103           1.700      .199    1.417    29.184    .000
                         +ID 2 04:2104          10.900      .092    2.417     6.720    .000
                         +ID 3 05:2105          21.500      .067    4.500     5.426    .000
                         ==========================================================
                         SUM   07:UC-East       34.100      .206    1.433     7.024    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00021
--------------------
| SAVE HYD         |   AREA       (ha)=   34.100
| ID=07:UC-East    |   QPEAK     (cms)=    .206 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   1.433
--------------------  VOLUME       (mm)=   7.024
  Filename: UC-East.0001
  Comments: UC-East

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

R0001:C00022
*#*****************************************************************************
*#******************POST-DEVELOPMENT UNCONTROLLED - 10 YEAR Event ***************
*#*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#            Chicago Rainfall Distribution
*
*#*****************************************************************************
--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1362.588
| Ptotal= 54.36 mm |                          B=    9.188
--------------------                          C=    .835
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =   .33

                     The CORRELATION coefficient is = .9999022

                      TIME        ENTERED             COMPUTED
                     (min)        (mm/hr)              (mm/hr)
                        5.         150.00               148.77
                       10.         115.00               115.62
                       15.          95.00                95.29
                       30.          62.00                63.69
                       60.          41.00                39.62
                      120.          23.00                23.52
                      360.          10.00                 9.79
                      720.           5.50                 5.54
                     1440.           3.10                 3.12

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:05   2.860|   0:45   6.214|   1:25  74.800|   2:05   9.465|   2:45   4.917|   3:25   3.358
      0:10   3.059|   0:50   7.334|   1:30  43.260|   2:10   8.477|   2:50   4.643|   3:30   3.233
      0:15   3.291|   0:55   8.958|   1:35  29.549|   2:15   7.676|   2:55   4.399|   3:35   3.117
      0:20   3.564|   1:00  11.505|   1:40  22.129|   2:20   7.014|   3:00   4.181|   3:40   3.010
      0:25   3.889|   1:05  16.012|   1:45  17.564|   2:25   6.459|   3:05   3.984|   3:45   2.910
      0:30   4.284|   1:10  25.806|   1:50  14.506|   2:30   5.987|   3:10   3.805|   3:50   2.817
      0:35   4.773|   1:15  58.993|   1:55  12.331|   2:35   5.580|   3:15   3.643|   3:55   2.731
      0:40   5.396|   1:20 148.768|   2:00  10.713|   2:40   5.227|   3:20   3.495|   4:00   2.649

R0001:C00023
*#-----------------|-----------Area 2101 (West Developed Area)---------------|
--------------------
| CALIB STANDHYD         |   Area    (ha)=   10.00
| 01:2101      DT= 1.00  |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
--------------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.00         5.00
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     100.00        35.00
     Mannings n             =     .013         .150

     Max.eff.Inten.(mm/hr)=     148.77        32.85
                 over (min)        3.00        10.00
     Storage Coeff.  (min)=       2.68 (ii)   10.17 (ii)
     Unit Hyd. Tpeak (min)=       3.00        10.00
     Unit Hyd. peak  (cms)=        .40         .11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.05         .28         1.160 (iii)
     TIME TO PEAK    (hrs)=       1.35        1.53         1.350
     RUNOFF VOLUME    (mm)=      52.36       12.56        24.502
     TOTAL RAINFALL   (mm)=      54.36       54.36        54.361
     RUNOFF COEFFICIENT   =        .96         .23          .451

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

R0001:C00024
*#-----------------|-------------Area 2102 (Silver Creek Buffer)--------------|
--------------------------
| CALIB NASHYD           |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
--------------------------  U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=     .258
```

```
      PEAK FLOW       (cms)=     .060 (i)
      TIME TO PEAK    (hrs)=    2.750
      DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
      AVERAGE FLOW    (cms)=     .014
      RUNOFF VOLUME     (mm)=   8.332
      TOTAL RAINFALL    (mm)=  54.361
      RUNOFF COEFFICIENT   =     .153

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

R0001:C00025-----------------------------------------------------------------------------------------------
*#----------------|------------Area 2103 (East Developed Area)---------------|
 ------------------------
| CALIB STANDHYD         |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
 ------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area      (ha)=      1.10         .60
      Dep. Storage      (mm)=      2.00        5.00
      Average Slope      (%)=       .50        2.00
      Length             (m)=    295.00       35.00
      Mannings n              =     .013        .150

      Max.eff.Inten.(mm/hr)=    148.77       90.56
                   over (min)       5.00       10.00
      Storage Coeff.  (min)=      5.13 (ii)  10.12 (ii)
      Unit Hyd. Tpeak (min)=      5.00       10.00
      Unit Hyd. peak  (cms)=       .22         .11
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .19         .09         .253 (iii)
      TIME TO PEAK    (hrs)=      1.38        1.52        1.400
      RUNOFF VOLUME    (mm)=     52.36       25.57       36.286
      TOTAL RAINFALL   (mm)=     54.36       54.36       54.361
      RUNOFF COEFFICIENT   =       .96         .47         .668

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

R0001:C00026-----------------------------------------------------------------------------------------------
*#----------------|------------Area 2104 (East Natural Area)------------|
 ------------------------
| CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=     .563

      PEAK FLOW       (cms)=     .137 (i)
      TIME TO PEAK    (hrs)=    2.417
      DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
      AVERAGE FLOW    (cms)=     .032
      RUNOFF VOLUME    (mm)=    9.826
      TOTAL RAINFALL   (mm)=   54.361
      RUNOFF COEFFICIENT   =     .181

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

R0001:C00027-----------------------------------------------------------------------------------------------
*#----------------|----------Area 2105 (Central Natural Area)------------|
 ------------------------
| CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .098 (i)
      TIME TO PEAK    (hrs)=    4.417
      DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
      AVERAGE FLOW    (cms)=     .024
      RUNOFF VOLUME    (mm)=    7.930
      TOTAL RAINFALL   (mm)=   54.361
      RUNOFF COEFFICIENT   =     .146

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

R0001:C00028-----------------------------------------------------------------------------------------------
*#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
 ------------------------
| ADD HYD                |
| 06:UC-West             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------   ----------          (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 01:2101          10.000    1.160    1.350    24.502    .000
                         +ID 2 02:2102           6.900     .060    2.750     8.332    .000
                          ==========================================================
                          SUM   06:UC-West      16.900    1.161    1.350    17.900    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00029-----------------------------------------------------------------------------------------------
*#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
 ------------------------
| ADD HYD                |
| 07:UC-East             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------   ----------          (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 03:2103          1.700     .253    1.400    36.286    .000
                         +ID 2 04:2104         10.900     .137    2.417     9.826    .000
                         +ID 3 05:2105         21.500     .098    4.417     7.930    .000
                          ==========================================================
                          SUM   07:UC-East      34.100     .266    1.433     9.950    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00031-----------------------------------------------------------------------------------------------
 ------------------------
| SAVE HYD               |   AREA       (ha)=   34.100
| ID=07:UC-East          |   QPEAK      (cms)=     .266 (i)
| DT= 1.00 PCYC=-1       |   TPEAK      (hrs)=    1.433
 ------------------------   VOLUME        (mm)=    9.950
  Filename: UC-East.0001
  Comments: UC-East

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

R0001:C00032-----------------------------------------------------------------------------------------------
*#*****************************************************************************
*#*****************POST-DEVELOPMENT UNCONTROLLED - 25 YEAR Event ***************
*#*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#              Chicago Rainfall Distribution
*
*#*****************************************************************************
 ------------------------
| CHICAGO STORM          |   IDF curve parameters: A=1706.133
| Ptotal= 64.48 mm       |                         B=  10.500
 ------------------------                          C=    .844
                           used in:   INTENSITY =  A / (t + B)^C

                           Duration of storm  =  4.00 hrs
                           Storm time step    =  5.00 min
                           Time to peak ratio =   .33

                      The CORRELATION coefficient is = .9997648

                        TIME        ENTERED             COMPUTED
                       (min)        (mm/hr)              (mm/hr)
                          5.          175.00               168.80
                         10.          130.00               133.32
                         15.          110.00               110.89
                         30.           73.00                75.04
                         60.           49.00                47.00
                        120.           27.00                27.95
                        360.           12.00                11.59
                        720.            6.60                 6.53
                       1440.            3.60                 3.66

  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr
 0:05   3.323|  0:45   7.407|  1:25  89.112|  2:05  11.424|  2:45   5.817|  3:25   3.923
 0:10   3.563|  0:50   8.788|  1:30  52.616|  2:10  10.201|  2:50   5.483|  3:30   3.772
 0:15   3.842|  0:55  10.796|  1:35  36.148|  2:15   9.210|  2:55   5.185|  3:35   3.633
 0:20   4.171|  1:00  13.953|  1:40  27.083|  2:20   8.393|  3:00   4.919|  3:40   3.504
 0:25   4.565|  1:05  19.537|  1:45  21.457|  2:25   7.709|  3:05   4.680|  3:45   3.384
 0:30   5.045|  1:10  31.576|  1:50  17.674|  2:30   7.128|  3:10   4.464|  3:50   3.273
 0:35   5.641|  1:15  70.822|  1:55  14.978|  2:35   6.629|  3:15   4.267|  3:55   3.169
 0:40   6.403|  1:20 168.800|  2:00  12.970|  2:40   6.196|  3:20   4.088|  4:00   3.071

R0001:C00033-----------------------------------------------------------------------------------------------
*#----------------|----------Area 2101 (West Developed Area)---------------|
 ------------------------
| CALIB STANDHYD         |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
 ------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area      (ha)=      5.00        5.00
      Dep. Storage      (mm)=      2.00        5.00
      Average Slope      (%)=       .50        2.00
      Length             (m)=    100.00       35.00
      Mannings n              =     .013        .150

      Max.eff.Inten.(mm/hr)=    168.80       45.11
                   over (min)       3.00        9.00
      Storage Coeff.  (min)=      2.55 (ii)   9.14 (ii)
      Unit Hyd. Tpeak (min)=      3.00        9.00
      Unit Hyd. peak  (cms)=       .42         .12
                                                      *TOTALS*
      PEAK FLOW       (cms)=      1.22         .41        1.393 (iii)
      TIME TO PEAK    (hrs)=      1.35        1.52        1.350
      RUNOFF VOLUME    (mm)=     62.48       17.22       30.799
      TOTAL RAINFALL   (mm)=     64.48       64.48       64.483
      RUNOFF COEFFICIENT   =       .97         .27         .478

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  54.0    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.

R0001:C00034-----------------------------------------------------------------------------------------------
*#----------------|----------Area 2102 (Silver Creek Buffer)--------------|
 ------------------------
| CALIB NASHYD           |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=    1.020

      Unit Hyd Qpeak  (cms)=     .258

      PEAK FLOW       (cms)=     .086 (i)
      TIME TO PEAK    (hrs)=    2.750
      DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
      AVERAGE FLOW    (cms)=     .020
      RUNOFF VOLUME    (mm)=   11.795
      TOTAL RAINFALL   (mm)=   64.483
      RUNOFF COEFFICIENT   =     .183

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

R0001:C00035-----------------------------------------------------------------------------------------------
*#----------------|------------Area 2103 (East Developed Area)---------------|
 ------------------------
| CALIB STANDHYD         |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
 ------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area      (ha)=      1.10         .60
      Dep. Storage      (mm)=      2.00        5.00
      Average Slope      (%)=       .50        2.00
      Length             (m)=    295.00       35.00
      Mannings n              =     .013        .150

      Max.eff.Inten.(mm/hr)=    168.80       118.79
                   over (min)       5.00        9.00
      Storage Coeff.  (min)=      4.88 (ii)   9.36 (ii)
      Unit Hyd. Tpeak (min)=      5.00        9.00
      Unit Hyd. peak  (cms)=       .23         .12
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .23         .13         .319 (iii)
      TIME TO PEAK    (hrs)=      1.38        1.50        1.417
      RUNOFF VOLUME    (mm)=     62.48       33.36       45.009
      TOTAL RAINFALL   (mm)=     64.48       64.48       64.483
      RUNOFF COEFFICIENT   =       .97         .52         .698

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

R0001:C00036-----------------------------------------------------------------------------------------------
*#----------------|-------------Area 2104 (East Natural Area)------------|
 ------------------------
| CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=     .563

      PEAK FLOW       (cms)=     .201 (i)
      TIME TO PEAK    (hrs)=    2.333
      DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
      AVERAGE FLOW    (cms)=     .047
      RUNOFF VOLUME    (mm)=   14.082
      TOTAL RAINFALL   (mm)=   64.483
      RUNOFF COEFFICIENT   =     .218

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

R0001:C00037-----------------------------------------------------------------------------------------------
*#----------------|----------Area 2105 (Central Natural Area)------------|
 ------------------------
| CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
 ------------------------   U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .141 (i)
      TIME TO PEAK    (hrs)=    4.417
      DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
      AVERAGE FLOW    (cms)=     .034
      RUNOFF VOLUME    (mm)=   11.397
      TOTAL RAINFALL   (mm)=   64.483
      RUNOFF COEFFICIENT   =     .177

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

R0001:C00038-----------------------------------------------------------------------------------------------
*#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
 ------------------------
| ADD HYD                |
| 06:UC-West             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------   ----------          (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 01:2101          10.000    1.393    1.350    30.799    .000
                         +ID 2 02:2102           6.900     .086    2.750    11.795    .000
```

```
                    ================================================================
SUM   06:UC-West       16.900     1.396    1.350    23.040    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00039-----------------------------------------------------------------------------------------------
 ---------------------
| SAVE HYD          |   AREA       (ha)=   16.900
| ID=06:UC-West     |   QPEAK      (cms)=   1.396 (i)
| DT= 1.00 PCYC=-1  |   TPEAK      (hrs)=   1.350
 -------------------   VOLUME       (mm)=  23.040
  Filename: UC-West.0001
  Comments: UC-West

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

R0001:C00040-----------------------------------------------------------------------------------------------
*#------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
 ---------------------
| ADD HYD           |
| 07:UC-East        |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ---------------------                    (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 03:2103        1.700     .319    1.417    45.009    .000
                         +ID 2 04:2104       10.900     .201    2.333    14.082    .000
                         +ID 3 05:2105       21.500     .141    4.417    11.397    .000
                          ================================================================
SUM   07:UC-East       34.100     .340    1.433    13.931    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00041-----------------------------------------------------------------------------------------------
 ---------------------
| SAVE HYD          |   AREA       (ha)=   34.100
| ID=07:UC-East     |   QPEAK      (cms)=    .340 (i)
| DT= 1.00 PCYC=-1  |   TPEAK      (hrs)=   1.433
 -------------------   VOLUME       (mm)=  13.931
  Filename: UC-East.0001
  Comments: UC-East

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

R0001:C00042-----------------------------------------------------------------------------------------------
*#**********************************************************************************
*#*****************POST-DEVELOPMENT UNCONTROLLED - 50 YEAR Event ***************
*#**********************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             Chicago Rainfall Distribution
*
*#**********************************************************************************
 ---------------------
| CHICAGO STORM     |    IDF curve parameters: A=1924.754
| Ptotal= 71.55 mm  |                          B=  10.500
 ---------------------                         C=    .847
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =   .33

                     The CORRELATION coefficient is = .9997656

                      TIME        ENTERED             COMPUTED
                     (min)        (mm/hr)              (mm/hr)
                        5.         195.00               188.87
                       10.         145.00               149.05
                       15.         125.00               123.89
                       30.          81.00                83.73
                       60.          55.00                52.36
                      120.          30.00                31.08
                      360.          13.00                12.84
                      720.           7.40                 7.23
                     1440.           4.00                 4.04

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       0:05   3.634|   0:45   8.143|   1:25  99.441|   2:05  12.597|   2:45   6.385|   3:25   4.295
       0:10   3.898|   0:50   9.673|   1:30  58.562|   2:10  11.239|   2:50   6.015|   3:30   4.128
       0:15   4.205|   0:55  11.899|   1:35  40.150|   2:15  10.140|   2:55   5.687|   3:35   3.975
       0:20   4.568|   1:00  15.406|   1:40  30.030|   2:20   9.235|   3:00   5.393|   3:40   3.833
       0:25   5.002|   1:05  21.620|   1:45  23.758|   2:25   8.477|   3:05   5.129|   3:45   3.701
       0:30   5.531|   1:10  35.046|   1:50  19.545|   2:30   7.834|   3:10   4.890|   3:50   3.578
       0:35   6.190|   1:15  78.954|   1:55  16.545|   2:35   7.282|   3:15   4.673|   3:55   3.464
       0:40   7.032|   1:20 188.871|   2:00  14.314|   2:40   6.804|   3:20   4.476|   4:00   3.357

R0001:C00043-----------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)---------------|
 ---------------------------
| CALIB STANDHYD          |   Area     (ha)=   10.00
| 01:2101       DT= 1.00  |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
 ---------------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.00         5.00
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     100.00        35.00
     Mannings n             =      .013         .150

     Max.eff.Inten.(mm/hr)=     188.87        56.14
                   over (min)       2.00         8.00
     Storage Coeff.  (min)=       2.44 (ii)    8.48 (ii)
     Unit Hyd. Tpeak (min)=       2.00         8.00
     Unit Hyd. peak  (cms)=        .49          .14
                                                    *TOTALS*
     PEAK FLOW       (cms)=       1.41          .52        1.623 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.50         1.333
     RUNOFF VOLUME    (mm)=      69.55        20.77        35.402
     TOTAL RAINFALL   (mm)=      71.55        71.55        71.550
     RUNOFF COEFFICIENT   =        .97          .29          .495

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

R0001:C00044-----------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
 ---------------------------
| CALIB NASHYD            |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00  |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=     .258

     PEAK FLOW       (cms)=     .106 (i)
     TIME TO PEAK    (hrs)=    2.667
     DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
     AVERAGE FLOW    (cms)=     .025
     RUNOFF VOLUME    (mm)=   14.486
     TOTAL RAINFALL   (mm)=   71.550
     RUNOFF COEFFICIENT   =     .202

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

R0001:C00045-----------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2103 (East Developed Area)---------------|
 ---------------------------
| CALIB STANDHYD          |   Area     (ha)=    1.70
| 03:2103       DT= 1.00  |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
 ---------------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.10          .60
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     295.00        35.00
     Mannings n             =      .013         .150

     Max.eff.Inten.(mm/hr)=     188.87       141.56
                   over (min)       5.00         9.00
     Storage Coeff.  (min)=       4.67 (ii)    8.84 (ii)
     Unit Hyd. Tpeak (min)=       5.00         9.00
     Unit Hyd. peak  (cms)=        .24          .13
                                                    *TOTALS*
     PEAK FLOW       (cms)=        .26          .15          .371 (iii)
     TIME TO PEAK    (hrs)=       1.38         1.48         1.417
     RUNOFF VOLUME    (mm)=      69.55        39.03        51.238
     TOTAL RAINFALL   (mm)=      71.55        71.55        71.550
     RUNOFF COEFFICIENT   =        .97          .55          .716

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.

R0001:C00046-----------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2104 (East Natural Area)-------------|
 ---------------------------
| CALIB NASHYD            |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00  |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=     .563

     PEAK FLOW       (cms)=     .251 (i)
     TIME TO PEAK    (hrs)=    2.333
     DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
     AVERAGE FLOW    (cms)=     .057
     RUNOFF VOLUME    (mm)=   17.374
     TOTAL RAINFALL   (mm)=   71.550
     RUNOFF COEFFICIENT   =     .243

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

R0001:C00047-----------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2105 (Central Natural Area)-------------|
 ---------------------------
| CALIB NASHYD            |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00  |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
 ---------------------------  U.H. Tp(hrs)=    2.350

     Unit Hyd Qpeak  (cms)=     .349

     PEAK FLOW       (cms)=     .174 (i)
     TIME TO PEAK    (hrs)=    4.417
     DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
     AVERAGE FLOW    (cms)=     .043
     RUNOFF VOLUME    (mm)=   14.103
     TOTAL RAINFALL   (mm)=   71.550
     RUNOFF COEFFICIENT   =     .197

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

R0001:C00048-----------------------------------------------------------------------------------------------
*#------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
 ---------------------
| ADD HYD           |
| 06:UC-West        |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ---------------------                    (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 01:2101       10.000    1.623    1.333    35.402    .000
                         +ID 2 02:2102        6.900     .106    2.667    14.486    .000
                          ================================================================
SUM   06:UC-West       16.900    1.625    1.333    26.862    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00049-----------------------------------------------------------------------------------------------
 ---------------------
| SAVE HYD          |   AREA       (ha)=   16.900
| ID=06:UC-West     |   QPEAK      (cms)=   1.625 (i)
| DT= 1.00 PCYC=-1  |   TPEAK      (hrs)=   1.333
 -------------------   VOLUME       (mm)=  26.862
  Filename: UC-West.0001
  Comments: UC-West

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

R0001:C00050-----------------------------------------------------------------------------------------------
*#------------------|----Post Development Uncontrolled Flow to Northeast Outlet--|
 ---------------------
| ADD HYD           |
| 07:UC-East        |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ---------------------                    (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 03:2103        1.700     .371    1.417    51.238    .000
                         +ID 2 04:2104       10.900     .251    2.333    17.374    .000
                         +ID 3 05:2105       21.500     .174    4.417    14.103    .000
                          ================================================================
SUM   07:UC-East       34.100     .399    1.450    17.000    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00051-----------------------------------------------------------------------------------------------
 ---------------------
| SAVE HYD          |   AREA       (ha)=   34.100
| ID=07:UC-East     |   QPEAK      (cms)=    .399 (i)
| DT= 1.00 PCYC=-1  |   TPEAK      (hrs)=   1.450
 -------------------   VOLUME       (mm)=  17.000
  Filename: UC-East.0001
  Comments: UC-East

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

R0001:C00052-----------------------------------------------------------------------------------------------
*#**********************************************************************************
*#*****************POST-DEVELOPMENT UNCONTROLLED - 100 YEAR Event ***************
*#**********************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             Chicago Rainfall Distribution
*
*#**********************************************************************************
 ---------------------
| CHICAGO STORM     |    IDF curve parameters: A=2088.320
| Ptotal= 79.80 mm  |                          B=  10.500
 ---------------------                         C=    .842
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =   .33

                     The CORRELATION coefficient is = .9996362

                      TIME        ENTERED             COMPUTED
                     (min)        (mm/hr)              (mm/hr)
                        5.         215.00               207.75
                       10.         160.00               164.17
                       15.         135.00               136.61
                       30.          89.00                92.54
                       60.          61.00                58.03
                      120.          33.00                34.55
                      360.          15.00                14.35
                      720.           8.20                 8.10
                     1440.           4.40                 4.55

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       0:05   4.153|   0:45   9.224|   1:25 109.869|   2:05  14.197|   2:45   7.252|   3:25   4.899
       0:10   4.451|   0:50  10.935|   1:30  64.984|   2:10  12.683|   2:50   6.836|   3:30   4.711
       0:15   4.798|   0:55  13.420|   1:35  44.706|   2:15  11.457|   2:55   6.467|   3:35   4.538
       0:20   5.207|   1:00  17.324|   1:40  33.532|   2:20  10.445|   3:00   6.137|   3:40   4.377
       0:25   5.697|   1:05  24.223|   1:45  26.593|   2:25   9.598|   3:05   5.840|   3:45   4.228
       0:30   6.293|   1:10  39.070|   1:50  21.922|   2:30   8.878|   3:10   5.571|   3:50   4.090
       0:35   7.033|   1:15  87.375|   1:55  18.591|   2:35   8.259|   3:15   5.326|   3:55   3.960
       0:40   7.978|   1:20 207.748|   2:00  16.110|   2:40   7.722|   3:20   5.104|   4:00   3.839

R0001:C00053-----------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)---------------|
```

```
01233> --------------------------
01234> | CALIB STANDHYD         |   Area    (ha)=   10.00
01235> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
01236> --------------------------
01237>                            IMPERVIOUS    PERVIOUS (i)
01238>      Surface Area     (ha)=       5.00         5.00
01239>      Dep. Storage     (mm)=       2.00         5.00
01240>      Average Slope     (%)=        .50         2.00
01241>      Length            (m)=     100.00        35.00
01242>      Mannings n             =       .013         .150
01243>
01244>      Max.eff.Inten.(mm/hr)=     207.75        67.96
01245>                   over (min)       2.00         8.00
01246>      Storage Coeff.  (min)=       2.35 (ii)    7.94 (ii)
01247>      Unit Hyd. Tpeak (min)=       2.00         8.00
01248>      Unit Hyd. peak  (cms)=        .50          .14
01249>                                                      *TOTALS*
01250>      PEAK FLOW       (cms)=       1.57          .64         1.838 (iii)
01251>      TIME TO PEAK    (hrs)=       1.33         1.48          1.333
01252>      RUNOFF VOLUME    (mm)=      77.80        25.18         40.968
01253>      TOTAL RAINFALL   (mm)=      79.80        79.80         79.804
01254>      RUNOFF COEFFICIENT   =        .97          .32           .513
01255>
01256>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01257>            CN* =  54.0    Ia = Dep. Storage  (Above)
01258>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01259>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01260>
01261> ------------------------------------------------------------------------------------------------
01262> R0001:C00054------------------------------------------------------------------------------------
01263> *#----------------|-------------Area 2102 (Silver Creek Buffer)--------------|
01264> --------------------------
01265> | CALIB NASHYD           |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
01266> | 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
01267> --------------------------   U.H. Tp(hrs)=    1.020
01268>
01269>      Unit Hyd Qpeak  (cms)=     .258
01270>
01271>      PEAK FLOW       (cms)=     .131 (i)
01272>      TIME TO PEAK    (hrs)=    2.667
01273>      DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
01274>      AVERAGE FLOW    (cms)=     .031
01275>      RUNOFF VOLUME    (mm)=  17.890
01276>      TOTAL RAINFALL   (mm)=  79.804
01277>      RUNOFF COEFFICIENT   =     .224
01278>
01279>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01280>
01281> ------------------------------------------------------------------------------------------------
01282> R0001:C00055------------------------------------------------------------------------------------
01283> *#----------------|-------------Area 2103 (East Developed Area)--------------|
01284> --------------------------
01285> | CALIB STANDHYD         |   Area    (ha)=    1.70
01286> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
01287> --------------------------
01288>                            IMPERVIOUS    PERVIOUS (i)
01289>      Surface Area     (ha)=       1.10          .60
01290>      Dep. Storage     (mm)=       2.00         5.00
01291>      Average Slope     (%)=        .50         2.00
01292>      Length            (m)=     295.00        35.00
01293>      Mannings n             =       .013         .150
01294>
01295>      Max.eff.Inten.(mm/hr)=     207.75       170.10
01296>                   over (min)       4.00         8.00
01297>      Storage Coeff.  (min)=       4.49 (ii)    8.37 (ii)
01298>      Unit Hyd. Tpeak (min)=       4.00         8.00
01299>      Unit Hyd. peak  (cms)=        .26          .14
01300>                                                      *TOTALS*
01301>      PEAK FLOW       (cms)=        .29          .18          .428 (iii)
01302>      TIME TO PEAK    (hrs)=       1.37         1.47         1.417
01303>      RUNOFF VOLUME    (mm)=      77.80        45.85         58.630
01304>      TOTAL RAINFALL   (mm)=      79.80        79.80         79.804
01305>      RUNOFF COEFFICIENT   =        .97          .57           .735
01306>
01307>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01308>            CN* =  74.0    Ia = Dep. Storage  (Above)
01309>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01310>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01311>
01312> ------------------------------------------------------------------------------------------------
01313> R0001:C00056------------------------------------------------------------------------------------
01314> *#----------------|--------------Area 2104 (East Natural Area)-------------|
01315> --------------------------
01316> | CALIB NASHYD           |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
01317> | 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
01318> --------------------------   U.H. Tp(hrs)=     .740
01319>
01320>      Unit Hyd Qpeak  (cms)=     .563
01321>
01322>      PEAK FLOW       (cms)=     .311 (i)
01323>      TIME TO PEAK    (hrs)=    2.333
01324>      DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
01325>      AVERAGE FLOW    (cms)=     .071
01326>      RUNOFF VOLUME    (mm)=   21.514
01327>      TOTAL RAINFALL   (mm)=   79.804
01328>      RUNOFF COEFFICIENT   =     .270
01329>
01330>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01331>
01332> ------------------------------------------------------------------------------------------------
01333> R0001:C00057------------------------------------------------------------------------------------
01334> *#----------------|-----------Area 2105 (Central Natural Area)------------|
01335> --------------------------
01336> | CALIB NASHYD           |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
01337> | 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
01338> --------------------------   U.H. Tp(hrs)=    2.350
01339>
01340>      Unit Hyd Qpeak  (cms)=     .349
01341>
01342>      PEAK FLOW       (cms)=     .217 (i)
01343>      TIME TO PEAK    (hrs)=    4.417
01344>      DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
01345>      AVERAGE FLOW    (cms)=     .053
01346>      RUNOFF VOLUME    (mm)=  17.534
01347>      TOTAL RAINFALL   (mm)=  79.804
01348>      RUNOFF COEFFICIENT   =     .220
01349>
01350>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01351>
01352> ------------------------------------------------------------------------------------------------
01353> R0001:C00058------------------------------------------------------------------------------------
01354> *#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
01355> --------------------------
01356> | ADD HYD                |
01357> | 06:UC-West             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
01358> --------------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
01359>                            ID 1 01:2101          10.000     1.838    1.333    40.968    .000
01360>                          +ID 2 02:2102           6.900      .131    2.667    17.890    .000
01361>                          ================================================================
01362>                          SUM   06:UC-West       16.900     1.841    1.333    31.546    .000
01363>
01364>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
01365>
01366> ------------------------------------------------------------------------------------------------
01367> R0001:C00059------------------------------------------------------------------------------------
01368> --------------------
01369> | SAVE HYD         |   AREA       (ha)=   16.900
01370> | ID=06:UC-West    |   QPEAK     (cms)=    1.841 (i)
01371> | DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=    1.333
01372> --------------------   VOLUME      (mm)=   31.546
01373>   Filename: UC-West.0001
01374>   Comments: UC-West
01375>
01376>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01377> ------------------------------------------------------------------------------------------------
01378> R0001:C00060------------------------------------------------------------------------------------
01379> *#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
01380> --------------------------
01381> | ADD HYD                |
01382> | 07:UC-East             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
01383> --------------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
01384>                            ID 1 03:2103          1.700      .428    1.417    58.630    .000
01385>                          +ID 2 04:2104          10.900      .311    2.333    21.514    .000
01386>                          +ID 3 05:2105          21.500      .217    4.417    17.534    .000
01387>                          ================================================================
01388>                          SUM   07:UC-East       34.100      .463    1.433    20.855    .000
01389>
01390>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
01391>
01392> ------------------------------------------------------------------------------------------------
01393> R0001:C00061------------------------------------------------------------------------------------
01394> --------------------
01395> | SAVE HYD         |   AREA       (ha)=   34.100
01396> | ID=07:UC-East    |   QPEAK     (cms)=     .463 (i)
01397> | DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=    1.433
01398> --------------------   VOLUME      (mm)=   20.855
01399>   Filename: UC-East.0001
01400>   Comments: UC-East
01401>
01402>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01403> ------------------------------------------------------------------------------------------------
01404> R0001:C00062------------------------------------------------------------------------------------
01405> --------------------
01406> | FINISH           |
01407> --------------------
01408> ------------------------------------------------------------------------------------------------
01409> ************************************************************************************************
01410>      WARNINGS / ERRORS / NOTES
01411>      -------------------------
01412>    Simulation ended on 2019-07-25     at 21:34:38
01413> ================================================================================================
01414>
```

```
00001> 2     Metric units
00002> *#*****************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date         : 01-17-2011
00005> *#  Updated      : 07-25-2019
00006> *#  Modeller     : [J.Proctor/R.Alexander]
00007> *#  Company      : C.F. Crozier & Associates Inc.
00008> *#  License #    :  3737016
00009> *#*****************************************************************************
00010> *#  J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\ALL_SCS.dat
00011> *#*****************************************************************************
00012> START                TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                    [  ] <--storm filename, one per line for NSTORM time
00014> *%-------------------|-----------------------------------------------------|
00015> *#*****************************************************************************
00016> *#*****************POST-DEVELOPMENT UNCONTROLLED - 2 YEAR Event ***************
00017> *#*****************************************************************************
00018> *
00019> *#   Rainfall Depths per MTO - Basins East of Collingwood
00020> *#              SCS Rainfall Distribution
00021> *
00022> *#*****************************************************************************
00023> *%-------------------|-----------------------------------------------------|
00024> MASS STORM           PTOTAL=[50.4](mm), CSDT=[5](min),
00025>                      CURVE_FILENAME=["SCS24HII.MST"]
00026> *%-------------------|-----------------------------------------------------|
00027> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00028> *%-------------------|-----------------------------------------------------|
00029> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00030>                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00031>                      SCS curve number CN=[54],
00032>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00033>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00034>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00035>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00036>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00037> *%-------------------|-----------------------------------------------------|
00038> *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00039> *%-------------------|-----------------------------------------------------|
00040> CALIB NASHYD         ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00041>                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00042>                      N=[3], TP=[1.02]hrs,
00043>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00044> *%-------------------|-----------------------------------------------------|
00045> *#-----------------|------------Area 2103 (East Developed Area)--------------|
00046> *%-------------------|-----------------------------------------------------|
00047> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00048>                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00049>                      SCS curve number CN=[74],
00050>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00051>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00052>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00053>                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
00054>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00055> *%-------------------|-----------------------------------------------------|
00056> *#-----------------|------------Area 2104 (East Natural Area)-------------|
00057> *%-------------------|-----------------------------------------------------|
00058> CALIB NASHYD         ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00059>                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00060>                      N=[3], TP=[0.74]hrs,
00061>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00062> *%-------------------|-----------------------------------------------------|
00063> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00064> *%-------------------|-----------------------------------------------------|
00065> CALIB NASHYD         ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00066>                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00067>                      N=[3], TP=[2.35]hrs,
00068>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00069> *%-------------------|-----------------------------------------------------|
00070> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek----|
00071> *%-------------------|-----------------------------------------------------|
00072> ADD HYD              IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00073> *%-------------------|-----------------------------------------------------|
00074> SAVE HYD             ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00075>                      HYD_COMMENT=["UC-West"]
00076> *%-------------------|-----------------------------------------------------|
00077> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00078> *%-------------------|-----------------------------------------------------|
00079> ADD HYD              IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00080> *%-------------------|-----------------------------------------------------|
00081> SAVE HYD             ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00082>                      HYD_COMMENT=["UC-East"]
00083> *%-------------------|-----------------------------------------------------|
00084> *#*****************************************************************************
00085> *#*****************POST-DEVELOPMENT UNCONTROLLED - 5 YEAR Event ***************
00086> *#*****************************************************************************
00087> *
00088> *#   Rainfall Depths per MTO - Basins East of Collingwood
00089> *#              SCS Rainfall Distribution
00090> *
00091> *#*****************************************************************************
00092> *%-------------------|-----------------------------------------------------|
00093> MASS STORM           PTOTAL=[64.8](mm), CSDT=[5](min),
00094>                      CURVE_FILENAME=["SCS24HII.MST"]
00095> *%-------------------|-----------------------------------------------------|
00096> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00097> *%-------------------|-----------------------------------------------------|
00098> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00099>                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00100>                      SCS curve number CN=[54],
00101>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00102>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00103>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00104>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00105>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00106> *%-------------------|-----------------------------------------------------|
00107> *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00108> *%-------------------|-----------------------------------------------------|
00109> CALIB NASHYD         ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00110>                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00111>                      N=[3], TP=[1.02]hrs,
00112>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00113> *%-------------------|-----------------------------------------------------|
00114> *#-----------------|------------Area 2103 (East Developed Area)--------------|
00115> *%-------------------|-----------------------------------------------------|
00116> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00117>                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00118>                      SCS curve number CN=[74],
00119>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00120>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00121>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00122>                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
00123>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00124> *%-------------------|-----------------------------------------------------|
00125> *#-----------------|------------Area 2104 (East Natural Area)-------------|
00126> *%-------------------|-----------------------------------------------------|
00127> CALIB NASHYD         ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00128>                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00129>                      N=[3], TP=[0.74]hrs,
00130>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00131> *%-------------------|-----------------------------------------------------|
00132> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00133> *%-------------------|-----------------------------------------------------|
00134> CALIB NASHYD         ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00135>                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00136>                      N=[3], TP=[2.35]hrs,
00137>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00138> *%-------------------|-----------------------------------------------------|
00139> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek----|
00140> *%-------------------|-----------------------------------------------------|
00141> ADD HYD              IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00142> *%-------------------|-----------------------------------------------------|
00143> SAVE HYD             ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00144>                      HYD_COMMENT=["UC-West"]
00145> *%-------------------|-----------------------------------------------------|
00146> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00147> *%-------------------|-----------------------------------------------------|
00148> ADD HYD              IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00149> *%-------------------|-----------------------------------------------------|
00150> SAVE HYD             ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00151>                      HYD_COMMENT=["UC-East"]
00152> *%-------------------|-----------------------------------------------------|
00153> *#*****************************************************************************
00154> *#*****************POST-DEVELOPMENT UNCONTROLLED - 10 YEAR Event ***************
00155> *#*****************************************************************************
00156> *
00157> *#   Rainfall Depths per MTO - Basins East of Collingwood
00158> *#              SCS Rainfall Distribution
00159> *
00160> *#*****************************************************************************
00161> *%-------------------|-----------------------------------------------------|
00162> MASS STORM           PTOTAL=[74.4](mm), CSDT=[5](min),
00163>                      CURVE_FILENAME=["SCS24HII.MST"]
00164> *%-------------------|-----------------------------------------------------|
00165> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00166> *%-------------------|-----------------------------------------------------|
00167> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00168>                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00169>                      SCS curve number CN=[54],
00170>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00171>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00172>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00173>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00174>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00175> *%-------------------|-----------------------------------------------------|
00176> *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00177> *%-------------------|-----------------------------------------------------|
00178> CALIB NASHYD         ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00179>                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00180>                      N=[3], TP=[1.02]hrs,
00181>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00182> *%-------------------|-----------------------------------------------------|
00183> *#-----------------|------------Area 2103 (East Developed Area)--------------|
00184> *%-------------------|-----------------------------------------------------|
00185> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00186>                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00187>                      SCS curve number CN=[74],
00188>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00189>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00190>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00191>                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
00192>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00193> *%-------------------|-----------------------------------------------------|
00194> *#-----------------|------------Area 2104 (East Natural Area)-------------|
00195> *%-------------------|-----------------------------------------------------|
00196> CALIB NASHYD         ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00197>                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00198>                      N=[3], TP=[0.74]hrs,
00199>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00200> *%-------------------|-----------------------------------------------------|
00201> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00202> *%-------------------|-----------------------------------------------------|
00203> CALIB NASHYD         ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00204>                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00205>                      N=[3], TP=[2.35]hrs,
00206>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00207> *%-------------------|-----------------------------------------------------|
00208> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00209> *%-------------------|-----------------------------------------------------|
00210> ADD HYD              IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00211> *%-------------------|-----------------------------------------------------|
00212> SAVE HYD             ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00213>                      HYD_COMMENT=["UC-West"]
00214> *%-------------------|-----------------------------------------------------|
00215> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00216> *%-------------------|-----------------------------------------------------|
00217> ADD HYD              IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00218> *%-------------------|-----------------------------------------------------|
00219> SAVE HYD             ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00220>                      HYD_COMMENT=["UC-East"]
00221> *%-------------------|-----------------------------------------------------|
00222> *#*****************************************************************************
00223> *#*****************POST-DEVELOPMENT UNCONTROLLED - 25 YEAR Event ***************
00224> *#*****************************************************************************
00225> *
00226> *#   Rainfall Depths per MTO - Basins East of Collingwood
00227> *#              SCS Rainfall Distribution
00228> *
00229> *#*****************************************************************************
00230> *%-------------------|-----------------------------------------------------|
00231> MASS STORM           PTOTAL=[86.4](mm), CSDT=[5](min),
00232>                      CURVE_FILENAME=["SCS24HII.MST"]
00233> *%-------------------|-----------------------------------------------------|
00234> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00235> *%-------------------|-----------------------------------------------------|
00236> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00237>                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00238>                      SCS curve number CN=[54],
00239>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00240>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00241>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00242>                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
00243>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00244> *%-------------------|-----------------------------------------------------|
00245> *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00246> *%-------------------|-----------------------------------------------------|
00247> CALIB NASHYD         ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00248>                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00249>                      N=[3], TP=[1.02]hrs,
00250>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00251> *%-------------------|-----------------------------------------------------|
00252> *#-----------------|------------Area 2103 (East Developed Area)--------------|
00253> *%-------------------|-----------------------------------------------------|
00254> CALIB STANDHYD       ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00255>                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00256>                      SCS curve number CN=[74],
00257>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00258>                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
00259>                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00260>                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
00261>                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00262> *%-------------------|-----------------------------------------------------|
00263> *#-----------------|------------Area 2104 (East Natural Area)-------------|
00264> *%-------------------|-----------------------------------------------------|
00265> CALIB NASHYD         ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00266>                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00267>                      N=[3], TP=[0.74]hrs,
00268>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00269> *%-------------------|-----------------------------------------------------|
00270> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00271> *%-------------------|-----------------------------------------------------|
00272> CALIB NASHYD         ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00273>                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00274>                      N=[3], TP=[2.35]hrs,
00275>                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00276> *%-------------------|-----------------------------------------------------|
00277> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00278> *%-------------------|-----------------------------------------------------|
00279> ADD HYD              IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00280> *%-------------------|-----------------------------------------------------|
00281> SAVE HYD             ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00282>                      HYD_COMMENT=["UC-West"]
00283> *%-------------------|-----------------------------------------------------|
00284> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00285> *%-------------------|-----------------------------------------------------|
00286> ADD HYD              IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00287> *%-------------------|-----------------------------------------------------|
00288> SAVE HYD             ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00289>                      HYD_COMMENT=["UC-East"]
00290> *%-------------------|-----------------------------------------------------|
00291> *#*****************************************************************************
00292> *#*****************POST-DEVELOPMENT UNCONTROLLED - 50 YEAR Event ***************
00293> *#*****************************************************************************
00294> *
00295> *#   Rainfall Depths per MTO - Basins East of Collingwood
00296> *#              SCS Rainfall Distribution
00297> *
00298> *#*****************************************************************************
00299> *%-------------------|-----------------------------------------------------|
00300> MASS STORM           PTOTAL=[96.0](mm), CSDT=[5](min),
00301>                      CURVE_FILENAME=["SCS24HII.MST"]
00302> *%-------------------|-----------------------------------------------------|
00303> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00304> *%-------------------|-----------------------------------------------------|
00305> CALIB STANDHYD       ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00306>                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00307>                      SCS curve number CN=[54],
00308>                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
```

```
00309>                                      LGP=[35](m), MNP=[0.15], SCP=[0](min),
00310>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00311>                                      LGI=[100](m), MNI=[0.013], SCI=[0](min),
00312>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00313> *%-----------------|-------------------------------------------------------------|
00314> *#-----------------|------------Area 2102 (Silver Creek Buffer)---------------|
00315> *%-----------------|-------------------------------------------------------------|
00316> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00317>                    DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00318>                    N=[3], TP=[1.02]hrs,
00319>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00320> *%-----------------|-------------------------------------------------------------|
00321> *#-----------------|------------Area 2103 (East Developed Area)---------------|
00322> *%-----------------|-------------------------------------------------------------|
00323> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00324>                    XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00325>                    SCS curve number CN=[74],
00326>                    Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00327>                                      LGP=[35](m), MNP=[0.15], SCP=[0](min),
00328>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00329>                                      LGI=[295](m), MNI=[0.013], SCI=[0](min),
00330>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00331> *%-----------------|-------------------------------------------------------------|
00332> *#-----------------|-------------Area 2104 (East Natural Area)-------------|
00333> *%-----------------|-------------------------------------------------------------|
00334> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00335>                    DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00336>                    N=[3], TP=[0.74]hrs,
00337>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00338> *%-----------------|-------------------------------------------------------------|
00339> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00340> *%-----------------|-------------------------------------------------------------|
00341> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00342>                    DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00343>                    N=[3], TP=[2.35]hrs,
00344>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00345> *%-----------------|-------------------------------------------------------------|
00346> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00347> *%-----------------|-------------------------------------------------------------|
00348> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00349> *%-----------------|-------------------------------------------------------------|
00350> SAVE HYD            ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00351>                    HYD_COMMENT=["UC-West"]
00352> *%-----------------|-------------------------------------------------------------|
00353> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00354> *%-----------------|-------------------------------------------------------------|
00355> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00356> *%-----------------|-------------------------------------------------------------|
00357> SAVE HYD            ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00358>                    HYD_COMMENT=["UC-East"]
00359> *%-----------------|-------------------------------------------------------------|
00360> *#*************************************************************************************
00361> *#****************POST-DEVELOPMENT UNCONTROLLED - 100 YEAR Event ***************
00362> *#*************************************************************************************
00363> *
00364> *#   Rainfall Depths per MTO - Basins East of Collingwood
00365> *#            SCS Rainfall Distribution
00366> *
00367> *#*************************************************************************
00368> *%-----------------|-------------------------------------------------------------|
00369> MASS STORM          PTOTAL=[105.6](mm), CSDT=[5](min),
00370>                    CURVE_FILENAME=["SCS24HII.MST"]
00371> *%-----------------|-------------------------------------------------------------|
00372> *#-----------------|-----------Area 2101 (West Developed Area)---------------|
00373> *%-----------------|-------------------------------------------------------------|
00374> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00375>                    XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00376>                    SCS curve number CN=[54],
00377>                    Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00378>                                      LGP=[35](m), MNP=[0.15], SCP=[0](min),
00379>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00380>                                      LGI=[100](m), MNI=[0.013], SCI=[0](min),
00381>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00382> *%-----------------|-------------------------------------------------------------|
00383> *#-----------------|------------Area 2102 (Silver Creek Buffer)---------------|
00384> *%-----------------|-------------------------------------------------------------|
00385> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00386>                    DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00387>                    N=[3], TP=[1.02]hrs,
00388>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00389> *%-----------------|-------------------------------------------------------------|
00390> *#-----------------|------------Area 2103 (East Developed Area)---------------|
00391> *%-----------------|-------------------------------------------------------------|
00392> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00393>                    XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00394>                    SCS curve number CN=[74],
00395>                    Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00396>                                      LGP=[35](m), MNP=[0.15], SCP=[0](min),
00397>                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00398>                                      LGI=[295](m), MNI=[0.013], SCI=[0](min),
00399>                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00400> *%-----------------|-------------------------------------------------------------|
00401> *#-----------------|-------------Area 2104 (East Natural Area)-------------|
00402> *%-----------------|-------------------------------------------------------------|
00403> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00404>                    DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00405>                    N=[3], TP=[0.74]hrs,
00406>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00407> *%-----------------|-------------------------------------------------------------|
00408> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00409> *%-----------------|-------------------------------------------------------------|
00410> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00411>                    DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00412>                    N=[3], TP=[2.35]hrs,
00413>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00414> *%-----------------|-------------------------------------------------------------|
00415> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00416> *%-----------------|-------------------------------------------------------------|
00417> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00418> *%-----------------|-------------------------------------------------------------|
00419> SAVE HYD            ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00420>                    HYD_COMMENT=["UC-West"]
00421> *%-----------------|-------------------------------------------------------------|
00422> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00423> *%-----------------|-------------------------------------------------------------|
00424> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00425> *%-----------------|-------------------------------------------------------------|
00426> SAVE HYD            ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00427>                    HYD_COMMENT=["UC-East"]
00428> *%-----------------|-------------------------------------------------------------|
00429> FINISH
```

```
00001>  ================================================================================================
00002>
00003>  SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
00004>  S       W   W   W   W   H   H   Y Y     M M M   O   O          2     0   0   1 1       7  =======
00005>  SSSSS   W W W   M M M   HHHHH     Y      M M M   O   O          2     0   0   11        7 Ver4.05.0
00006>      S    W W    M   M   H   H     Y      M   M   O   O        222     0   0   11       7  APR 2017
00007>  SSSSS    W W    M   M   H   H     Y      M   M    OOO         2       0   0   11      7   ========
00008>
00009>         StormWater Management HYdrologic Model                  222     000    11     7    ========
00010>
00011>  ************************************************************************************************
00012>  ***************************************  SWMHYMO Ver4.05.0  ***************************************
00013>  ******************  A single event and continuous hydrologic simulation model  *******************
00014>  ******************      based on the principles of HYMO and its successors      *******************
00015>  ******************                  OTTHYMO-83 and OTTHYMO-89.                  *******************
00016>  ************************************************************************************************
00017>  ******************* Distributed by:  J.F. Sabourin and Associates Inc.          *******************
00018>  ******************                  Ottawa, Ontario: (613) 836-3884             *******************
00019>  ******************                  Gatineau, Quebec: (819) 243-6858            *******************
00020>  ******************                  E-Mail: swmhymo@jfsa.com                    *******************
00021>  ************************************************************************************************
00022>
00023>  ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024>  ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.                ++++++++++++++++++++
00025>  ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++++
00026>  ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028>  ************************************************************************************************
00029>  ******************              ++++++ PROGRAM ARRAY DIMENSIONS ++++++                 *******************
00030>  ******************              Maximum value for ID numbers  :    11                 *******************
00031>  ******************              Max. number of rainfall points: 105408                *******************
00032>  ******************              Max. number of flow points    : 105408                *******************
00033>  ************************************************************************************************
00034>
00035>
00036>  ******************************   S U M M A R Y   O U T P U T   ******************************
00037>  ************************************************************************************************
00038>  *                RUN DATE: 2019-07-25     TIME: 21:35:56     RUN COUNTER: 000005                *
00039>  ************************************************************************************************
00040>  * Input  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00041>  *                HYMO\UC\ALL_SCS.dat                                                           *
00042>  * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00043>  *                HYMO\UC\ALL_SCS.out                                                           *
00044>  * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00045>  *                HYMO\UC\ALL_SCS.sum                                                           *
00046>  * User comments:                                                                              *
00047>  * 1:_____________________________________________________________________________________*
00048>  * 2:_____________________________________________________________________________________*
00049>  * 3:_____________________________________________________________________________________*
00050>  ************************************************************************************************
00051>
00052>
00053> #*************************************************************************
00054> #  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00055> #  Date       : 01-17-2011
00056> #  Updated    : 07-25-2019
00057> #  Modeller   : [J.Proctor/R.Alexander]
00058> #  Company    : C.F. Crozier & Associates Inc.
00059> #  License #  :  3737016
00060> #*************************************************************************
00061> #  J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\ALL_SCS.dat
00062> #*************************************************************************
00063>  RUN#:COMMAND#
00064> R0001:C00001-----------------------------------------------------------------------------------
00065>      START
00066>        [TZERO =    .00 hrs on       0]
00067>        [METOUT=   2    (1=imperial, 2=metric output)]
00068>        [NSTORM=   0 ]
00069>        [NRUN  = 0001 ]
00070> #*************************************************************************
00071> #*****************POST-DEVELOPMENT UNCONTROLLED - 2 YEAR Event ***************
00072> #*************************************************************************
00073> #   Rainfall Depths per MTO - Basins East of Collingwood
00074> #              SCS Rainfall Distribution
00075> #*************************************************************************
00076> R0001:C00002-----------------------------------------------------------------------------------
00077>      MASS STORM
00078>        Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
00079>        Comment  = 24 hour SCS II storm mass curve
00080>        [SDT= 6.00:SDUR=  24.00:PTOT=   50.40]
00081> #-----------------|------------Area 2101 (West Developed Area)---------------|
00082> R0001:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00083>      CALIB STANDHYD          1.0 01:2101          10.00     .579 No_date   12:12   22.14 .439     .000
00084>        [XIMP=.30:TIMP=.50]
00085>        [LOSS= 2 :CN= 54.0]
00086>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00087>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00088> #-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00089> R0001:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00090>      CALIB NASHYD            6.0 02:2102           6.90     .036 No_date   13:11    7.11 .141     .000
00091>        [CN= 52.8: N= 3.00: Tp= 1.02]
00092> #-----------------|------------Area 2103 (East Developed Area)---------------|
00093> R0001:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00094>      CALIB STANDHYD          1.0 03:2103           1.70     .133 No_date   12:15   32.95 .654     .000
00095>        [XIMP=.40:TIMP=.65]
00096>        [LOSS= 2 :CN= 74.0]
00097>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00098>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00099> #-----------------|------------Area 2104 (East Natural Area)-------------|
00100> R0001:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00101>      CALIB NASHYD            6.0 04:2104          10.90     .082 No_date   12:54    8.32 .165     .000
00102>        [CN= 61.6: N= 3.00: Tp=  .74]
00103> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00104> R0001:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00105>      CALIB NASHYD            6.0 05:2105          21.50     .055 No_date   15:00    6.72 .133     .000
00106>        [CN= 53.9: N= 3.00: Tp= 2.35]
00107> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00108> R0001:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00109>      ADD HYD                 1.0 01:2101          10.00     .579 No_date   12:12   22.14  n/a     .000
00110>                        +     6.0 02:2102           6.90     .036 No_date   13:11    7.11  n/a     .000
00111>                      SUM=    1.0 06:UC-West       16.90     .587 No_date   12:12   16.01  n/a     .000
00112> R0001:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00113>      SAVE HYD                1.0 06:UC-West       16.90     .587 No_date   12:12   16.01  n/a     .000
00114>        fname :UC-West.0001
00115>        remark:UC-West
00116> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00117> R0001:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00118>      ADD HYD                 1.0 03:2103           1.70     .133 No_date   12:15   32.95  n/a     .000
00119>                        +     6.0 04:2104          10.90     .082 No_date   12:54    8.32  n/a     .000
00120>                        +     6.0 05:2105          21.50     .055 No_date   15:00    6.72  n/a     .000
00121>                      SUM=    1.0 07:UC-East       34.10     .170 No_date   12:17    8.54  n/a     .000
00122> R0001:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00123>      SAVE HYD                1.0 07:UC-East       34.10     .170 No_date   12:17    8.54  n/a     .000
00124>        fname :UC-East.0001
00125>        remark:UC-East
00126> #*************************************************************************
00127> #*****************POST-DEVELOPMENT UNCONTROLLED - 5 YEAR Event ***************
00128> #*************************************************************************
00129> #   Rainfall Depths per MTO - Basins East of Collingwood
00130> #              SCS Rainfall Distribution
00131> #*************************************************************************
00132> R0001:C00012-----------------------------------------------------------------------------------
00133>      MASS STORM
00134>        Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
00135>        Comment  = 24 hour SCS II storm mass curve
00136>        [SDT= 6.00:SDUR=  24.00:PTOT=  64.80]
00137> #-----------------|------------Area 2101 (West Developed Area)---------------|
00138> R0001:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00139>      CALIB STANDHYD          1.0 01:2101          10.00     .835 No_date   12:12   31.00 .478     .000
00140>        [XIMP=.30:TIMP=.50]
00141>        [LOSS= 2 :CN= 54.0]
00142>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00143>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00144> #-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00145> R0001:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00146>      CALIB NASHYD            6.0 02:2102           6.90     .061 No_date   13:11   11.91 .184     .000
00147>        [CN= 52.8: N= 3.00: Tp= 1.02]
00148> #-----------------|------------Area 2103 (East Developed Area)---------------|
00149> R0001:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00150>      CALIB STANDHYD          1.0 03:2103           1.70     .193 No_date   12:15   45.29 .699     .000
00151>        [XIMP=.40:TIMP=.65]
00152>        [LOSS= 2 :CN= 74.0]
00153>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00154>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00155> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00156> R0001:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00157>      CALIB NASHYD            6.0 04:2104          10.90     .146 No_date   12:54   14.22 .220     .000
00158>        [CN= 61.6: N= 3.00: Tp=  .74]
00159> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00160> R0001:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00161>      CALIB NASHYD            6.0 05:2105          21.50     .097 No_date   14:54   11.51 .178     .000
00162>        [CN= 53.9: N= 3.00: Tp= 2.35]
00163> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00164> R0001:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00165>      ADD HYD                 1.0 01:2101          10.00     .835 No_date   12:12   31.00  n/a     .000
00166>                        +     6.0 02:2102           6.90     .061 No_date   13:11   11.91  n/a     .000
00167>                      SUM=    1.0 06:UC-West       16.90     .849 No_date   12:12   23.21  n/a     .000
00168> R0001:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00169>      SAVE HYD                1.0 06:UC-West       16.90     .849 No_date   12:12   23.21  n/a     .000
00170>        fname :UC-West.0001
00171>        remark:UC-West
00172> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00173> R0001:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00174>      ADD HYD                 1.0 03:2103           1.70     .193 No_date   12:15   45.29  n/a     .000
00175>                        +     6.0 04:2104          10.90     .146 No_date   12:54   14.22  n/a     .000
00176>                        +     6.0 05:2105          21.50     .097 No_date   14:54   11.51  n/a     .000
00177>                      SUM=    1.0 07:UC-East       34.10     .262 No_date   12:16   14.06  n/a     .000
00178> R0001:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00179>      SAVE HYD                1.0 07:UC-East       34.10     .262 No_date   12:16   14.06  n/a     .000
00180>        fname :UC-East.0001
00181>        remark:UC-East
00182> #*************************************************************************
00183> #*****************POST-DEVELOPMENT UNCONTROLLED - 10 YEAR Event ***************
00184> #*************************************************************************
00185> #   Rainfall Depths per MTO - Basins East of Collingwood
00186> #              SCS Rainfall Distribution
00187> #*************************************************************************
00188> R0001:C00022-----------------------------------------------------------------------------------
00189>      MASS STORM
00190>        Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
00191>        Comment  = 24 hour SCS II storm mass curve
00192>        [SDT= 6.00:SDUR=  24.00:PTOT=  74.40]
00193> #-----------------|------------Area 2101 (West Developed Area)---------------|
00194> R0001:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00195>      CALIB STANDHYD          1.0 01:2101          10.00     1.028 No_date   12:12   37.30 .501     .000
00196>        [XIMP=.30:TIMP=.50]
00197>        [LOSS= 2 :CN= 54.0]
00198>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00199>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00200> #-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00201> R0001:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00202>      CALIB NASHYD            6.0 02:2102           6.90     .081 No_date   13:11   15.63 .210     .000
00203>        [CN= 52.8: N= 3.00: Tp= 1.02]
00204> #-----------------|------------Area 2103 (East Developed Area)---------------|
00205> R0001:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00206>      CALIB STANDHYD          1.0 03:2103           1.70     .236 No_date   12:14   53.78 .723     .000
00207>        [XIMP=.40:TIMP=.65]
00208>        [LOSS= 2 :CN= 74.0]
00209>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00210>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00211> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00212> R0001:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00213>      CALIB NASHYD            6.0 04:2104          10.90     .196 No_date   12:54   18.77 .252     .000
00214>        [CN= 61.6: N= 3.00: Tp=  .74]
00215> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00216> R0001:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00217>      CALIB NASHYD            6.0 05:2105          21.50     .129 No_date   14:54   15.26 .205     .000
00218>        [CN= 53.9: N= 3.00: Tp= 2.35]
00219> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00220> R0001:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00221>      ADD HYD                 1.0 01:2101          10.00     1.028 No_date   12:12   37.30  n/a     .000
00222>                        +     6.0 02:2102           6.90     .081 No_date   13:11   15.63  n/a     .000
00223>                      SUM=    1.0 06:UC-West       16.90    1.048 No_date   12:12   28.45  n/a     .000
00224> R0001:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00225>      SAVE HYD                1.0 06:UC-West       16.90     1.048 No_date   12:12   28.45  n/a     .000
00226>        fname :UC-West.0001
00227>        remark:UC-West
00228> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00229> R0001:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00230>      ADD HYD                 1.0 03:2103           1.70     .236 No_date   12:14   53.78  n/a     .000
00231>                        +     6.0 04:2104          10.90     .196 No_date   12:54   18.77  n/a     .000
00232>                        +     6.0 05:2105          21.50     .129 No_date   14:54   15.26  n/a     .000
00233>                      SUM=    1.0 07:UC-East       34.10     .329 No_date   12:16   18.30  n/a     .000
00234> R0001:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00235>      SAVE HYD                1.0 07:UC-East       34.10     .329 No_date   12:16   18.30  n/a     .000
00236>        fname :UC-East.0001
00237>        remark:UC-East
00238> #*************************************************************************
00239> #*****************POST-DEVELOPMENT UNCONTROLLED - 25 YEAR Event ***************
00240> #*************************************************************************
00241> #   Rainfall Depths per MTO - Basins East of Collingwood
00242> #              SCS Rainfall Distribution
00243> #*************************************************************************
00244> R0001:C00032-----------------------------------------------------------------------------------
00245>      MASS STORM
00246>        Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
00247>        Comment  = 24 hour SCS II storm mass curve
00248>        [SDT= 6.00:SDUR=  24.00:PTOT=  86.40]
00249> #-----------------|------------Area 2101 (West Developed Area)---------------|
00250> R0001:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00251>      CALIB STANDHYD          1.0 01:2101          10.00     1.285 No_date   12:12   45.55 .527     .000
00252>        [XIMP=.30:TIMP=.50]
00253>        [LOSS= 2 :CN= 54.0]
00254>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00255>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00256> #-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00257> R0001:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00258>      CALIB NASHYD            6.0 02:2102           6.90     .108 No_date   13:11   20.80 .241     .000
00259>        [CN= 52.8: N= 3.00: Tp= 1.02]
00260> #-----------------|------------Area 2103 (East Developed Area)---------------|
00261> R0001:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00262>      CALIB STANDHYD          1.0 03:2103           1.70     .287 No_date   12:14   64.61 .748     .000
00263>        [XIMP=.40:TIMP=.65]
00264>        [LOSS= 2 :CN= 74.0]
00265>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00266>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00267> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00268> R0001:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00269>      CALIB NASHYD            6.0 04:2104          10.90     .264 No_date   12:54   25.03 .290     .000
00270>        [CN= 61.6: N= 3.00: Tp=  .74]
00271> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00272> R0001:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00273>      CALIB NASHYD            6.0 05:2105          21.50     .175 No_date   14:54   20.47 .237     .000
00274>        [CN= 53.9: N= 3.00: Tp= 2.35]
00275> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00276> R0001:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00277>      ADD HYD                 1.0 01:2101          10.00     1.285 No_date   12:12   45.55  n/a     .000
00278>                        +     6.0 02:2102           6.90     .108 No_date   13:11   20.80  n/a     .000
00279>                      SUM=    1.0 06:UC-West       16.90    1.313 No_date   12:12   35.44  n/a     .000
00280> R0001:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00281>      SAVE HYD                1.0 06:UC-West       16.90     1.313 No_date   12:12   35.44  n/a     .000
00282>        fname :UC-West.0001
00283>        remark:UC-West
00284> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00285> R0001:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00286>      ADD HYD                 1.0 03:2103           1.70     .287 No_date   12:14   64.61  n/a     .000
00287>                        +     6.0 04:2104          10.90     .264 No_date   12:54   25.03  n/a     .000
00288>                        +     6.0 05:2105          21.50     .175 No_date   14:54   20.47  n/a     .000
00289>                      SUM=    1.0 07:UC-East       34.10     .419 No_date   12:16   24.13  n/a     .000
00290> R0001:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00291>      SAVE HYD                1.0 07:UC-East       34.10     .419 No_date   12:16   24.13  n/a     .000
00292>        fname :UC-East.0001
00293>        remark:UC-East
00294> #*************************************************************************
00295> #*****************POST-DEVELOPMENT UNCONTROLLED - 50 YEAR Event ***************
00296> #*************************************************************************
00297> #   Rainfall Depths per MTO - Basins East of Collingwood
00298> #              SCS Rainfall Distribution
00299> #*************************************************************************
00300> R0001:C00042-----------------------------------------------------------------------------------
00301>      MASS STORM
00302>        Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
00303>        Comment  = 24 hour SCS II storm mass curve
00304>        [SDT= 6.00:SDUR=  24.00:PTOT=  96.00]
00305> #-----------------|------------Area 2101 (West Developed Area)---------------|
00306> R0001:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00307>      CALIB STANDHYD          1.0 01:2101          10.00     1.490 No_date   12:12   52.41 .546     .000
00308>        [XIMP=.30:TIMP=.50]
```

```
00309>       [LOSS= 2 :CN= 54.0]
00310>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00311>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00312> #-----------------|------------Area 2102 (Silver Creek Buffer)---------------|
00313> R0001:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00314>     CALIB NASHYD          6.0 02:2102          6.90     .132 No_date   13:11   25.30 .264     .000
00315>       [CN= 52.8: N= 3.00: Tp= 1.02]
00316> #-----------------|------------Area 2103 (East Developed Area)---------------|
00317> R0001:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00318>     CALIB STANDHYD        1.0 03:2103          1.70     .334 No_date   12:14   73.42 .765     .000
00319>       [XIMP=.40:TIMP=.65]
00320>       [LOSS= 2 :CN= 74.0]
00321>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00322>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00323> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00324> R0001:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00325>     CALIB NASHYD          6.0 04:2104         10.90     .324 No_date   12:54   30.44 .317     .000
00326>       [CN= 61.6: N= 3.00: Tp=  .74]
00327> #-----------------|-----------Area 2105 (Central Natural Area)------------|
00328> R0001:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00329>     CALIB NASHYD          6.0 05:2105         21.50     .215 No_date   14:48   25.03 .261     .000
00330>       [CN= 53.9: N= 3.00: Tp= 2.35]
00331> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00332> R0001:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00333>     ADD HYD               1.0 01:2101         10.00    1.490 No_date   12:12   52.41  n/a     .000
00334>                     +     6.0 02:2102          6.90     .132 No_date   13:11   25.30  n/a     .000
00335>                   SUM=    1.0 06:UC-West      16.90    1.525 No_date   12:12   41.34  n/a     .000
00336> R0001:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00337>     SAVE HYD              1.0 06:UC-West      16.90    1.525 No_date   12:12   41.34  n/a     .000
00338>       fname :UC-West.0001
00339>       remark:UC-West
00340> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00341> R0001:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00342>     ADD HYD               1.0 03:2103          1.70     .334 No_date   12:14   73.42  n/a     .000
00343>                     +     6.0 04:2104         10.90     .324 No_date   12:54   30.44  n/a     .000
00344>                     +     6.0 05:2105         21.50     .215 No_date   14:48   25.03  n/a     .000
00345>                   SUM=    1.0 07:UC-East      34.10     .499 No_date   12:16   29.17  n/a     .000
00346> R0001:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00347>     SAVE HYD              1.0 07:UC-East      34.10     .499 No_date   12:16   29.17  n/a     .000
00348>       fname :UC-East.0001
00349>       remark:UC-East
00350> ********************************************************************************
00351> ***************POST-DEVELOPMENT UNCONTROLLED - 100 YEAR Event ***************
00352> ********************************************************************************
00353> #   Rainfall Depths per MTO - Basins East of Collingwood
00354> #             SCS Rainfall Distribution
00355> ********************************************************************************
00356> R0001:C00052------------------------------------------------------------------------------------------------
00357>      MASS STORM
00358>       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
00359>       Comment  = 24 hour SCS II storm mass curve
00360>       [SDT= 6.00:SDUR=  24.00:PTOT= 105.60]
00361> #-----------------|------------Area 2101 (West Developed Area)---------------|
00362> R0001:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00363>     CALIB STANDHYD        1.0 01:2101         10.00    1.730 No_date   12:12   59.48 .563     .000
00364>       [XIMP=.30:TIMP=.50]
00365>       [LOSS= 2 :CN= 54.0]
00366>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00367>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00368> #-----------------|------------Area 2102 (Silver Creek Buffer)---------------|
00369> R0001:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00370>     CALIB NASHYD          6.0 02:2102          6.90     .158 No_date   13:11   30.11 .285     .000
00371>       [CN= 52.8: N= 3.00: Tp= 1.02]
00372> #-----------------|------------Area 2103 (East Developed Area)---------------|
00373> R0001:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00374>     CALIB STANDHYD        1.0 03:2103          1.70     .378 No_date   12:14   82.32 .780     .000
00375>       [XIMP=.40:TIMP=.65]
00376>       [LOSS= 2 :CN= 74.0]
00377>       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00378>       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00379> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00380> R0001:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00381>     CALIB NASHYD          6.0 04:2104         10.90     .387 No_date   12:54   36.17 .343     .000
00382>       [CN= 61.6: N= 3.00: Tp=  .74]
00383> #-----------------|-----------Area 2105 (Central Natural Area)------------|
00384> R0001:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00385>     CALIB NASHYD          6.0 05:2105         21.50     .259 No_date   14:48   29.89 .283     .000
00386>       [CN= 53.9: N= 3.00: Tp= 2.35]
00387> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00388> R0001:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00389>     ADD HYD               1.0 01:2101         10.00    1.730 No_date   12:12   59.48  n/a     .000
00390>                     +     6.0 02:2102          6.90     .158 No_date   13:11   30.11  n/a     .000
00391>                   SUM=    1.0 06:UC-West      16.90    1.773 No_date   12:12   47.49  n/a     .000
00392> R0001:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00393>     SAVE HYD              1.0 06:UC-West      16.90    1.773 No_date   12:12   47.49  n/a     .000
00394>       fname :UC-West.0001
00395>       remark:UC-West
00396> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00397> R0001:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00398>     ADD HYD               1.0 03:2103          1.70     .378 No_date   12:14   82.32  n/a     .000
00399>                     +     6.0 04:2104         10.90     .387 No_date   12:54   36.17  n/a     .000
00400>                     +     6.0 05:2105         21.50     .259 No_date   14:48   29.89  n/a     .000
00401>                   SUM=    1.0 07:UC-East      34.10     .580 No_date   12:16   34.51  n/a     .000
00402> R0001:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00403>     SAVE HYD              1.0 07:UC-East      34.10     .580 No_date   12:16   34.51  n/a     .000
00404>       fname :UC-East.0001
00405>       remark:UC-East
00406> R0001:C00062------------------------------------------------------------------------------------------------
00407>     FINISH
00408> ------------------------------------------------------------------------------------------------
00409> ************************************************************************************************
00410>      WARNINGS / ERRORS / NOTES
00411>      -------------------------
00412>    Simulation ended on 2019-07-25     at 21:35:56
00413> ================================================================================================
00414>
```

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00001> ================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M     OOO          222     000    11   77777 ========
00004> S       W W W   MM MM   H   H   Y Y     MM MM    O   O          2   2   0   0  11   7     7
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M    O   O          2   0   0   0  11       7  Ver4.05.0
00006>     S   W W     M   M   H   H     Y     M   M    O   O        222   0   0   0  11      7   APR 2017
00007> SSSSS    W W    M   M   H   H     Y     M   M     OOO         2     0   0   0  11     7    =========
00008>                                                               2     0   0   0  11    7     # 3737016
00009>       StormWater Management HYdrologic Model                  222     000    11   7      =========
00010>
00011> ************************************************************************************
00012> ************************************  SWMHYMO Ver4.05.0  ************************************
00013> ******************  A single event and continuous hydrologic simulation model  ******************
00014> ******************     based on the principles of HYMO and its successors      ******************
00015> ******************                 OTTHYMO-83 and OTTHYMO-89.                  ******************
00016> ************************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
00018> ******************                 Ottawa,  Ontario: (613) 836-3884            ******************
00019> ******************                 Gatineau, Quebec: (819) 243-6858            ******************
00020> ******************                 E-Mail: swmhymo@jfsa.com                    ******************
00021> ************************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ************************************************************************************
00029> ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
00030> ******************                Maximum value for ID numbers  :    11          ******************
00031> ******************                Max. number of rainfall points: 105408         ******************
00032> ******************                Max. number of flow points    : 105408         ******************
00033> ************************************************************************************
00034>
00035> ************************************************************************************
00036> ************************************  SWMHYMO Ver4.05.0  ************************************
00037> ******************  A single event and continuous hydrologic simulation model  ******************
00038> ******************     based on the principles of HYMO and its successors      ******************
00039> ******************                 OTTHYMO-83 and OTTHYMO-89.                  ******************
00040> ************************************************************************************
00041> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
00042> ******************                 Ottawa,  Ontario: (613) 836-3884            ******************
00043> ******************                 Gatineau, Quebec: (819) 243-6858            ******************
00044> ******************                 E-Mail: swmhymo@jfsa.com                    ******************
00045> ************************************************************************************
00046>
00047> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00048> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00049> ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++++
00050> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00051>
00052> ************************************************************************************
00053> ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
00054> ******************                Maximum value for ID numbers  :    11          ******************
00055> ******************                Max. number of rainfall points: 105408         ******************
00056> ******************                Max. number of flow points    : 105408         ******************
00057> ************************************************************************************
00058>
00059>
00060> ****************************  D E T A I L E D   O U T P U T  ****************************
00061> ************************************************************************************
00062> *            RUN DATE: 2019-07-25       TIME: 21:35:56     RUN COUNTER: 000205        *
00063> ************************************************************************************
00064> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00065> *               HYMO\UC\ALL_SCS.dat                                                    *
00066> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00067> *               HYMO\UC\ALL_SCS.out                                                    *
00068> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00069> *               HYMO\UC\ALL_SCS.sum                                                    *
00070> * User comments:                                                                     *
00071> * 1:_____________________________________________________________________________*
00072> * 2:_____________________________________________________________________________*
00073> * 3:_____________________________________________________________________________*
00074> ************************************************************************************
00075>
00076> ------------------------------------------------------------------------------------
00077> R0001:C00001-----------------------------------------------------------------------------
00078> *#*********************************************************************
00079> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00080> *#  Date        : 01-17-2011
00081> *#  Updated     : 07-25-2019
00082> *#  Modeller    : [J.Proctor/R.Alexander]
00083> *#  Company     : C.F. Crozier & Associates Inc.
00084> *#  License #   :  3737016
00085> *#*********************************************************************
00086> *#  J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\ALL_SCS.dat
00087> *#*********************************************************************
00088> --------------------
00089> | START           | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00090> ------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00091>     TZERO =   .00 hrs on       0
00092>     METOUT=  2 (output = METRIC)
00093>     NRUN  = 0001
00094>     NSTORM=   0
00095> ------------------------------------------------------------------------------------
00096> R0001:C00002-----------------------------------------------------------------------------
00097> *#*********************************************************************
00098> *#******************POST-DEVELOPMENT UNCONTROLLED - 2 YEAR Event ***************
00099> *#*********************************************************************
00100> *
00101> *#   Rainfall Depths per MTO - Basins East of Collingwood
00102> *#              SCS Rainfall Distribution
00103> *
00104> *#*********************************************************************
00105> --------------------
00106> | MASS STORM      |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
00107> | Ptotal= 50.40 mm |    Comments: 24 hour SCS II storm mass curve
00108> --------------------
00109>                          Duration of storm        =  24.00 hrs
00110>                          Mass curve time step     =  12.00 min
00111>                          Selected storm time step =   6.00 min
00112>                          Volume of derived storm  =  50.40 mm
00113>
00114>      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00115>     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00116>      0:06    .000|   4:06    .504|   8:06   1.008|  12:06  56.700|  16:06   1.260|  20:06   1.008
00117>      0:12    .000|   4:12    .504|   8:12   1.008|  12:12  56.700|  16:12   1.260|  20:12   1.008
00118>      0:18    .504|   4:18   1.008|   8:18   1.512|  12:18  10.080|  16:18   1.260|  20:18    .756
00119>      0:24    .504|   4:24   1.008|   8:24   1.512|  12:24  10.080|  16:24   1.260|  20:24    .756
00120>      0:30    .504|   4:30   1.008|   8:30   1.512|  12:30   6.300|  16:30   1.260|  20:30    .756
00121>      0:36    .504|   4:36   1.008|   8:36   1.512|  12:36   6.300|  16:36   1.260|  20:36    .756
00122>      0:42    .504|   4:42   1.008|   8:42   1.512|  12:42   4.536|  16:42   1.260|  20:42    .504
00123>      0:48    .504|   4:48   1.008|   8:48   1.512|  12:48   4.536|  16:48   1.260|  20:48    .504
00124>      0:54    .504|   4:54   1.008|   8:54   1.512|  12:54   4.284|  16:54   1.260|  20:54    .756
00125>      1:00    .504|   5:00   1.008|   9:00   1.512|  13:00   4.284|  17:00   1.260|  21:00    .756
00126>      1:06    .504|   5:06   1.008|   9:06   1.512|  13:06   3.024|  17:06    .756|  21:06    .756
00127>      1:12    .504|   5:12   1.008|   9:12   1.512|  13:12   3.024|  17:12    .756|  21:12    .756
00128>      1:18    .504|   5:18   1.008|   9:18   1.512|  13:18   2.520|  17:18    .756|  21:18    .504
00129>      1:24    .504|   5:24   1.008|   9:24   1.512|  13:24   2.520|  17:24    .756|  21:24    .504
00130>      1:30    .504|   5:30   1.008|   9:30   1.512|  13:30   2.520|  17:30   1.008|  21:30    .756
00131>      1:36    .504|   5:36   1.008|   9:36   1.512|  13:36   2.520|  17:36   1.008|  21:36    .756
00132>      1:42    .504|   5:42   1.008|   9:42   1.512|  13:42   2.520|  17:42    .756|  21:42    .504
00133>      1:48    .504|   5:48   1.008|   9:48   1.512|  13:48   2.520|  17:48    .756|  21:48    .504
00134>      1:54    .504|   5:54   1.008|   9:54   1.512|  13:54   2.520|  17:54   1.008|  21:54    .756
00135>      2:00    .504|   6:00   1.008|  10:00   1.512|  14:00   2.520|  18:00   1.008|  22:00    .756
00136>      2:06    .504|   6:06   1.008|  10:06   1.512|  14:06   2.520|  18:06    .756|  22:06    .504
00137>      2:12    .504|   6:12   1.008|  10:12   1.512|  14:12   2.520|  18:12    .756|  22:12    .504
00138>      2:18    .504|   6:18   1.008|  10:18   2.772|  14:18   1.512|  18:18    .756|  22:18    .504
00139>      2:24    .504|   6:24   1.008|  10:24   2.772|  14:24   1.512|  18:24    .756|  22:24    .504
00140>      2:30    .504|   6:30   1.008|  10:30   2.772|  14:30   1.512|  18:30    .756|  22:30    .756
00141>      2:36    .504|   6:36   1.008|  10:36   2.772|  14:36   1.512|  18:36    .756|  22:36    .756
00142>      2:42    .504|   6:42   1.008|  10:42   2.772|  14:42   1.512|  18:42   1.008|  22:42    .504
00143>      2:48    .504|   6:48   1.008|  10:48   2.772|  14:48   1.512|  18:48   1.008|  22:48    .504
00144>      2:54    .504|   6:54   1.008|  10:54   2.772|  14:54   1.512|  18:54    .756|  22:54    .756
00145>      3:00    .504|   7:00   1.008|  11:00   2.772|  15:00   1.512|  19:00    .756|  23:00    .756
00146>      3:06    .504|   7:06   1.008|  11:06   2.772|  15:06   1.512|  19:06    .756|  23:06    .504
00147>      3:12    .504|   7:12   1.008|  11:12   2.772|  15:12   1.512|  19:12    .756|  23:12    .504
00148>      3:18    .504|   7:18   1.008|  11:18   3.780|  15:18   1.260|  19:18   1.008|  23:18    .504
00149>      3:24    .504|   7:24   1.008|  11:24   3.780|  15:24   1.260|  19:24   1.008|  23:24    .504
00150>      3:30    .504|   7:30   1.008|  11:30   5.544|  15:30   1.260|  19:30    .756|  23:30    .504
00151>      3:36    .504|   7:36   1.008|  11:36   5.544|  15:36   1.260|  19:36    .756|  23:36    .504
00152>      3:42    .504|   7:42   1.008|  11:42  13.356|  15:42   1.260|  19:42   1.008|  23:42    .756
00153>      3:48    .504|   7:48   1.008|  11:48  13.356|  15:48   1.260|  19:48   1.008|  23:48    .756
00154>      3:54    .504|   7:54   1.008|  11:54  27.720|  15:54   1.260|  19:54    .756|  23:54   1.008
00155>      4:00    .504|   8:00   1.008|  12:00  27.720|  16:00   1.260|  20:00    .756|  24:00   1.008
00156>
00157> ------------------------------------------------------------------------------------
00158> R0001:C00003-----------------------------------------------------------------------------
00159> *#-----------------|-----------Area 2101 (West Developed Area)---------------|
00160> -------------------------
00161> | CALIB STANDHYD         |   Area     (ha)=   10.00
00162> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00163> -------------------------
00164>                             IMPERVIOUS    PERVIOUS (i)
00165>      Surface Area     (ha)=       5.00         5.00
00166>      Dep. Storage     (mm)=       2.00         5.00
00167>      Average Slope     (%)=        .50         2.00
00168>      Length            (m)=     100.00        35.00
00169>      Mannings n            =       .013         .150
00170>
00171>      Max.eff.Inten.(mm/hr)=      56.70        18.93
00172>                over (min)        4.00        13.00
00173>      Storage Coeff.  (min)=       3.95 (ii)   13.28 (ii)
00174>      Unit Hyd. Tpeak (min)=       4.00        13.00
00175>      Unit Hyd. peak  (cms)=        .28          .09
00176>                                                          *TOTALS*
00177>      PEAK FLOW       (cms)=        .45          .17          .579 (iii)
00178>      TIME TO PEAK    (hrs)=      12.20        12.33        12.200
00179>      RUNOFF VOLUME    (mm)=      48.40        10.89        22.143
00180>      TOTAL RAINFALL   (mm)=      50.40        50.40        50.400
00181>      RUNOFF COEFFICIENT   =        .96          .22          .439
00182>
00183>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00184>            CN* =  54.0    Ia = Dep. Storage    (Above)
00185>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00186>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00187>
00188> ------------------------------------------------------------------------------------
00189> R0001:C00004-----------------------------------------------------------------------------
00190> *#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00191> -------------------------
00192> | CALIB NASHYD           |   Area     (ha)=    6.900   Curve Number    (CN)= 52.80
00193> | 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
00194> -------------------------  U.H. Tp(hrs)=    1.020
00195>
00196>      Unit Hyd Qpeak  (cms)=     .258
00197>
00198>      PEAK FLOW       (cms)=     .036 (i)
00199>      TIME TO PEAK    (hrs)=   13.200
00200>      DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
00201>      AVERAGE FLOW    (cms)=     .004
00202>      RUNOFF VOLUME    (mm)=    7.113
00203>      TOTAL RAINFALL   (mm)=   50.400
00204>      RUNOFF COEFFICIENT   =     .141
00205>
00206>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00207>
00208> ------------------------------------------------------------------------------------
00209> R0001:C00005-----------------------------------------------------------------------------
00210> *#-----------------|-----------Area 2103 (East Developed Area)---------------|
00211> -------------------------
00212> | CALIB STANDHYD         |   Area     (ha)=    1.70
00213> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00214> -------------------------
00215>                             IMPERVIOUS    PERVIOUS (i)
00216>      Surface Area     (ha)=       1.10          .60
00217>      Dep. Storage     (mm)=       2.00         5.00
00218>      Average Slope     (%)=        .50         2.00
00219>      Length            (m)=     295.00        35.00
00220>      Mannings n            =       .013         .150
00221>
00222>      Max.eff.Inten.(mm/hr)=      56.70        47.86
00223>                over (min)        8.00        14.00
00224>      Storage Coeff.  (min)=       7.55 (ii)   13.99 (ii)
00225>      Unit Hyd. Tpeak (min)=       8.00        14.00
00226>      Unit Hyd. peak  (cms)=        .15          .08
00227>                                                          *TOTALS*
00228>      PEAK FLOW       (cms)=        .09          .05          .133 (iii)
00229>      TIME TO PEAK    (hrs)=      12.23        12.33        12.250
00230>      RUNOFF VOLUME    (mm)=      48.39        22.65        32.950
00231>      TOTAL RAINFALL   (mm)=      50.40        50.40        50.400
00232>      RUNOFF COEFFICIENT   =        .96          .45          .654
00233>
00234>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00235>            CN* =  74.0    Ia = Dep. Storage    (Above)
00236>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00237>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00238>
00239> ------------------------------------------------------------------------------------
00240> R0001:C00006-----------------------------------------------------------------------------
00241> *#-----------------|-----------Area 2104 (East Natural Area)-------------|
00242> -------------------------
00243> | CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number    (CN)= 61.60
00244> | 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
00245> -------------------------  U.H. Tp(hrs)=     .740
00246>
00247>      Unit Hyd Qpeak  (cms)=     .563
00248>
00249>      PEAK FLOW       (cms)=     .082 (i)
00250>      TIME TO PEAK    (hrs)=   12.900
00251>      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
00252>      AVERAGE FLOW    (cms)=     .009
00253>      RUNOFF VOLUME    (mm)=    8.322
00254>      TOTAL RAINFALL   (mm)=   50.400
00255>      RUNOFF COEFFICIENT   =     .165
00256>
00257>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00258>
00259> ------------------------------------------------------------------------------------
00260> R0001:C00007-----------------------------------------------------------------------------
00261> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00262> -------------------------
00263> | CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number    (CN)= 53.90
00264> | 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
00265> -------------------------  U.H. Tp(hrs)=    2.350
00266>
00267>      Unit Hyd Qpeak  (cms)=     .349
00268>
00269>      PEAK FLOW       (cms)=     .055 (i)
00270>      TIME TO PEAK    (hrs)=   15.000
00271>      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
00272>      AVERAGE FLOW    (cms)=     .010
00273>      RUNOFF VOLUME    (mm)=    6.715
00274>      TOTAL RAINFALL   (mm)=   50.400
00275>      RUNOFF COEFFICIENT   =     .133
00276>
00277>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00278>
00279> ------------------------------------------------------------------------------------
00280> R0001:C00008-----------------------------------------------------------------------------
00281> *#-----------------|-----Post Development Uncontrolled Flow to Silver Creek-----|
00282> -------------------------
00283> | ADD HYD                |
00284> | 06:UC-West             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00285> -------------------------                       (ha)     (cms)    (hrs)      (mm)   (cms)
00286>                          ID 1 01:2101          10.000      .579   12.200    22.143    .000
00287>                         +ID 2 02:2102           6.900      .036   13.200     7.113    .000
00288>                         ========================================================================
00289>                         SUM   06:UC-West       16.900      .587   12.200    16.006    .000
00290>
00291>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00292>
00293> ------------------------------------------------------------------------------------
00294> R0001:C00009-----------------------------------------------------------------------------
00295> --------------------
00296> | SAVE HYD         |   AREA       (ha)=   16.900
00297> | ID=06:UC-West    |   QPEAK     (cms)=     .587 (i)
00298> | DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   12.200
00299> --------------------  VOLUME      (mm)=   16.006
00300>   Filename: UC-West.0001
00301>   Comments: UC-West
00302>
00303>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00304> ------------------------------------------------------------------------------------
00305> R0001:C00010-----------------------------------------------------------------------------
00306> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00307> -------------------------
00308> | ADD HYD                |
```

```
| 07:UC-East            |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
----------------------                            (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 03:2103             1.700      .133   12.250    32.950    .000
                       +ID 2 04:2104            10.900      .082   12.900     8.322    .000
                       +ID 3 05:2105            21.500      .055   15.000     6.715    .000
                        ==========================================================
                        SUM   07:UC-East        34.100      .170   12.283     8.537    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00011----------------------------------------------------------------------------------------------------
| SAVE HYD          |   AREA       (ha)=   34.100
| ID=07:UC-East     |   QPEAK     (cms)=     .170 (i)
| DT= 1.00 PCYC=-1  |   TPEAK     (hrs)=   12.283
--------------------   VOLUME      (mm)=    8.537
  Filename: UC-East.0001
  Comments: UC-East

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

R0001:C00012----------------------------------------------------------------------------------------------------
*#*************************************************************************
*#******************POST-DEVELOPMENT UNCONTROLLED - 5 YEAR Event ***************
*#*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#              SCS Rainfall Distribution
*
*#*************************************************************************
--------------------
| MASS STORM        |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
| Ptotal= 64.80 mm  |    Comments: 24 hour SCS II storm mass curve
--------------------
                         Duration of storm        =   24.00 hrs
                         Mass curve time step     =   12.00 min
                         Selected storm time step =    6.00 min
                         Volume of derived storm  =   64.80 mm

       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
        0:06    .000|   4:06    .648|   8:06   1.296|  12:06  72.900|  16:06   1.620|  20:06   1.296
        0:12    .000|   4:12    .648|   8:12   1.296|  12:12  72.900|  16:12   1.620|  20:12   1.296
        0:18    .648|   4:18   1.296|   8:18   1.944|  12:18  12.960|  16:18   1.620|  20:18    .972
        0:24    .648|   4:24   1.296|   8:24   1.944|  12:24  12.960|  16:24   1.620|  20:24    .972
        0:30    .648|   4:30   1.296|   8:30   1.944|  12:30   8.100|  16:30   1.620|  20:30    .972
        0:36    .648|   4:36   1.296|   8:36   1.944|  12:36   8.100|  16:36   1.620|  20:36    .972
        0:42    .648|   4:42   1.296|   8:42   1.944|  12:42   5.832|  16:42   1.620|  20:42    .648
        0:48    .648|   4:48   1.296|   8:48   1.944|  12:48   5.832|  16:48   1.620|  20:48    .648
        0:54    .648|   4:54   1.296|   8:54   1.944|  12:54   5.508|  16:54   1.620|  20:54    .972
        1:00    .648|   5:00   1.296|   9:00   1.944|  13:00   5.508|  17:00   1.620|  21:00    .972
        1:06    .648|   5:06   1.296|   9:06   1.944|  13:06   3.888|  17:06    .972|  21:06    .972
        1:12    .648|   5:12   1.296|   9:12   1.944|  13:12   3.888|  17:12    .972|  21:12    .972
        1:18    .648|   5:18   1.296|   9:18   1.944|  13:18   3.240|  17:18    .972|  21:18    .648
        1:24    .648|   5:24   1.296|   9:24   1.944|  13:24   3.240|  17:24    .972|  21:24    .648
        1:30    .648|   5:30   1.296|   9:30   1.944|  13:30   3.240|  17:30   1.296|  21:30    .972
        1:36    .648|   5:36   1.296|   9:36   1.944|  13:36   3.240|  17:36   1.296|  21:36    .972
        1:42    .648|   5:42   1.296|   9:42   1.944|  13:42   3.240|  17:42    .972|  21:42    .648
        1:48    .648|   5:48   1.296|   9:48   1.944|  13:48   3.240|  17:48    .972|  21:48    .648
        1:54    .648|   5:54   1.296|   9:54   1.944|  13:54   3.240|  17:54   1.296|  21:54    .972
        2:00    .648|   6:00   1.296|  10:00   1.944|  14:00   3.240|  18:00   1.296|  22:00    .972
        2:06    .648|   6:06   1.296|  10:06   1.944|  14:06   3.240|  18:06    .972|  22:06    .648
        2:12    .648|   6:12   1.296|  10:12   1.944|  14:12   3.240|  18:12    .972|  22:12    .648
        2:18    .648|   6:18   1.296|  10:18   3.564|  14:18   1.944|  18:18    .972|  22:18    .648
        2:24    .648|   6:24   1.296|  10:24   3.564|  14:24   1.944|  18:24    .972|  22:24    .648
        2:30    .648|   6:30   1.296|  10:30   3.564|  14:30   1.944|  18:30    .972|  22:30    .972
        2:36    .648|   6:36   1.296|  10:36   3.564|  14:36   1.944|  18:36    .972|  22:36    .972
        2:42    .648|   6:42   1.296|  10:42   3.564|  14:42   1.944|  18:42   1.296|  22:42    .648
        2:48    .648|   6:48   1.296|  10:48   3.564|  14:48   1.944|  18:48   1.296|  22:48    .648
        2:54    .648|   6:54   1.296|  10:54   3.564|  14:54   1.944|  18:54    .972|  22:54    .972
        3:00    .648|   7:00   1.296|  11:00   3.564|  15:00   1.944|  19:00    .972|  23:00    .972
        3:06    .648|   7:06   1.296|  11:06   3.564|  15:06   1.944|  19:06    .972|  23:06    .648
        3:12    .648|   7:12   1.296|  11:12   3.564|  15:12   1.944|  19:12    .972|  23:12    .648
        3:18    .648|   7:18   1.296|  11:18   4.860|  15:18   1.620|  19:18   1.296|  23:18    .648
        3:24    .648|   7:24   1.296|  11:24   4.860|  15:24   1.620|  19:24   1.296|  23:24    .648
        3:30    .648|   7:30   1.296|  11:30   7.128|  15:30   1.620|  19:30    .972|  23:30    .648
        3:36    .648|   7:36   1.296|  11:36   7.128|  15:36   1.620|  19:36    .972|  23:36    .648
        3:42    .648|   7:42   1.296|  11:42  17.172|  15:42   1.620|  19:42   1.296|  23:42    .972
        3:48    .648|   7:48   1.296|  11:48  17.172|  15:48   1.620|  19:48   1.296|  23:48    .972
        3:54    .648|   7:54   1.296|  11:54  35.640|  15:54   1.620|  19:54    .972|  23:54   1.296
        4:00    .648|   8:00   1.296|  12:00  35.640|  16:00   1.620|  20:00    .972|  24:00   1.296

R0001:C00013----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)---------------|
--------------------------
| CALIB STANDHYD          |   Area     (ha)=   10.00
| 01:2101       DT= 1.00  |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
--------------------------

                             IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       5.00         5.00
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=        .50         2.00
      Length            (m)=     100.00        35.00
      Mannings n            =       .013         .150

      Max.eff.Inten.(mm/hr)=      72.90        32.31
                      over (min)      4.00        11.00
      Storage Coeff.  (min)=      3.57 (ii)   11.10 (ii)
      Unit Hyd. Tpeak (min)=      4.00        11.00
      Unit Hyd. peak  (cms)=       .30          .10
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .59          .30          .835 (iii)
      TIME TO PEAK    (hrs)=     12.20        12.30        12.200
      RUNOFF VOLUME    (mm)=     62.80        17.37        31.002
      TOTAL RAINFALL   (mm)=     64.80        64.80        64.800
      RUNOFF COEFFICIENT   =       .97          .27          .478

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  54.0    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.

R0001:C00014----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
--------------------------
| CALIB NASHYD            |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00  |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
--------------------------  U.H. Tp(hrs)=    1.020

      Unit Hyd Qpeak  (cms)=     .258

      PEAK FLOW       (cms)=     .061 (i)
      TIME TO PEAK    (hrs)=  13.200
      DURATION        (hrs)=  31.100, (dddd|hh:mm:)=   1|07:06
      AVERAGE FLOW    (cms)=     .007
      RUNOFF VOLUME    (mm)=   11.911
      TOTAL RAINFALL   (mm)=   64.800
      RUNOFF COEFFICIENT   =     .184

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

R0001:C00015----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2103 (East Developed Area)--------------|
--------------------------
| CALIB STANDHYD          |   Area     (ha)=    1.70
| 03:2103       DT= 1.00  |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
--------------------------

                             IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       1.10          .60
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=        .50         2.00
      Length            (m)=     295.00        35.00
      Mannings n            =       .013         .150

      Max.eff.Inten.(mm/hr)=      72.90        77.32
                      over (min)      7.00        12.00
      Storage Coeff.  (min)=      6.83 (ii)   12.14 (ii)
      Unit Hyd. Tpeak (min)=      7.00        12.00
      Unit Hyd. peak  (cms)=       .16          .09
                                                      *TOTALS*
      PEAK FLOW       (cms)=       .12          .08          .193 (iii)
      TIME TO PEAK    (hrs)=     12.22        12.30        12.250
      RUNOFF VOLUME    (mm)=     62.80        33.61        45.286
      TOTAL RAINFALL   (mm)=     64.80        64.80        64.800
      RUNOFF COEFFICIENT   =       .97          .52          .699

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

R0001:C00016----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2104 (East Natural Area)------------|
--------------------------
| CALIB NASHYD            |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00  |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
--------------------------  U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=     .563

      PEAK FLOW       (cms)=     .146 (i)
      TIME TO PEAK    (hrs)=  12.900
      DURATION        (hrs)=  29.300, (dddd|hh:mm:)=   1|05:18
      AVERAGE FLOW    (cms)=     .015
      RUNOFF VOLUME    (mm)=   14.224
      TOTAL RAINFALL   (mm)=   64.800
      RUNOFF COEFFICIENT   =     .220

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

R0001:C00017----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2105 (Central Natural Area)------------|
--------------------------
| CALIB NASHYD            |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00  |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
--------------------------  U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .097 (i)
      TIME TO PEAK    (hrs)=  14.900
      DURATION        (hrs)=  40.000, (dddd|hh:mm:)=   1|16:00
      AVERAGE FLOW    (cms)=     .017
      RUNOFF VOLUME    (mm)=   11.514
      TOTAL RAINFALL   (mm)=   64.800
      RUNOFF COEFFICIENT   =     .178

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

R0001:C00018----------------------------------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Silver Creek-----|
----------------------
| ADD HYD           |
| 06:UC-West        |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
----------------------                            (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 01:2101            10.000      .835   12.200    31.002    .000
                       +ID 2 02:2102             6.900      .061   13.200    11.911    .000
                        ==========================================================
                        SUM   06:UC-West        16.900      .849   12.200    23.207    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00019----------------------------------------------------------------------------------------------------
--------------------
| SAVE HYD          |   AREA       (ha)=   16.900
| ID=06:UC-West     |   QPEAK     (cms)=     .849 (i)
| DT= 1.00 PCYC=-1  |   TPEAK     (hrs)=   12.200
--------------------   VOLUME      (mm)=   23.207
  Filename: UC-West.0001
  Comments: UC-West

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

R0001:C00020----------------------------------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
----------------------
| ADD HYD           |
| 07:UC-East        |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
----------------------                            (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 03:2103             1.700      .193   12.250    45.286    .000
                       +ID 2 04:2104            10.900      .146   12.900    14.224    .000
                       +ID 3 05:2105            21.500      .097   14.900    11.514    .000
                        ==========================================================
                        SUM   07:UC-East        34.100      .262   12.267    14.064    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00021----------------------------------------------------------------------------------------------------
--------------------
| SAVE HYD          |   AREA       (ha)=   34.100
| ID=07:UC-East     |   QPEAK     (cms)=     .262 (i)
| DT= 1.00 PCYC=-1  |   TPEAK     (hrs)=   12.267
--------------------   VOLUME      (mm)=   14.064
  Filename: UC-East.0001
  Comments: UC-East

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

R0001:C00022----------------------------------------------------------------------------------------------------
*#*************************************************************************
*#******************POST-DEVELOPMENT UNCONTROLLED - 10 YEAR Event ***************
*#*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#              SCS Rainfall Distribution
*
*#*************************************************************************
--------------------
| MASS STORM        |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
| Ptotal= 74.40 mm  |    Comments: 24 hour SCS II storm mass curve
--------------------
                         Duration of storm        =   24.00 hrs
                         Mass curve time step     =   12.00 min
                         Selected storm time step =    6.00 min
                         Volume of derived storm  =   74.40 mm

       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
        0:06    .000|   4:06    .744|   8:06   1.488|  12:06  83.700|  16:06   1.860|  20:06   1.488
        0:12    .000|   4:12    .744|   8:12   1.488|  12:12  83.700|  16:12   1.860|  20:12   1.488
        0:18    .744|   4:18   1.488|   8:18   2.232|  12:18  14.880|  16:18   1.860|  20:18   1.116
        0:24    .744|   4:24   1.488|   8:24   2.232|  12:24  14.880|  16:24   1.860|  20:24   1.116
        0:30    .744|   4:30   1.488|   8:30   2.232|  12:30   9.300|  16:30   1.860|  20:30   1.116
        0:36    .744|   4:36   1.488|   8:36   2.232|  12:36   9.300|  16:36   1.860|  20:36   1.116
        0:42    .744|   4:42   1.488|   8:42   2.232|  12:42   6.696|  16:42   1.860|  20:42    .744
        0:48    .744|   4:48   1.488|   8:48   2.232|  12:48   6.696|  16:48   1.860|  20:48    .744
        0:54    .744|   4:54   1.488|   8:54   2.232|  12:54   6.324|  16:54   1.860|  20:54   1.116
        1:00    .744|   5:00   1.488|   9:00   2.232|  13:00   6.324|  17:00   1.860|  21:00   1.116
        1:06    .744|   5:06   1.488|   9:06   2.232|  13:06   4.464|  17:06   1.116|  21:06   1.116
        1:12    .744|   5:12   1.488|   9:12   2.232|  13:12   4.464|  17:12   1.116|  21:12   1.116
        1:18    .744|   5:18   1.488|   9:18   2.232|  13:18   3.720|  17:18   1.116|  21:18    .744
        1:24    .744|   5:24   1.488|   9:24   2.232|  13:24   3.720|  17:24   1.116|  21:24    .744
        1:30    .744|   5:30   1.488|   9:30   2.232|  13:30   3.720|  17:30   1.488|  21:30   1.116
        1:36    .744|   5:36   1.488|   9:36   2.232|  13:36   3.720|  17:36   1.488|  21:36   1.116
        1:42    .744|   5:42   1.488|   9:42   2.232|  13:42   3.720|  17:42   1.116|  21:42    .744
        1:48    .744|   5:48   1.488|   9:48   2.232|  13:48   3.720|  17:48   1.116|  21:48    .744
        1:54    .744|   5:54   1.488|   9:54   2.232|  13:54   3.720|  17:54   1.488|  21:54   1.116
        2:00    .744|   6:00   1.488|  10:00   2.232|  14:00   3.720|  18:00   1.488|  22:00   1.116
        2:06    .744|   6:06   1.488|  10:06   2.232|  14:06   3.720|  18:06   1.116|  22:06    .744
        2:12    .744|   6:12   1.488|  10:12   2.232|  14:12   3.720|  18:12   1.116|  22:12    .744
        2:18    .744|   6:18   1.488|  10:18   4.092|  14:18   2.232|  18:18   1.116|  22:18    .744
        2:24    .744|   6:24   1.488|  10:24   4.092|  14:24   2.232|  18:24   1.116|  22:24    .744
        2:30    .744|   6:30   1.488|  10:30   4.092|  14:30   2.232|  18:30   1.116|  22:30   1.116
        2:36    .744|   6:36   1.488|  10:36   4.092|  14:36   2.232|  18:36   1.116|  22:36   1.116
        2:42    .744|   6:42   1.488|  10:42   4.092|  14:42   2.232|  18:42   1.488|  22:42    .744
        2:48    .744|   6:48   1.488|  10:48   4.092|  14:48   2.232|  18:48   1.488|  22:48    .744
        2:54    .744|   6:54   1.488|  10:54   4.092|  14:54   2.232|  18:54   1.116|  22:54   1.116
        3:00    .744|   7:00   1.488|  11:00   4.092|  15:00   2.232|  19:00   1.116|  23:00   1.116
        3:06    .744|   7:06   1.488|  11:06   4.092|  15:06   2.232|  19:06   1.116|  23:06    .744
```

```
00617>       3:12    .744|   7:12   1.488|  11:12   4.092|  15:12   2.232|  19:12   1.116|  23:12    .744
00618>       3:18    .744|   7:18   1.488|  11:18   5.580|  15:18   1.860|  19:18   1.488|  23:18    .744
00619>       3:24    .744|   7:24   1.488|  11:24   5.580|  15:24   1.860|  19:24   1.488|  23:24    .744
00620>       3:30    .744|   7:30   1.488|  11:30   8.184|  15:30   1.860|  19:30   1.116|  23:30    .744
00621>       3:36    .744|   7:36   1.488|  11:36   8.184|  15:36   1.860|  19:36   1.116|  23:36    .744
00622>       3:42    .744|   7:42   1.488|  11:42  19.716|  15:42   1.860|  19:42   1.488|  23:42   1.116
00623>       3:48    .744|   7:48   1.488|  11:48  19.716|  15:48   1.860|  19:48   1.488|  23:48   1.116
00624>       3:54    .744|   7:54   1.488|  11:54  40.920|  15:54   1.860|  19:54   1.116|  23:54   1.488
00625>       4:00    .744|   8:00   1.488|  12:00  40.920|  16:00   1.860|  20:00   1.116|  24:00   1.488
00626>
00627> ------------------------------------------------------------------------------------------------------
00628> R0001:C00023------------------------------------------------------------------------------------------
00629> *#----------------|-----------Area 2101 (West Developed Area)---------------|
00630>  -------------------------
00631> | CALIB STANDHYD         |   Area    (ha)=   10.00
00632> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00633>  -------------------------
00634>                             IMPERVIOUS    PERVIOUS (i)
00635>       Surface Area     (ha)=       5.00         5.00
00636>       Dep. Storage     (mm)=       2.00         5.00
00637>       Average Slope     (%)=        .50         2.00
00638>       Length            (m)=     100.00        35.00
00639>       Mannings n            =       .013         .150
00640>
00641>       Max.eff.Inten.(mm/hr)=      83.70        42.02
00642>                   over (min)       3.00        10.00
00643>       Storage Coeff.  (min)=       3.38 (ii)   10.16 (ii)
00644>       Unit Hyd. Tpeak (min)=       3.00        10.00
00645>       Unit Hyd. peak  (cms)=        .35          .11
00646>                                                        *TOTALS*
00647>       PEAK FLOW       (cms)=        .68          .40         1.028 (iii)
00648>       TIME TO PEAK    (hrs)=      12.20        12.28        12.200
00649>       RUNOFF VOLUME    (mm)=      72.39        22.26        37.301
00650>       TOTAL RAINFALL   (mm)=      74.40        74.40        74.400
00651>       RUNOFF COEFFICIENT   =        .97          .30          .501
00652>
00653>         (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00654>             CN* =  54.0    Ia = Dep. Storage  (Above)
00655>        (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00656>       (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00657>
00658> ------------------------------------------------------------------------------------------------------
00659> R0001:C00024------------------------------------------------------------------------------------------
00660> *#----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
00661>  -------------------------
00662> | CALIB NASHYD           |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
00663> | 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
00664>  -------------------------  U.H. Tp(hrs)=    1.020
00665>
00666>       Unit Hyd Qpeak  (cms)=     .258
00667>
00668>       PEAK FLOW       (cms)=     .081 (i)
00669>       TIME TO PEAK    (hrs)=   13.200
00670>       DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
00671>       AVERAGE FLOW    (cms)=     .010
00672>       RUNOFF VOLUME    (mm)=   15.631
00673>       TOTAL RAINFALL   (mm)=   74.400
00674>       RUNOFF COEFFICIENT   =     .210
00675>
00676>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00677>
00678> ------------------------------------------------------------------------------------------------------
00679> R0001:C00025------------------------------------------------------------------------------------------
00680> *#----------------|-----------Area 2103 (East Developed Area)--------------|
00681>  -------------------------
00682> | CALIB STANDHYD         |   Area    (ha)=    1.70
00683> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00684>  -------------------------
00685>                             IMPERVIOUS    PERVIOUS (i)
00686>       Surface Area     (ha)=       1.10          .60
00687>       Dep. Storage     (mm)=       2.00         5.00
00688>       Average Slope     (%)=        .50         2.00
00689>       Length            (m)=     295.00        35.00
00690>       Mannings n            =       .013         .150
00691>
00692>       Max.eff.Inten.(mm/hr)=      83.70        95.74
00693>                   over (min)       6.00        11.00
00694>       Storage Coeff.  (min)=       6.46 (ii)   11.34 (ii)
00695>       Unit Hyd. Tpeak (min)=       6.00        11.00
00696>       Unit Hyd. peak  (cms)=        .18          .10
00697>                                                        *TOTALS*
00698>       PEAK FLOW       (cms)=        .14          .11          .236 (iii)
00699>       TIME TO PEAK    (hrs)=      12.22        12.28        12.233
00700>       RUNOFF VOLUME    (mm)=      72.40        41.36        53.777
00701>       TOTAL RAINFALL   (mm)=      74.40        74.40        74.400
00702>       RUNOFF COEFFICIENT   =        .97          .56          .723
00703>
00704>         (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00705>             CN* =  74.0    Ia = Dep. Storage  (Above)
00706>        (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00707>       (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00708>
00709> ------------------------------------------------------------------------------------------------------
00710> R0001:C00026------------------------------------------------------------------------------------------
00711> *#----------------|-----------Area 2104 (East Natural Area)-------------|
00712>  -------------------------
00713> | CALIB NASHYD           |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
00714> | 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
00715>  -------------------------  U.H. Tp(hrs)=     .740
00716>
00717>       Unit Hyd Qpeak  (cms)=     .563
00718>
00719>       PEAK FLOW       (cms)=     .196 (i)
00720>       TIME TO PEAK    (hrs)=   12.900
00721>       DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
00722>       AVERAGE FLOW    (cms)=     .019
00723>       RUNOFF VOLUME    (mm)=   18.769
00724>       TOTAL RAINFALL   (mm)=   74.400
00725>       RUNOFF COEFFICIENT   =     .252
00726>
00727>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00728>
00729> ------------------------------------------------------------------------------------------------------
00730> R0001:C00027------------------------------------------------------------------------------------------
00731> *#----------------|-----------Area 2105 (Central Natural Area)-------------|
00732>  -------------------------
00733> | CALIB NASHYD           |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
00734> | 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
00735>  -------------------------  U.H. Tp(hrs)=    2.350
00736>
00737>       Unit Hyd Qpeak  (cms)=     .349
00738>
00739>       PEAK FLOW       (cms)=     .129 (i)
00740>       TIME TO PEAK    (hrs)=   14.900
00741>       DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
00742>       AVERAGE FLOW    (cms)=     .023
00743>       RUNOFF VOLUME    (mm)=   15.256
00744>       TOTAL RAINFALL   (mm)=   74.400
00745>       RUNOFF COEFFICIENT   =     .205
00746>
00747>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00748>
00749> ------------------------------------------------------------------------------------------------------
00750> R0001:C00028------------------------------------------------------------------------------------------
00751> *#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00752>  -------------------------
00753> | ADD HYD                |
00754> | 06:UC-West             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00755>  -------------------------                        (ha)     (cms)    (hrs)      (mm)    (cms)
00756>                            ID 1 01:2101          10.000    1.028   12.200    37.301    .000
00757>                           +ID 2 02:2102           6.900     .081   13.200    15.631    .000
00758>                            ==========================================================
00759>                            SUM   06:UC-West      16.900    1.048   12.200    28.454    .000
00760>
00761>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00762>
00763> ------------------------------------------------------------------------------------------------------
00764> R0001:C00029------------------------------------------------------------------------------------------
00765>  -------------------
00766> | SAVE HYD         |   AREA       (ha)=   16.900
00767> | ID=06:UC-West    |   QPEAK     (cms)=    1.048 (i)
00768> | DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   12.200
00769>  -------------------  VOLUME      (mm)=   28.454
00770>   Filename: UC-West.0001
00771>   Comments: UC-West
00772>
00773>       (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00774> ------------------------------------------------------------------------------------------------------
00775> R0001:C00030------------------------------------------------------------------------------------------
00776> *#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00777>  -------------------------
00778> | ADD HYD                |
00779> | 07:UC-East             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00780>  -------------------------                        (ha)     (cms)    (hrs)      (mm)    (cms)
00781>                            ID 1 03:2103           1.700     .236   12.233    53.777    .000
00782>                           +ID 2 04:2104          10.900     .196   12.900    18.769    .000
00783>                           +ID 3 05:2105          21.500     .129   14.900    15.256    .000
00784>                            ==========================================================
00785>                            SUM   07:UC-East       34.100     .329   12.267    18.299    .000
00786>
00787>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00788>
00789> ------------------------------------------------------------------------------------------------------
00790> R0001:C00031------------------------------------------------------------------------------------------
00791>  -------------------
00792> | SAVE HYD         |   AREA       (ha)=   34.100
00793> | ID=07:UC-East    |   QPEAK     (cms)=     .329 (i)
00794> | DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   12.267
00795>  -------------------  VOLUME      (mm)=   18.299
00796>   Filename: UC-East.0001
00797>   Comments: UC-East
00798>
00799>       (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00800> ------------------------------------------------------------------------------------------------------
00801> R0001:C00032------------------------------------------------------------------------------------------
00802> *#*********************************************************************
00803> *#*****************POST-DEVELOPMENT UNCONTROLLED - 25 YEAR Event ***************
00804> *#*********************************************************************
00805> *
00806> *#   Rainfall Depths per MTO - Basins East of Collingwood
00807> *#              SCS Rainfall Distribution
00808> *
00809> *#*********************************************************************
00810>  -------------------
00811> | MASS STORM       |   Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
00812> | Ptotal= 86.40 mm |   Comments: 24 hour SCS II storm mass curve
00813>  -------------------
00814>                             Duration of storm        =   24.00 hrs
00815>                             Mass curve time step     =   12.00 min
00816>                             Selected storm time step =    6.00 min
00817>                             Volume of derived storm  =   86.40 mm
00818>
00819>      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
00820>     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00821>      0:06    .000|   4:06    .864|   8:06   1.728|  12:06  97.200|  16:06   2.160|  20:06   1.728
00822>      0:12    .000|   4:12    .864|   8:12   1.728|  12:12  97.200|  16:12   2.160|  20:12   1.728
00823>      0:18    .864|   4:18   1.728|   8:18   2.592|  12:18  17.280|  16:18   2.160|  20:18   1.296
00824>      0:24    .864|   4:24   1.728|   8:24   2.592|  12:24  17.280|  16:24   2.160|  20:24   1.296
00825>      0:30    .864|   4:30   1.728|   8:30   2.592|  12:30  10.800|  16:30   2.160|  20:30   1.296
00826>      0:36    .864|   4:36   1.728|   8:36   2.592|  12:36  10.800|  16:36   2.160|  20:36   1.296
00827>      0:42    .864|   4:42   1.728|   8:42   2.592|  12:42   7.776|  16:42   2.160|  20:42    .864
00828>      0:48    .864|   4:48   1.728|   8:48   2.592|  12:48   7.776|  16:48   2.160|  20:48    .864
00829>      0:54    .864|   4:54   1.728|   8:54   2.592|  12:54   7.344|  16:54   2.160|  20:54   1.296
00830>      1:00    .864|   5:00   1.728|   9:00   2.592|  13:00   7.344|  17:00   2.160|  21:00   1.296
00831>      1:06    .864|   5:06   1.728|   9:06   2.592|  13:06   5.184|  17:06   1.296|  21:06   1.296
00832>      1:12    .864|   5:12   1.728|   9:12   2.592|  13:12   5.184|  17:12   1.296|  21:12   1.296
00833>      1:18    .864|   5:18   1.728|   9:18   2.592|  13:18   4.320|  17:18   1.296|  21:18    .864
00834>      1:24    .864|   5:24   1.728|   9:24   2.592|  13:24   4.320|  17:24   1.296|  21:24    .864
00835>      1:30    .864|   5:30   1.728|   9:30   2.592|  13:30   4.320|  17:30   1.728|  21:30   1.296
00836>      1:36    .864|   5:36   1.728|   9:36   2.592|  13:36   4.320|  17:36   1.728|  21:36   1.296
00837>      1:42    .864|   5:42   1.728|   9:42   2.592|  13:42   4.320|  17:42   1.296|  21:42    .864
00838>      1:48    .864|   5:48   1.728|   9:48   2.592|  13:48   4.320|  17:48   1.296|  21:48    .864
00839>      1:54    .864|   5:54   1.728|   9:54   2.592|  13:54   4.320|  17:54   1.728|  21:54   1.296
00840>      2:00    .864|   6:00   1.728|  10:00   2.592|  14:00   4.320|  18:00   1.728|  22:00   1.296
00841>      2:06    .864|   6:06   1.728|  10:06   2.592|  14:06   4.320|  18:06   1.296|  22:06    .864
00842>      2:12    .864|   6:12   1.728|  10:12   2.592|  14:12   4.320|  18:12   1.296|  22:12    .864
00843>      2:18    .864|   6:18   1.728|  10:18   4.752|  14:18   2.592|  18:18   1.296|  22:18    .864
00844>      2:24    .864|   6:24   1.728|  10:24   4.752|  14:24   2.592|  18:24   1.296|  22:24    .864
00845>      2:30    .864|   6:30   1.728|  10:30   4.752|  14:30   2.592|  18:30   1.296|  22:30   1.296
00846>      2:36    .864|   6:36   1.728|  10:36   4.752|  14:36   2.592|  18:36   1.296|  22:36   1.296
00847>      2:42    .864|   6:42   1.728|  10:42   4.752|  14:42   2.592|  18:42   1.728|  22:42    .864
00848>      2:48    .864|   6:48   1.728|  10:48   4.752|  14:48   2.592|  18:48   1.728|  22:48    .864
00849>      2:54    .864|   6:54   1.728|  10:54   4.752|  14:54   2.592|  18:54   1.296|  22:54   1.296
00850>      3:00    .864|   7:00   1.728|  11:00   4.752|  15:00   2.592|  19:00   1.296|  23:00   1.296
00851>      3:06    .864|   7:06   1.728|  11:06   4.752|  15:06   2.592|  19:06   1.296|  23:06    .864
00852>      3:12    .864|   7:12   1.728|  11:12   4.752|  15:12   2.592|  19:12   1.296|  23:12    .864
00853>      3:18    .864|   7:18   1.728|  11:18   6.480|  15:18   2.160|  19:18   1.728|  23:18    .864
00854>      3:24    .864|   7:24   1.728|  11:24   6.480|  15:24   2.160|  19:24   1.728|  23:24    .864
00855>      3:30    .864|   7:30   1.728|  11:30   9.504|  15:30   2.160|  19:30   1.296|  23:30    .864
00856>      3:36    .864|   7:36   1.728|  11:36   9.504|  15:36   2.160|  19:36   1.296|  23:36    .864
00857>      3:42    .864|   7:42   1.728|  11:42  22.896|  15:42   2.160|  19:42   1.728|  23:42   1.296
00858>      3:48    .864|   7:48   1.728|  11:48  22.896|  15:48   2.160|  19:48   1.728|  23:48   1.296
00859>      3:54    .864|   7:54   1.728|  11:54  47.520|  15:54   2.160|  19:54   1.296|  23:54   1.728
00860>      4:00    .864|   8:00   1.728|  12:00  47.520|  16:00   2.160|  20:00   1.296|  24:00   1.728
00861>
00862> ------------------------------------------------------------------------------------------------------
00863> R0001:C00033------------------------------------------------------------------------------------------
00864> *#----------------|-----------Area 2101 (West Developed Area)---------------|
00865>  -------------------------
00866> | CALIB STANDHYD         |   Area    (ha)=   10.00
00867> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00868>  -------------------------
00869>                             IMPERVIOUS    PERVIOUS (i)
00870>       Surface Area     (ha)=       5.00         5.00
00871>       Dep. Storage     (mm)=       2.00         5.00
00872>       Average Slope     (%)=        .50         2.00
00873>       Length            (m)=     100.00        35.00
00874>       Mannings n            =       .013         .150
00875>
00876>       Max.eff.Inten.(mm/hr)=      97.20        55.29
00877>                   over (min)       3.00         9.00
00878>       Storage Coeff.  (min)=       3.18 (ii)    9.26 (ii)
00879>       Unit Hyd. Tpeak (min)=       3.00         9.00
00880>       Unit Hyd. peak  (cms)=        .36          .12
00881>                                                        *TOTALS*
00882>       PEAK FLOW       (cms)=        .80          .54         1.285 (iii)
00883>       TIME TO PEAK    (hrs)=      12.20        12.27        12.200
00884>       RUNOFF VOLUME    (mm)=      84.40        28.90        45.551
00885>       TOTAL RAINFALL   (mm)=      86.40        86.40        86.401
00886>       RUNOFF COEFFICIENT   =        .98          .33          .527
00887>
00888>         (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00889>             CN* =  54.0    Ia = Dep. Storage  (Above)
00890>        (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00891>       (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00892>
00893> ------------------------------------------------------------------------------------------------------
00894> R0001:C00034------------------------------------------------------------------------------------------
00895> *#----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
00896>  -------------------------
00897> | CALIB NASHYD           |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
00898> | 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
00899>  -------------------------  U.H. Tp(hrs)=    1.020
00900>
00901>       Unit Hyd Qpeak  (cms)=     .258
00902>
00903>       PEAK FLOW       (cms)=     .108 (i)
00904>       TIME TO PEAK    (hrs)=   13.200
00905>       DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
00906>       AVERAGE FLOW    (cms)=     .013
00907>       RUNOFF VOLUME    (mm)=   20.798
00908>       TOTAL RAINFALL   (mm)=   86.400
00909>       RUNOFF COEFFICIENT   =     .241
00910>
00911>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00912>
00913> ------------------------------------------------------------------------------------------------------
00914> R0001:C00035------------------------------------------------------------------------------------------
00915> *#----------------|-----------Area 2103 (East Developed Area)--------------|
00916>  -------------------------
00917> | CALIB STANDHYD         |   Area    (ha)=    1.70
00918> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00919>  -------------------------
00920>                             IMPERVIOUS    PERVIOUS (i)
00921>       Surface Area     (ha)=       1.10          .60
00922>       Dep. Storage     (mm)=       2.00         5.00
00923>       Average Slope     (%)=        .50         2.00
00924>       Length            (m)=     295.00        35.00
```

```
      Mannings n           =       .013         .150
      Max.eff.Inten.(mm/hr)=     97.20       118.48
                over (min)      6.00        11.00
      Storage Coeff. (min)=     6.09 (ii)   10.57 (ii)
      Unit Hyd. Tpeak (min)=     6.00        11.00
      Unit Hyd. peak  (cms)=      .19         .11
                                                    *TOTALS*
      PEAK FLOW       (cms)=      .16         .13          .287 (iii)
      TIME TO PEAK    (hrs)=    12.22       12.28        12.233
      RUNOFF VOLUME    (mm)=    84.39       51.42        64.611
      TOTAL RAINFALL   (mm)=    86.40       86.40        86.401
      RUNOFF COEFFICIENT   =      .98         .60          .748

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

R0001:C00036-----------------------------------------------------------------------------------------------
*#-----------------|------------Area 2104 (East Natural Area)-------------|
 -------------------
| CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=     .563

      PEAK FLOW       (cms)=     .264 (i)
      TIME TO PEAK    (hrs)=   12.900
      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
      AVERAGE FLOW    (cms)=     .026
      RUNOFF VOLUME    (mm)=   25.030
      TOTAL RAINFALL   (mm)=   86.400
      RUNOFF COEFFICIENT   =     .290

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

R0001:C00037-----------------------------------------------------------------------------------------------
*#-----------------|------------Area 2105 (Central Natural Area)-----------|
 -------------------
| CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .175 (i)
      TIME TO PEAK    (hrs)=   14.900
      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
      AVERAGE FLOW    (cms)=     .031
      RUNOFF VOLUME    (mm)=   20.469
      TOTAL RAINFALL   (mm)=   86.400
      RUNOFF COEFFICIENT   =     .237

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

R0001:C00038-----------------------------------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
 -------------------
| ADD HYD                |
| 06:UC-West             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                        (ha)     (cms)    (hrs)      (mm)   (cms)
                         ID 1 01:2101          10.000    1.285   12.200    45.551    .000
                        +ID 2 02:2102           6.900     .108   13.200    20.798    .000
                        ==========================================================
                        SUM   06:UC-West       16.900    1.313   12.200    35.445    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00039-----------------------------------------------------------------------------------------------
 -------------------
| SAVE HYD         |   AREA       (ha)=   16.900
| ID=06:UC-West    |   QPEAK      (cms)=    1.313 (i)
| DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=   12.200
 -------------------   VOLUME       (mm)=   35.445
  Filename: UC-West.0001
  Comments: UC-West

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

R0001:C00040-----------------------------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
 -------------------
| ADD HYD                |
| 07:UC-East             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                        (ha)     (cms)    (hrs)      (mm)   (cms)
                         ID 1 03:2103           1.700     .287   12.233    64.611    .000
                        +ID 2 04:2104          10.900     .264   12.900    25.030    .000
                        +ID 3 05:2105          21.500     .175   14.900    20.469    .000
                        ==========================================================
                        SUM   07:UC-East       34.100     .419   12.267    24.128    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00041-----------------------------------------------------------------------------------------------
 -------------------
| SAVE HYD         |   AREA       (ha)=   34.100
| ID=07:UC-East    |   QPEAK      (cms)=    .419 (i)
| DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=   12.267
 -------------------   VOLUME       (mm)=   24.128
  Filename: UC-East.0001
  Comments: UC-East

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

R0001:C00042-----------------------------------------------------------------------------------------------
*#**************************************************************************
*#****************POST-DEVELOPMENT UNCONTROLLED - 50 YEAR Event **************
*#**************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             SCS Rainfall Distribution
*
*#**************************************************************************
 -------------------
| MASS STORM       |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
| Ptotal= 96.00 mm |    Comments: 24 hour SCS II storm mass curve
 -------------------
                          Duration of storm       =   24.00 hrs
                          Mass curve time step    =   12.00 min
                          Selected storm time step =   6.00 min
                          Volume of derived storm  =   96.00 mm

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
      hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr| hh:mm   mm/hr
       0:06    .000|  4:06    .960|  8:06   1.920| 12:06 108.000| 16:06   2.400| 20:06   1.920
       0:12    .000|  4:12    .960|  8:12   1.920| 12:12 108.000| 16:12   2.400| 20:12   1.920
       0:18    .960|  4:18   1.920|  8:18   2.880| 12:18  19.200| 16:18   2.400| 20:18   1.440
       0:24    .960|  4:24   1.920|  8:24   2.880| 12:24  19.200| 16:24   2.400| 20:24   1.440
       0:30    .960|  4:30   1.920|  8:30   2.880| 12:30  12.000| 16:30   2.400| 20:30   1.440
       0:36    .960|  4:36   1.920|  8:36   2.880| 12:36  12.000| 16:36   2.400| 20:36   1.440
       0:42    .960|  4:42   1.920|  8:42   2.880| 12:42   8.640| 16:42   2.400| 20:42    .960
       0:48    .960|  4:48   1.920|  8:48   2.880| 12:48   8.640| 16:48   2.400| 20:48    .960
       0:54    .960|  4:54   1.920|  8:54   2.880| 12:54   8.160| 16:54   2.400| 20:54   1.440
       1:00    .960|  5:00   1.920|  9:00   2.880| 13:00   8.160| 17:00   2.400| 21:00   1.440
       1:06    .960|  5:06   1.920|  9:06   2.880| 13:06   5.760| 17:06   1.440| 21:06   1.440
       1:12    .960|  5:12   1.920|  9:12   2.880| 13:12   5.760| 17:12   1.440| 21:12   1.440
       1:18    .960|  5:18   1.920|  9:18   2.880| 13:18   4.800| 17:18   1.440| 21:18    .960
       1:24    .960|  5:24   1.920|  9:24   2.880| 13:24   4.800| 17:24   1.440| 21:24    .960
       1:30    .960|  5:30   1.920|  9:30   2.880| 13:30   4.800| 17:30   1.920| 21:30   1.440
       1:36    .960|  5:36   1.920|  9:36   2.880| 13:36   4.800| 17:36   1.920| 21:36   1.440
       1:42    .960|  5:42   1.920|  9:42   2.880| 13:42   4.800| 17:42   1.440| 21:42    .960
       1:48    .960|  5:48   1.920|  9:48   2.880| 13:48   4.800| 17:48   1.440| 21:48    .960
       1:54    .960|  5:54   1.920|  9:54   2.880| 13:54   4.800| 17:54   1.920| 21:54   1.440
       2:00    .960|  6:00   1.920| 10:00   2.880| 14:00   4.800| 18:00   1.920| 22:00   1.440
       2:06    .960|  6:06   1.920| 10:06   2.880| 14:06   4.800| 18:06   1.440| 22:06    .960
       2:12    .960|  6:12   1.920| 10:12   2.880| 14:12   4.800| 18:12   1.440| 22:12    .960
       2:18    .960|  6:18   1.920| 10:18   5.280| 14:18   2.880| 18:18   1.440| 22:18    .960
       2:24    .960|  6:24   1.920| 10:24   5.280| 14:24   2.880| 18:24   1.440| 22:24    .960
       2:30    .960|  6:30   1.920| 10:30   5.280| 14:30   2.880| 18:30   1.440| 22:30   1.440
       2:36    .960|  6:36   1.920| 10:36   5.280| 14:36   2.880| 18:36   1.440| 22:36   1.440
       2:42    .960|  6:42   1.920| 10:42   5.280| 14:42   2.880| 18:42   1.920| 22:42    .960
       2:48    .960|  6:48   1.920| 10:48   5.280| 14:48   2.880| 18:48   1.920| 22:48    .960
       2:54    .960|  6:54   1.920| 10:54   5.280| 14:54   2.880| 18:54   1.440| 22:54   1.440
       3:00    .960|  7:00   1.920| 11:00   5.280| 15:00   2.880| 19:00   1.440| 23:00   1.440
       3:06    .960|  7:06   1.920| 11:06   5.280| 15:06   2.880| 19:06   1.440| 23:06    .960
       3:12    .960|  7:12   1.920| 11:12   5.280| 15:12   2.880| 19:12   1.440| 23:12    .960
       3:18    .960|  7:18   1.920| 11:18   7.200| 15:18   2.400| 19:18   1.920| 23:18    .960
       3:24    .960|  7:24   1.920| 11:24   7.200| 15:24   2.400| 19:24   1.920| 23:24    .960
       3:30    .960|  7:30   1.920| 11:30  10.560| 15:30   2.400| 19:30   1.440| 23:30    .960
       3:36    .960|  7:36   1.920| 11:36  10.560| 15:36   2.400| 19:36   1.440| 23:36    .960
       3:42    .960|  7:42   1.920| 11:42  25.440| 15:42   2.400| 19:42   1.920| 23:42   1.440
       3:48    .960|  7:48   1.920| 11:48  25.440| 15:48   2.400| 19:48   1.920| 23:48   1.440
       3:54    .960|  7:54   1.920| 11:54  52.800| 15:54   2.400| 19:54   1.440| 23:54   1.920
       4:00    .960|  8:00   1.920| 12:00  52.800| 16:00   2.400| 20:00   1.440| 24:00   1.920

R0001:C00043-----------------------------------------------------------------------------------------------
*#-----------------|------------Area 2101 (West Developed Area)---------------|
 -------------------
| CALIB STANDHYD         |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
 ------------------------

                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      5.00         5.00
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=       .50         2.00
      Length            (m)=    100.00        35.00
      Mannings n           =      .013         .150

      Max.eff.Inten.(mm/hr)=    108.00        66.16
                over (min)        3.00         9.00
      Storage Coeff.  (min)=      3.05 (ii)    8.71 (ii)
      Unit Hyd. Tpeak (min)=      3.00         9.00
      Unit Hyd. peak  (cms)=       .37          .13
                                                    *TOTALS*
      PEAK FLOW       (cms)=       .89          .66          1.490 (iii)
      TIME TO PEAK    (hrs)=     12.20        12.27         12.200
      RUNOFF VOLUME    (mm)=     94.00        34.58         52.413
      TOTAL RAINFALL   (mm)=     96.00        96.00         95.999
      RUNOFF COEFFICIENT   =       .98          .36           .546

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  54.0    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.

R0001:C00044-----------------------------------------------------------------------------------------------
*#-----------------|------------Area 2102 (Silver Creek Buffer)-------------|
 -------------------
| CALIB NASHYD           |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=    1.020

      Unit Hyd Qpeak  (cms)=     .258

      PEAK FLOW       (cms)=     .132 (i)
      TIME TO PEAK    (hrs)=   13.200
      DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
      AVERAGE FLOW    (cms)=     .016
      RUNOFF VOLUME    (mm)=   25.304
      TOTAL RAINFALL   (mm)=   96.000
      RUNOFF COEFFICIENT   =     .264

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

R0001:C00045-----------------------------------------------------------------------------------------------
*#-----------------|------------Area 2103 (East Developed Area)---------------|
 -------------------
| CALIB STANDHYD         |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
 ------------------------

                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      1.10          .60
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=       .50         2.00
      Length            (m)=    295.00        35.00
      Mannings n           =      .013         .150

      Max.eff.Inten.(mm/hr)=    108.00       137.95
                over (min)        6.00        10.00
      Storage Coeff.  (min)=      5.84 (ii)   10.05 (ii)
      Unit Hyd. Tpeak (min)=      6.00        10.00
      Unit Hyd. peak  (cms)=       .19          .11
                                                    *TOTALS*
      PEAK FLOW       (cms)=       .18          .16           .334 (iii)
      TIME TO PEAK    (hrs)=     12.22        12.27         12.233
      RUNOFF VOLUME    (mm)=     93.99        59.69         73.418
      TOTAL RAINFALL   (mm)=     96.00        96.00         95.999
      RUNOFF COEFFICIENT   =       .98          .62           .765

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

R0001:C00046-----------------------------------------------------------------------------------------------
*#-----------------|------------Area 2104 (East Natural Area)-------------|
 -------------------
| CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=     .563

      PEAK FLOW       (cms)=     .324 (i)
      TIME TO PEAK    (hrs)=   12.900
      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
      AVERAGE FLOW    (cms)=     .031
      RUNOFF VOLUME    (mm)=   30.444
      TOTAL RAINFALL   (mm)=   96.000
      RUNOFF COEFFICIENT   =     .317

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

R0001:C00047-----------------------------------------------------------------------------------------------
*#-----------------|----------Area 2105 (Central Natural Area)-------------|
 -------------------
| CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
 ------------------------  U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .215 (i)
      TIME TO PEAK    (hrs)=   14.800
      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
      AVERAGE FLOW    (cms)=     .037
      RUNOFF VOLUME    (mm)=   25.025
      TOTAL RAINFALL   (mm)=   96.000
      RUNOFF COEFFICIENT   =     .261

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

R0001:C00048-----------------------------------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
 -------------------
| ADD HYD                |
| 06:UC-West             |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                        (ha)     (cms)    (hrs)      (mm)   (cms)
                         ID 1 01:2101          10.000    1.490   12.200    52.413    .000
                        +ID 2 02:2102           6.900     .132   13.200    25.304    .000
                        ==========================================================
                        SUM   06:UC-West       16.900    1.525   12.200    41.345    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
01233> ------------------------------------------------------------------------------------------------
01234> R0001:C00049-----------------------------------------------------------------------------------
01235> --------------------
01236> | SAVE HYD          |   AREA       (ha)=   16.900
01237> | ID=06:UC-West     |   QPEAK      (cms)=   1.525 (i)
01238> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=   12.200
01239> --------------------   VOLUME       (mm)=   41.345
01240>   Filename: UC-West.0001
01241>   Comments: UC-West
01242>
01243>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01244> ------------------------------------------------------------------------------------------------
01245> R0001:C00050-----------------------------------------------------------------------------------
01246> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
01247> ------------------------
01248> | ADD HYD          |
01249> | 07:UC-East       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
01250> ------------------------                    (ha)     (cms)    (hrs)      (mm)   (cms)
01251>                       ID 1 03:2103          1.700     .334   12.233    73.418    .000
01252>                      +ID 2 04:2104         10.900     .324   12.900    30.444    .000
01253>                      +ID 3 05:2105         21.500     .215   14.800    25.025    .000
01254>                      ==========================================================
01255>                      SUM   07:UC-East      34.100     .499   12.267    29.170    .000
01256>
01257>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
01258>
01259> ------------------------------------------------------------------------------------------------
01260> R0001:C00051-----------------------------------------------------------------------------------
01261> --------------------
01262> | SAVE HYD          |   AREA       (ha)=   34.100
01263> | ID=07:UC-East     |   QPEAK      (cms)=   .499 (i)
01264> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=   12.267
01265> --------------------   VOLUME       (mm)=   29.170
01266>   Filename: UC-East.0001
01267>   Comments: UC-East
01268>
01269>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01270> ------------------------------------------------------------------------------------------------
01271> R0001:C00052-----------------------------------------------------------------------------------
01272> *#################################################################################
01273> *#################POST-DEVELOPMENT UNCONTROLLED - 100 YEAR Event ###############
01274> *#################################################################################
01275> *
01276> *#   Rainfall Depths per MTO - Basins East of Collingwood
01277> *#              SCS Rainfall Distribution
01278> *
01279> *#################################################################################
01280> --------------------
01281> | MASS STORM       |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
01282> | Ptotal=105.60 mm |    Comments: 24 hour SCS II storm mass curve
01283> ------------------
01284>                        Duration of storm        =   24.00 hrs
01285>                        Mass curve time step     =   12.00 min
01286>                        Selected storm time step =    6.00 min
01287>                        Volume of derived storm  =  105.60 mm
01288>
01289>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
01290>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
01291>       0:06    .000|  4:06   1.056|  8:06   2.112| 12:06 118.800| 16:06   2.640| 20:06   2.112
01292>       0:12    .000|  4:12   1.056|  8:12   2.112| 12:12 118.800| 16:12   2.640| 20:12   2.112
01293>       0:18   1.056|  4:18   2.112|  8:18   3.168| 12:18  21.120| 16:18   2.640| 20:18   1.584
01294>       0:24   1.056|  4:24   2.112|  8:24   3.168| 12:24  21.120| 16:24   2.640| 20:24   1.584
01295>       0:30   1.056|  4:30   2.112|  8:30   3.168| 12:30  13.200| 16:30   2.640| 20:30   1.584
01296>       0:36   1.056|  4:36   2.112|  8:36   3.168| 12:36  13.200| 16:36   2.640| 20:36   1.584
01297>       0:42   1.056|  4:42   2.112|  8:42   3.168| 12:42   9.504| 16:42   2.640| 20:42   1.056
01298>       0:48   1.056|  4:48   2.112|  8:48   3.168| 12:48   9.504| 16:48   2.640| 20:48   1.056
01299>       0:54   1.056|  4:54   2.112|  8:54   3.168| 12:54   8.976| 16:54   2.640| 20:54   1.584
01300>       1:00   1.056|  5:00   2.112|  9:00   3.168| 13:00   8.976| 17:00   2.640| 21:00   1.584
01301>       1:06   1.056|  5:06   2.112|  9:06   3.168| 13:06   6.336| 17:06   1.584| 21:06   1.584
01302>       1:12   1.056|  5:12   2.112|  9:12   3.168| 13:12   6.336| 17:12   1.584| 21:12   1.584
01303>       1:18   1.056|  5:18   2.112|  9:18   3.168| 13:18   5.280| 17:18   1.584| 21:18   1.056
01304>       1:24   1.056|  5:24   2.112|  9:24   3.168| 13:24   5.280| 17:24   1.584| 21:24   1.056
01305>       1:30   1.056|  5:30   2.112|  9:30   3.168| 13:30   5.280| 17:30   2.112| 21:30   1.584
01306>       1:36   1.056|  5:36   2.112|  9:36   3.168| 13:36   5.280| 17:36   2.112| 21:36   1.584
01307>       1:42   1.056|  5:42   2.112|  9:42   3.168| 13:42   5.280| 17:42   1.584| 21:42   1.056
01308>       1:48   1.056|  5:48   2.112|  9:48   3.168| 13:48   5.280| 17:48   1.584| 21:48   1.056
01309>       1:54   1.056|  5:54   2.112|  9:54   3.168| 13:54   5.280| 17:54   2.112| 21:54   1.584
01310>       2:00   1.056|  6:00   2.112| 10:00   3.168| 14:00   5.280| 18:00   2.112| 22:00   1.584
01311>       2:06   1.056|  6:06   2.112| 10:06   3.168| 14:06   5.280| 18:06   1.584| 22:06   1.056
01312>       2:12   1.056|  6:12   2.112| 10:12   3.168| 14:12   5.280| 18:12   1.584| 22:12   1.056
01313>       2:18   1.056|  6:18   2.112| 10:18   5.808| 14:18   3.168| 18:18   1.584| 22:18   1.056
01314>       2:24   1.056|  6:24   2.112| 10:24   5.808| 14:24   3.168| 18:24   1.584| 22:24   1.056
01315>       2:30   1.056|  6:30   2.112| 10:30   5.808| 14:30   3.168| 18:30   1.584| 22:30   1.584
01316>       2:36   1.056|  6:36   2.112| 10:36   5.808| 14:36   3.168| 18:36   1.584| 22:36   1.584
01317>       2:42   1.056|  6:42   2.112| 10:42   5.808| 14:42   3.168| 18:42   2.112| 22:42   1.056
01318>       2:48   1.056|  6:48   2.112| 10:48   5.808| 14:48   3.168| 18:48   2.112| 22:48   1.056
01319>       2:54   1.056|  6:54   2.112| 10:54   5.808| 14:54   3.168| 18:54   1.584| 22:54   1.584
01320>       3:00   1.056|  7:00   2.112| 11:00   5.808| 15:00   3.168| 19:00   1.584| 23:00   1.584
01321>       3:06   1.056|  7:06   2.112| 11:06   5.808| 15:06   3.168| 19:06   1.584| 23:06   1.056
01322>       3:12   1.056|  7:12   2.112| 11:12   5.808| 15:12   3.168| 19:12   1.584| 23:12   1.056
01323>       3:18   1.056|  7:18   2.112| 11:18   7.920| 15:18   2.640| 19:18   2.112| 23:18   1.056
01324>       3:24   1.056|  7:24   2.112| 11:24   7.920| 15:24   2.640| 19:24   2.112| 23:24   1.056
01325>       3:30   1.056|  7:30   2.112| 11:30  11.616| 15:30   2.640| 19:30   1.584| 23:30   1.056
01326>       3:36   1.056|  7:36   2.112| 11:36  11.616| 15:36   2.640| 19:36   1.584| 23:36   1.056
01327>       3:42   1.056|  7:42   2.112| 11:42  27.984| 15:42   2.640| 19:42   2.112| 23:42   1.584
01328>       3:48   1.056|  7:48   2.112| 11:48  27.984| 15:48   2.640| 19:48   2.112| 23:48   1.584
01329>       3:54   1.056|  7:54   2.112| 11:54  58.080| 15:54   2.640| 19:54   1.584| 23:54   2.112
01330>       4:00   1.056|  8:00   2.112| 12:00  58.080| 16:00   2.640| 20:00   1.584| 24:00   2.112
01331>
01332> ------------------------------------------------------------------------------------------------
01333> R0001:C00053-----------------------------------------------------------------------------------
01334> *#----------------|------------Area 2101 (West Developed Area)----------------|
01335> --------------------------
01336> | CALIB STANDHYD          |   Area    (ha)=   10.00
01337> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
01338> --------------------------
01339>                             IMPERVIOUS    PERVIOUS (i)
01340>      Surface Area     (ha)=       5.00         5.00
01341>      Dep. Storage     (mm)=       2.00         5.00
01342>      Average Slope     (%)=        .50         2.00
01343>      Length            (m)=     100.00        35.00
01344>      Mannings n             =      .013         .150
01345>
01346>      Max.eff.Inten.(mm/hr)=     118.80        78.43
01347>                  over (min)=       3.00         8.00
01348>      Storage Coeff.  (min)=       2.94 (ii)    8.22 (ii)
01349>      Unit Hyd. Tpeak (min)=       3.00         8.00
01350>      Unit Hyd. peak  (cms)=        .38          .14
01351>                                                *TOTALS*
01352>      PEAK FLOW       (cms)=        .98          .81          1.730 (iii)
01353>      TIME TO PEAK    (hrs)=      12.20        12.25         12.200
01354>      RUNOFF VOLUME    (mm)=     103.59        40.57         59.480
01355>      TOTAL RAINFALL   (mm)=     105.60       105.60        105.600
01356>      RUNOFF COEFFICIENT   =        .98          .38           .563
01357>
01358>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01359>            CN* =  54.0     Ia = Dep. Storage   (Above)
01360>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01361>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01362>
01363> ------------------------------------------------------------------------------------------------
01364> R0001:C00054-----------------------------------------------------------------------------------
01365> *#----------------|------------Area 2102 (Silver Creek Buffer)----------------|
01366> --------------------------
01367> | CALIB NASHYD            |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
01368> | 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
01369> --------------------------   U.H. Tp(hrs)=    1.020
01370>
01371>      Unit Hyd Qpeak  (cms)=     .258
01372>
01373>      PEAK FLOW       (cms)=     .158 (i)
01374>      TIME TO PEAK    (hrs)=   13.200
01375>      DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
01376>      AVERAGE FLOW    (cms)=     .019
01377>      RUNOFF VOLUME    (mm)=   30.110
01378>      TOTAL RAINFALL   (mm)=  105.600
01379>      RUNOFF COEFFICIENT   =     .285
01380>
01381>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01382>
01383> ------------------------------------------------------------------------------------------------
01384> R0001:C00055-----------------------------------------------------------------------------------
01385> *#----------------|------------Area 2103 (East Developed Area)--------------|
01386> --------------------------
01387> | CALIB STANDHYD          |   Area    (ha)=    1.70
01388> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
01389> --------------------------
01390>                             IMPERVIOUS    PERVIOUS (i)
01391>      Surface Area     (ha)=       1.10          .60
01392>      Dep. Storage     (mm)=       2.00         5.00
01393>      Average Slope     (%)=        .50         2.00
01394>      Length            (m)=     295.00        35.00
01395>      Mannings n             =      .013         .150
01396>
01397>      Max.eff.Inten.(mm/hr)=     118.80       156.76
01398>                  over (min)=       6.00        10.00
01399>      Storage Coeff.  (min)=       5.62 (ii)    9.62 (ii)
01400>      Unit Hyd. Tpeak (min)=       6.00        10.00
01401>      Unit Hyd. peak  (cms)=        .20          .12
01402>                                                *TOTALS*
01403>      PEAK FLOW       (cms)=        .20          .19          .378 (iii)
01404>      TIME TO PEAK    (hrs)=      12.22        12.27         12.233
01405>      RUNOFF VOLUME    (mm)=     103.60        68.13         82.323
01406>      TOTAL RAINFALL   (mm)=     105.60       105.60        105.600
01407>      RUNOFF COEFFICIENT   =        .98          .65           .780
01408>
01409>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
01410>            CN* =  74.0     Ia = Dep. Storage   (Above)
01411>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
01412>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01413>
01414> ------------------------------------------------------------------------------------------------
01415> R0001:C00056-----------------------------------------------------------------------------------
01416> *#----------------|------------Area 2104 (East Natural Area)-------------|
01417> --------------------------
01418> | CALIB NASHYD            |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
01419> | 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
01420> --------------------------   U.H. Tp(hrs)=     .740
01421>
01422>      Unit Hyd Qpeak  (cms)=     .563
01423>
01424>      PEAK FLOW       (cms)=     .387 (i)
01425>      TIME TO PEAK    (hrs)=   12.900
01426>      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
01427>      AVERAGE FLOW    (cms)=     .037
01428>      RUNOFF VOLUME    (mm)=   36.174
01429>      TOTAL RAINFALL   (mm)=  105.600
01430>      RUNOFF COEFFICIENT   =     .343
01431>
01432>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01433>
01434> ------------------------------------------------------------------------------------------------
01435> R0001:C00057-----------------------------------------------------------------------------------
01436> *#----------------|----------Area 2105 (Central Natural Area)------------|
01437> --------------------------
01438> | CALIB NASHYD            |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
01439> | 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
01440> --------------------------   U.H. Tp(hrs)=    2.350
01441>
01442>      Unit Hyd Qpeak  (cms)=     .349
01443>
01444>      PEAK FLOW       (cms)=     .259 (i)
01445>      TIME TO PEAK    (hrs)=   14.800
01446>      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
01447>      AVERAGE FLOW    (cms)=     .045
01448>      RUNOFF VOLUME    (mm)=   29.890
01449>      TOTAL RAINFALL   (mm)=  105.600
01450>      RUNOFF COEFFICIENT   =     .283
01451>
01452>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01453>
01454> ------------------------------------------------------------------------------------------------
01455> R0001:C00058-----------------------------------------------------------------------------------
01456> *#----------------|---Post Development Uncontrolled Flow to Silver Creek-----|
01457> ------------------------
01458> | ADD HYD          |
01459> | 06:UC-West       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
01460> ------------------------                    (ha)     (cms)    (hrs)      (mm)   (cms)
01461>                       ID 1 01:2101          10.000    1.730   12.200    59.480    .000
01462>                      +ID 2 02:2102           6.900     .158   13.200    30.110    .000
01463>                      ==========================================================
01464>                      SUM   06:UC-West      16.900     1.773   12.200    47.489    .000
01465>
01466>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
01467>
01468> ------------------------------------------------------------------------------------------------
01469> R0001:C00059-----------------------------------------------------------------------------------
01470> --------------------
01471> | SAVE HYD          |   AREA       (ha)=   16.900
01472> | ID=06:UC-West     |   QPEAK      (cms)=   1.773 (i)
01473> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=   12.200
01474> --------------------   VOLUME       (mm)=   47.489
01475>   Filename: UC-West.0001
01476>   Comments: UC-West
01477>
01478>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01479> ------------------------------------------------------------------------------------------------
01480> R0001:C00060-----------------------------------------------------------------------------------
01481> *#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
01482> ------------------------
01483> | ADD HYD          |
01484> | 07:UC-East       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
01485> ------------------------                    (ha)     (cms)    (hrs)      (mm)   (cms)
01486>                       ID 1 03:2103          1.700     .378   12.233    82.323    .000
01487>                      +ID 2 04:2104         10.900     .387   12.900    36.174    .000
01488>                      +ID 3 05:2105         21.500     .259   14.800    29.890    .000
01489>                      ==========================================================
01490>                      SUM   07:UC-East      34.100     .580   12.267    34.513    .000
01491>
01492>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
01493>
01494> ------------------------------------------------------------------------------------------------
01495> R0001:C00061-----------------------------------------------------------------------------------
01496> --------------------
01497> | SAVE HYD          |   AREA       (ha)=   34.100
01498> | ID=07:UC-East     |   QPEAK      (cms)=    .580 (i)
01499> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=   12.267
01500> --------------------   VOLUME       (mm)=   34.513
01501>   Filename: UC-East.0001
01502>   Comments: UC-East
01503>
01504>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
01505> ------------------------------------------------------------------------------------------------
01506> R0001:C00062-----------------------------------------------------------------------------------
01507> --------------------
01508> | FINISH           |
01509> --------------------
01510> ------------------------------------------------------------------------------------------------
01511> ************************************************************************************************
01512>      WARNINGS / ERRORS / NOTES
01513>      -------------------------
01514>    Simulation ended on 2019-07-25     at 21:35:56
01515> ================================================================================================
01516>
```

```
00001> 2     Metric units
00002> *#*****************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date        : 01-17-2011
00005> *#  Updated     : 07-25-2019
00006> *#  Modeller    : [J.Proctor/R.Alexander]
00007> *#  Company     : C.F. Crozier & Associates Inc.
00008> *#  License #   :  3737016
00009> *#*****************************************************************************
00010> *#J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\Tim.dat
00011> *#*****************************************************************************
00012> START               TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                   [  ] <--storm filename, one per line for NSTORM time
00014> *%------------------|-----------------------------------------------------|
00015> *#*****************************************************************************
00016> *#**********************POST-DEVELOPMENT UNCONTROLLED - Timmins Event **************
00017> *#*****************************************************************************
00018> *%------------------|-----------------------------------------------------|
00019> READ STORM          STORM_FILENAME=["tim.stm"]
00020> *%------------------|-----------------------------------------------------|
00021> *#------------------|-----------Area 2101 (West Developed Area)---------------|
00022> *%------------------|-----------------------------------------------------|
00023> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00024>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00025>                     SCS curve number CN=[54],
00026>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00027>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00028>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00029>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00030>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00031> *%------------------|-----------------------------------------------------|
00032> *#------------------|------------Area 2102 (Silver Creek Buffer)--------------|
00033> *%------------------|-----------------------------------------------------|
00034> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00035>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00036>                     N=[3], TP=[1.02]hrs,
00037>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00038> *%------------------|-----------------------------------------------------|
00039> *#------------------|------------Area 2103 (East Developed Area)--------------|
00040> *%------------------|-----------------------------------------------------|
00041> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00042>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00043>                     SCS curve number CN=[74],
00044>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00045>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00046>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00047>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00048>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00049> *%------------------|-----------------------------------------------------|
00050> *#------------------|-------------Area 2104 (East Natural Area)------------|
00051> *%------------------|-----------------------------------------------------|
00052> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00053>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00054>                     N=[3], TP=[0.74]hrs,
00055>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00056> *%------------------|-----------------------------------------------------|
00057> *#------------------|-----------Area 2105 (Central Natural Area)------------|
00058> *%------------------|-----------------------------------------------------|
00059> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00060>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00061>                     N=[3], TP=[2.35]hrs,
00062>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00063> *%------------------|-----------------------------------------------------|
00064> *#------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00065> *%------------------|-----------------------------------------------------|
00066> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00067> *%------------------|-----------------------------------------------------|
00068> SAVE HYD            ID=[6],   # OF PCYCLES=[-1],  ICASEsh=[1]
00069>                     HYD_COMMENT=["UC-West"]
00070> *%------------------|-----------------------------------------------------|
00071> *#------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00072> *%------------------|-----------------------------------------------------|
00073> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00074> *%------------------|-----------------------------------------------------|
00075> SAVE HYD            ID=[7],   # OF PCYCLES=[-1],  ICASEsh=[1]
00076>                     HYD_COMMENT=["UC-East"]
00077> *%------------------|-----------------------------------------------------|
00078> FINISH
```

```
00001> ================================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
00004> S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2     0   0   11   7    7
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2     0   0   11       7 Ver4.05.0
00006>     S   W W     M   M   H   H     Y     M   M   O   O        222     0   0   11      7  APR 2017
00007> SSSSS    W W    M   M   H   H     Y     M   M    OOO         2       0   0   11     7   ========
00008>                                                              2       0   0   11    7    # 3737016
00009>       StormWater Management HYdrologic Model                  222     000    11    7    ========
00010>
00011> ************************************************************************************************
00012> ************************************  SWMHYMO Ver4.05.0  ***************************************
00013> ******************  A single event and continuous hydrologic simulation model  *******************
00014> ******************     based on the principles of HYMO and its successors      *******************
00015> ******************                OTTHYMO-83 and OTTHYMO-89.                 *******************
00016> ************************************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *******************
00018> ******************                  Ottawa,  Ontario: (613) 836-3884          *******************
00019> ******************                  Gatineau, Quebec: (819) 243-6858          *******************
00020> ******************                  E-Mail: swmhymo@jfsa.com                  *******************
00021> ************************************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.              ++++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016       ++++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ************************************************************************************************
00029> ******************             ++++++ PROGRAM ARRAY DIMENSIONS ++++++                 *******************
00030> ******************             Maximum value for ID numbers  :      11               *******************
00031> ******************             Max. number of rainfall points: 105408                *******************
00032> ******************             Max. number of flow points    : 105408                *******************
00033> ************************************************************************************************
00034>
00035>
00036> ********************************   S U M M A R Y   O U T P U T   ********************************
00037> ************************************************************************************************
00038> *                 RUN DATE: 2019-07-25     TIME: 21:36:27     RUN COUNTER: 000006               *
00039> ************************************************************************************************
00040> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00041> *                HYMO\UC\Tim.dat                                                                 *
00042> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00043> *                HYMO\UC\Tim.out                                                                 *
00044> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00045> *                HYMO\UC\Tim.sum                                                                 *
00046> * User comments:                                                                                *
00047> * 1:_____________________________________________________________________________________________*
00048> * 2:_____________________________________________________________________________________________*
00049> * 3:_____________________________________________________________________________________________*
00050> ************************************************************************************************
00051>
00052>
00053> #*************************************************************************
00054> #  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00055> #  Date        : 01-17-2011
00056> #  Updated     : 07-25-2019
00057> #  Modeller    : [J.Proctor/R.Alexander]
00058> #  Company     : C.F. Crozier & Associates Inc.
00059> #  License #   :  3737016
00060> #*************************************************************************
00061> #J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\Tim.dat
00062> #*************************************************************************
00063>  RUN#:COMMAND#
00064> R0001:C00001-------------------------------------------------------------------------------------
00065>      START
00066>       [TZERO =    .00 hrs on        0]
00067>       [METOUT=   2    (1=imperial, 2=metric output)]
00068>       [NSTORM=   0 ]
00069>       [NRUN  = 0001 ]
00070> #*************************************************************************
00071> #*****************POST-DEVELOPMENT UNCONTROLLED - Timmins Event **************
00072> #*************************************************************************
00073> R0001:C00002-------------------------------------------------------------------------------------
00074>      READ STORM
00075>        Filename = tim.stm
00076>        Comment  = Timmins Storm Event
00077>       [SDT=60.00:SDUR=  12.00:PTOT= 193.00]
00078> #-----------------|-----------Area 2101 (West Developed Area)---------------|
00079> R0001:C00003------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00080>     CALIB STANDHYD          1.0 01:2101          10.00     .884 No_date    7:00  130.32 .675     .000
00081>       [XIMP=.30:TIMP=.50]
00082>       [LOSS= 2 :CN= 54.0]
00083>       [Pervious    area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00084>       [Impervious  area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00085> #-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00086> R0001:C00004------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00087>     CALIB NASHYD            5.0 02:2102           6.90     .270 No_date    7:55   84.10 .436     .000
00088>       [CN= 52.8: N= 3.00: Tp= 1.02]
00089> #-----------------|------------Area 2103 (East Developed Area)---------------|
00090> R0001:C00005------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00091>     CALIB STANDHYD          1.0 03:2103           1.70     .187 No_date    7:00  165.93 .860     .000
00092>       [XIMP=.40:TIMP=.65]
00093>       [LOSS= 2 :CN= 74.0]
00094>       [Pervious    area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00095>       [Impervious  area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00096> #-----------------|-------------Area 2104 (East Natural Area)-------------|
00097> R0001:C00006------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00098>     CALIB NASHYD            5.0 04:2104          10.90     .580 No_date    7:25   98.35 .510     .000
00099>       [CN= 61.6: N= 3.00: Tp=  .74]
00100> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00101> R0001:C00007------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00102>     CALIB NASHYD            5.0 05:2105          21.50     .675 No_date   10:35   84.59 .438     .000
00103>       [CN= 53.9: N= 3.00: Tp= 2.35]
00104> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00105> R0001:C00008------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00106>     ADD HYD                 1.0 01:2101          10.00     .884 No_date    7:00  130.32  n/a     .000
00107>                       +     5.0 02:2102           6.90     .270 No_date    7:55   84.10  n/a     .000
00108>                   SUM=      1.0 06:UC-West       16.90    1.076 No_date    7:00  111.45  n/a     .000
00109> R0001:C00009------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00110>     SAVE HYD                1.0 06:UC-West       16.90    1.076 No_date    7:00  111.45  n/a     .000
00111>       fname :UC-West.0001
00112>       remark:UC-West
00113> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00114> R0001:C00010------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00115>     ADD HYD                 1.0 03:2103           1.70     .187 No_date    7:00  165.93  n/a     .000
00116>                       +     5.0 04:2104          10.90     .580 No_date    7:25   98.35  n/a     .000
00117>                       +     5.0 05:2105          21.50     .675 No_date   10:35   84.59  n/a     .000
00118>                   SUM=      1.0 07:UC-East       34.10    1.166 No_date    9:06   93.04  n/a     .000
00119> R0001:C00011------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00120>     SAVE HYD                1.0 07:UC-East       34.10    1.166 No_date    9:06   93.04  n/a     .000
00121>       fname :UC-East.0001
00122>       remark:UC-East
00123> R0001:C00012-------------------------------------------------------------------------------------
00124>     FINISH
00125> -------------------------------------------------------------------------------------------------
00126> *************************************************************************************************
00127>      WARNINGS / ERRORS / NOTES
00128>      -------------------------
00129>   Simulation ended on 2019-07-25     at 21:36:27
00130> =================================================================================================
00131>
```

```
00001> ================================================================================
00002>
00003>  SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
00004>  S       W W W   MM MM   H   H   Y Y    MM MM   O   O           2   0   0  1 1       7  ========
00005>  SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O           2   0   0    1      7  Ver4.05.0
00006>      S   W W     M   M   H   H     Y     M   M   O   O         2     0   0    1     7   APR 2017
00007>  SSSSS    W W    M   M   H   H     Y     M   M    OOO         2      0   0  1 1   7    ========
00008>                                                               2       0   0  1 1   7    # 3737016
00009>         StormWater Management HYdrologic Model                 222     000    11    7    ========
00010>
00011> ********************************************************************************
00012> ***************************************  SWMHYMO Ver4.05.0  ***********************
00013> ******************  A single event and continuous hydrologic simulation model  ******************
00014> ******************     based on the principles of HYMO and its successors      ******************
00015> ******************                 OTTHYMO-83 and OTTHYMO-89.                  ******************
00016> ********************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
00018> ******************                 Ottawa,  Ontario: (613) 836-3884            ******************
00019> ******************                 Gatineau, Quebec: (819) 243-6858            ******************
00020> ******************                 E-Mail: swmhymo@jfsa.com                    ******************
00021> ********************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ********************************************************************************
00029> ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
00030> ******************                Maximum value for ID numbers  :    11          ******************
00031> ******************                Max. number of rainfall points: 105408         ******************
00032> ******************                Max. number of flow points    : 105408         ******************
00033> ********************************************************************************
00034>
00035> ********************************************************************************
00036> ***************************************  SWMHYMO Ver4.05.0  ***********************
00037> ******************  A single event and continuous hydrologic simulation model  ******************
00038> ******************     based on the principles of HYMO and its successors      ******************
00039> ******************                 OTTHYMO-83 and OTTHYMO-89.                  ******************
00040> ********************************************************************************
00041> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
00042> ******************                 Ottawa,  Ontario: (613) 836-3884            ******************
00043> ******************                 Gatineau, Quebec: (819) 243-6858            ******************
00044> ******************                 E-Mail: swmhymo@jfsa.com                    ******************
00045> ********************************************************************************
00046>
00047> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00048> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00049> ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++++
00050> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00051>
00052> ********************************************************************************
00053> ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
00054> ******************                Maximum value for ID numbers  :    11          ******************
00055> ******************                Max. number of rainfall points: 105408         ******************
00056> ******************                Max. number of flow points    : 105408         ******************
00057> ********************************************************************************
00058>
00059>
00060> ******************************  D E T A I L E D   O U T P U T  ******************************
00061> ********************************************************************************
00062> *              RUN DATE: 2019-07-25       TIME: 21:36:27     RUN COUNTER: 000006          *
00063> ********************************************************************************
00064> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00065> *               HYMO\UC\Tim.dat                                                  *
00066> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00067> *               HYMO\UC\Tim.out                                                  *
00068> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00069> *               HYMO\UC\Tim.sum                                                  *
00070> * User comments:                                                                *
00071> * 1:_____________________________________________________________________________*
00072> * 2:_____________________________________________________________________________*
00073> * 3:_____________________________________________________________________________*
00074> ********************************************************************************
00075>
00076> --------------------------------------------------------------------------------
00077> R0001:C00001------------------------------------------------------------------------
00078> *#*************************************************************************
00079> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00080> *#  Date        : 01-17-2011
00081> *#  Updated     : 07-25-2019
00082> *#  Modeller    : [J.Proctor/R.Alexander]
00083> *#  Company     : C.F. Crozier & Associates Inc.
00084> *#  License #   :  3737016
00085> *#*************************************************************************
00086> *#J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\UC\Tim.dat
00087> *#*************************************************************************
00088> --------------------
00089> | START           | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00090> -------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00091>     TZERO =   .00 hrs on       0
00092>     METOUT=   2 (output = METRIC)
00093>     NRUN  = 0001
00094>     NSTORM=   0
00095> --------------------------------------------------------------------------------
00096> R0001:C00002------------------------------------------------------------------------
00097> *#*************************************************************************
00098> *#******************POST-DEVELOPMENT UNCONTROLLED - Timmins Event **************
00099> *#*************************************************************************
00100> --------------------
00101> | READ STORM      |  Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update
00102> | Ptotal= 193.00 mm|  Comments: Timmins Storm Event
00103> --------------------
00104>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00105>       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00106>        1:00  15.000|   3:00  10.000|   5:00   5.000|   7:00  43.000|   9:00  23.000|  11:00  13.000
00107>        2:00  20.000|   4:00   3.000|   6:00  20.000|   8:00  20.000|  10:00  13.000|  12:00   8.000
00108>
00109> --------------------------------------------------------------------------------
00110> R0001:C00003------------------------------------------------------------------------
00111> *#------------------|------------Area 2101 (West Developed Area)---------------|
00112> -------------------------
00113> | CALIB STANDHYD        |   Area     (ha)=   10.00
00114> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00115> -------------------------
00116>                              IMPERVIOUS    PERVIOUS (i)
00117>      Surface Area     (ha)=        5.00         5.00
00118>      Dep. Storage     (mm)=        2.00         5.00
00119>      Average Slope     (%)=         .50         2.00
00120>      Length            (m)=      100.00        35.00
00121>      Mannings n            =        .013         .150
00122>
00123>      Max.eff.Inten.(mm/hr)=      43.00        39.41
00124>                   over (min)        4.00        11.00
00125>      Storage Coeff.  (min)=        4.41 (ii)   11.37 (ii)
00126>      Unit Hyd. Tpeak (min)=        4.00        11.00
00127>      Unit Hyd. peak  (cms)=         .26          .10
00128>                                                          *TOTALS*
00129>      PEAK FLOW       (cms)=         .36          .53          .884 (iii)
00130>      TIME TO PEAK    (hrs)=        7.00         7.02         7.000
00131>      RUNOFF VOLUME    (mm)=      191.00       104.32       130.322
00132>      TOTAL RAINFALL   (mm)=      193.00       193.00       193.000
00133>      RUNOFF COEFFICIENT   =         .99          .54          .675
00134>
00135>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00136>            CN* =  54.0    Ia = Dep. Storage  (Above)
00137>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00138>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00139>
00140> --------------------------------------------------------------------------------
00141> R0001:C00004------------------------------------------------------------------------
00142> *#------------------|------------Area 2102 (Silver Creek Buffer)--------------|
00143> -------------------------
00144> | CALIB NASHYD          |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
00145> | 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
00146> -------------------------  U.H. Tp(hrs)=    1.020
00147>
00148>      Unit Hyd Qpeak  (cms)=     .258
00149>
00150>      PEAK FLOW       (cms)=     .270 (i)
00151>      TIME TO PEAK    (hrs)=    7.917
00152>      DURATION        (hrs)=   19.083, (dddd|hh:mm:)=   0|19:05
00153>      AVERAGE FLOW    (cms)=     .084
00154>      RUNOFF VOLUME    (mm)=   84.104
00155>      TOTAL RAINFALL   (mm)=  193.000
00156>      RUNOFF COEFFICIENT   =     .436
00157>
00158>     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00159>
00160> --------------------------------------------------------------------------------
00161> R0001:C00005------------------------------------------------------------------------
00162> *#------------------|------------Area 2103 (East Developed Area)---------------|
00163> -------------------------
00164> | CALIB STANDHYD        |   Area     (ha)=    1.70
00165> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00166> -------------------------
00167>                              IMPERVIOUS    PERVIOUS (i)
00168>      Surface Area     (ha)=        1.10          .60
00169>      Dep. Storage     (mm)=        2.00         5.00
00170>      Average Slope     (%)=         .50         2.00
00171>      Length            (m)=      295.00        35.00
00172>      Mannings n            =        .013         .150
00173>
00174>      Max.eff.Inten.(mm/hr)=      43.00        65.92
00175>                   over (min)        8.00        14.00
00176>      Storage Coeff.  (min)=        8.44 (ii)   14.10 (ii)
00177>      Unit Hyd. Tpeak (min)=        8.00        14.00
00178>      Unit Hyd. peak  (cms)=         .14          .08
00179>                                                          *TOTALS*
00180>      PEAK FLOW       (cms)=         .08          .11          .187 (iii)
00181>      TIME TO PEAK    (hrs)=        7.00         7.02         7.000
00182>      RUNOFF VOLUME    (mm)=      191.00       149.22       165.931
00183>      TOTAL RAINFALL   (mm)=      193.00       193.00       193.000
00184>      RUNOFF COEFFICIENT   =         .99          .77          .860
00185>
00186>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00187>            CN* =  74.0    Ia = Dep. Storage  (Above)
00188>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00189>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00190>
00191> --------------------------------------------------------------------------------
00192> R0001:C00006------------------------------------------------------------------------
00193> *#------------------|------------Area 2104 (East Natural Area)-------------|
00194> -------------------------
00195> | CALIB NASHYD          |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
00196> | 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
00197> -------------------------  U.H. Tp(hrs)=     .740
00198>
00199>      Unit Hyd Qpeak  (cms)=     .563
00200>
00201>      PEAK FLOW       (cms)=     .580 (i)
00202>      TIME TO PEAK    (hrs)=    7.417
00203>      DURATION        (hrs)=   17.167, (dddd|hh:mm:)=   0|17:10
00204>      AVERAGE FLOW    (cms)=     .173
00205>      RUNOFF VOLUME    (mm)=   98.346
00206>      TOTAL RAINFALL   (mm)=  193.000
00207>      RUNOFF COEFFICIENT   =     .510
00208>
00209>     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00210>
00211> --------------------------------------------------------------------------------
00212> R0001:C00007------------------------------------------------------------------------
00213> *#------------------|-----------Area 2105 (Central Natural Area)-------------|
00214> -------------------------
00215> | CALIB NASHYD          |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
00216> | 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
00217> -------------------------  U.H. Tp(hrs)=    2.350
00218>
00219>      Unit Hyd Qpeak  (cms)=     .349
00220>
00221>      PEAK FLOW       (cms)=     .675 (i)
00222>      TIME TO PEAK    (hrs)=   10.583
00223>      DURATION        (hrs)=   27.750, (dddd|hh:mm:)=   1|03:45
00224>      AVERAGE FLOW    (cms)=     .182
00225>      RUNOFF VOLUME    (mm)=   84.590
00226>      TOTAL RAINFALL   (mm)=  193.000
00227>      RUNOFF COEFFICIENT   =     .438
00228>
00229>     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00230>
00231> --------------------------------------------------------------------------------
00232> R0001:C00008------------------------------------------------------------------------
00233> *#------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00234> -------------------------
00235> | ADD HYD               |
00236> | 06:UC-West            |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
00237> -------------------------                        (ha)     (cms)    (hrs)       (mm)   (cms)
00238>                          ID 1 01:2101          10.000     .884    7.000   130.322    .000
00239>                         +ID 2 02:2102           6.900     .270    7.917    84.104    .000
00240>                         ================================================================
00241>                         SUM   06:UC-West      16.900    1.076    7.000   111.452    .000
00242>
00243>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00244>
00245> --------------------------------------------------------------------------------
00246> R0001:C00009------------------------------------------------------------------------
00247> --------------------
00248> | SAVE HYD         |   AREA       (ha)=   16.900
00249> | ID=06:UC-West    |   QPEAK      (cms)=    1.076 (i)
00250> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=    7.000
00251> --------------------   VOLUME        (mm)=  111.452
00252>   Filename: UC-West.0001
00253>   Comments: UC-West
00254>
00255>     (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00256> --------------------------------------------------------------------------------
00257> R0001:C00010------------------------------------------------------------------------
00258> *#------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00259> -------------------------
00260> | ADD HYD               |
00261> | 07:UC-East            |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
00262> -------------------------                        (ha)     (cms)    (hrs)       (mm)   (cms)
00263>                          ID 1 03:2103           1.700     .187    7.000   165.931    .000
00264>                         +ID 2 04:2104          10.900     .580    7.417    98.346    .000
00265>                         +ID 3 05:2105          21.500     .675   10.583    84.590    .000
00266>                         ================================================================
00267>                         SUM   07:UC-East      34.100    1.166    9.100    93.043    .000
00268>
00269>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00270>
00271> --------------------------------------------------------------------------------
00272> R0001:C00011------------------------------------------------------------------------
00273> --------------------
00274> | SAVE HYD         |   AREA       (ha)=   34.100
00275> | ID=07:UC-East    |   QPEAK      (cms)=    1.166 (i)
00276> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=    9.100
00277> --------------------   VOLUME        (mm)=  93.043
00278>   Filename: UC-East.0001
00279>   Comments: UC-East
00280>
00281>     (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00282> --------------------------------------------------------------------------------
00283> R0001:C00012------------------------------------------------------------------------
00284> --------------------
00285> | FINISH          |
00286> --------------------
00287> --------------------------------------------------------------------------------
00288> ********************************************************************************
00289>      WARNINGS / ERRORS / NOTES
00290>      -------------------------
00291>    Simulation ended on 2019-07-25     at 21:36:27
00292> ================================================================================
00293>
```

```
00001> 2     Metric units
00002> *****************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date         : 01-17-2011
00005> *#  Updated      : 07-25-2019
00006> *#  Modeller     : [J.Proctor/R.Alexander]
00007> *#  Company      : C.F. Crozier & Associates Inc.
00008> *#  License #    :  3737016
00009> *****************************************************************************
00010> *#J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\ALL_CHI.dat
00011> *****************************************************************************
00012> START                TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                    [  ] <--storm filename, one per line for NSTORM time
00014> *%------------------|---------------------------------------------------------|
00015> *****************************************************************************
00016> *****************POST-DEVELOPMENT CONTROLLED - 2 YEAR Event *****************
00017> *****************************************************************************
00018> *
00019> *#   Rainfall Depths per MTO - Basins East of Collingwood
00020> *#              Chicago Rainfall Distribution
00021> *
00022> *#*****************************************************************************
00023> *%------------------|---------------------------------------------------------|
00024> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00025>                     ICASEcs=[2],
00026>                     Enter ordinates of IDF curve below, at least seven points
00027>                         TIME (min)    Intensity(mm/hr)
00028>                           [5]         [95]
00029>                           [10]        [79]
00030>                           [15]        [62]
00031>                           [30]        [40]
00032>                           [60]        [25]
00033>                           [120]       [14]
00034>                           [360]       [6.1]
00035>                           [720]       [3.3]
00036>                           [1440]      [2.1]
00037>                             -1          -1
00038> *%------------------|---------------------------------------------------------|
00039> *#------------------|------------Area 2101 (West Developed Area)---------------|
00040> *%------------------|---------------------------------------------------------|
00041> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00042>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00043>                     SCS curve number CN=[54],
00044>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00045>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00046>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00047>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00048>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00049> *%------------------|---------------------------------------------------------|
00050> *#------------------|------------Area 2102 (Silver Creek Buffer)---------------|
00051> *%------------------|---------------------------------------------------------|
00052> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00053>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00054>                     N=[3], TP=[1.02]hrs,
00055>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00056> *%------------------|---------------------------------------------------------|
00057> *#------------------|------------Area 2103 (East Developed Area)---------------|
00058> *%------------------|---------------------------------------------------------|
00059> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00060>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00061>                     SCS curve number CN=[74],
00062>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00063>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00064>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00065>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00066>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00067> *%------------------|---------------------------------------------------------|
00068> *#------------------|------------Area 2104 (East Natural Area)-----------------|
00069> *%------------------|---------------------------------------------------------|
00070> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00071>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00072>                     N=[3], TP=[0.74]hrs,
00073>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00074> *%------------------|---------------------------------------------------------|
00075> *#------------------|------------Area 2105 (Central Natural Area)--------------|
00076> *%------------------|---------------------------------------------------------|
00077> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00078>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00079>                     N=[3], TP=[2.35]hrs,
00080>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00081> *%------------------|---------------------------------------------------------|
00082> *#------------------|----Post Development Uncontrolled Flow to Silver Creek----|
00083> *%------------------|---------------------------------------------------------|
00084> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00085> *%------------------|---------------------------------------------------------|
00086> *#------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00087> *%------------------|---------------------------------------------------------|
00088> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00089> *%------------------|---------------------------------------------------------|
00090> *#------------------|-------------------Route West Pond-----------------------|
00091> *%------------------|---------------------------------------------------------|
00092> ROUTE RESERVOIR     IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00093>                     RDT=[1](min),
00094>                           TABLE of ( OUTFLOW-STORAGE ) values
00095>                                 (cms) - (ha-m)
00096>                           [   0.0 ,  0.0  ]
00097>                           [   0.018, 0.061]
00098>                           [   0.025, 0.111]
00099>                           [   0.030, 0.167]
00100>                           [   0.034, 0.230]
00101>                           [   0.038, 0.301]
00102>                           [   0.042, 0.378]
00103>                           [   0.603, 0.462]
00104>                           [   3.086, 0.601]
00105>                           [   -1  ,  -1  ]  (max twenty pts)
00106>                     IDovf=[7], NHYDovf=["W.Spill"]
00107> *%------------------|---------------------------------------------------------|
00108> *#------------------|-------------------Route East Storage--------------------|
00109> *%------------------|---------------------------------------------------------|
00110> ROUTE RESERVOIR     IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00111>                     RDT=[1](min),
00112>                           TABLE of ( OUTFLOW-STORAGE ) values
00113>                                 (cms) - (ha-m)
00114>                           [ 0.000, 0.0000]
00115>                           [ 0.006, 0.0085]
00116>                           [ 0.008, 0.0190]
00117>                           [ 0.099, 0.0293]
00118>                           [ 0.144, 0.0360]
00119>                           [ 0.166, 0.0360]
00120>                           [   -1  ,  -1  ]  (max twenty pts)
00121>                     IDovf=[9], NHYDovf=["E.Spill"]
00122> *%------------------|---------------------------------------------------------|
00123> *#------------------|----Post Development Controlled Flow to Silver Creek-------|
00124> *%------------------|---------------------------------------------------------|
00125> ADD HYD             IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00126> *%------------------|---------------------------------------------------------|
00127> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00128>                     HYD_COMMENT=["West"]
00129> *%------------------|---------------------------------------------------------|
00130> *#------------------|----Post Development Controlled Flow to East--------------|
00131> *%------------------|---------------------------------------------------------|
00132> ADD HYD             IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00133> *%------------------|---------------------------------------------------------|
00134> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00135>                     HYD_COMMENT=["East"]
00136> *%------------------|---------------------------------------------------------|
00137> *****************************************************************************
00138> *****************POST-DEVELOPMENT CONTROLLED - 5 YEAR Event *****************
00139> *****************************************************************************
00140> *
00141> *#   Rainfall Depths per MTO - Basins East of Collingwood
00142> *#              Chicago Rainfall Distribution
00143> *
00144> *#*****************************************************************************
00145> *%------------------|---------------------------------------------------------|
00146> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00147>                     ICASEcs=[2],
00148>                     Enter ordinates of IDF curve below, at least seven points
00149>                         TIME (min)    Intensity(mm/hr)
00150>                           [5]         [125]
00151>                           [10]        [100]
00152>                           [15]        [82]
00153>                           [30]        [53]
00154>                           [60]        [34]
00155>                           [120]       [19]
00156>                           [360]       [8.4]
00157>                           [720]       [4.6]
00158>                           [1440]      [2.7]
00159>                             -1          -1
00160> *%------------------|---------------------------------------------------------|
00161> *#------------------|------------Area 2101 (West Developed Area)---------------|
00162> *%------------------|---------------------------------------------------------|
00163> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00164>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00165>                     SCS curve number CN=[54],
00166>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00167>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00168>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00169>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00170>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00171> *%------------------|---------------------------------------------------------|
00172> *#------------------|------------Area 2102 (Silver Creek Buffer)---------------|
00173> *%------------------|---------------------------------------------------------|
00174> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00175>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00176>                     N=[3], TP=[1.02]hrs,
00177>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00178> *%------------------|---------------------------------------------------------|
00179> *#------------------|------------Area 2103 (East Developed Area)---------------|
00180> *%------------------|---------------------------------------------------------|
00181> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00182>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00183>                     SCS curve number CN=[74],
00184>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00185>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00186>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00187>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00188>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00189> *%------------------|---------------------------------------------------------|
00190> *#------------------|------------Area 2104 (East Natural Area)-----------------|
00191> *%------------------|---------------------------------------------------------|
00192> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00193>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00194>                     N=[3], TP=[0.74]hrs,
00195>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00196> *%------------------|---------------------------------------------------------|
00197> *#------------------|------------Area 2105 (Central Natural Area)--------------|
00198> *%------------------|---------------------------------------------------------|
00199> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00200>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00201>                     N=[3], TP=[2.35]hrs,
00202>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00203> *%------------------|---------------------------------------------------------|
00204> *#------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00205> *%------------------|---------------------------------------------------------|
00206> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00207> *%------------------|---------------------------------------------------------|
00208> *#------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00209> *%------------------|---------------------------------------------------------|
00210> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00211> *%------------------|---------------------------------------------------------|
00212> *#------------------|-------------------Route West Pond-----------------------|
00213> *%------------------|---------------------------------------------------------|
00214> ROUTE RESERVOIR     IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00215>                     RDT=[1](min),
00216>                           TABLE of ( OUTFLOW-STORAGE ) values
00217>                                 (cms) - (ha-m)
00218>                           [   0.0 ,  0.0  ]
00219>                           [   0.018, 0.061]
00220>                           [   0.025, 0.111]
00221>                           [   0.030, 0.167]
00222>                           [   0.034, 0.230]
00223>                           [   0.038, 0.301]
00224>                           [   0.042, 0.378]
00225>                           [   0.603, 0.462]
00226>                           [   3.086, 0.601]
00227>                           [   -1  ,  -1  ]  (max twenty pts)
00228>                     IDovf=[7], NHYDovf=["W.Spill"]
00229> *%------------------|---------------------------------------------------------|
00230> *#------------------|-------------------Route East Storage--------------------|
00231> *%------------------|---------------------------------------------------------|
00232> ROUTE RESERVOIR     IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00233>                     RDT=[1](min),
00234>                           TABLE of ( OUTFLOW-STORAGE ) values
00235>                                 (cms) - (ha-m)
00236>                           [ 0.000, 0.0000]
00237>                           [ 0.006, 0.0085]
00238>                           [ 0.008, 0.0190]
00239>                           [ 0.099, 0.0293]
00240>                           [ 0.144, 0.0360]
00241>                           [ 0.166, 0.0360]
00242>                           [   -1  ,  -1  ]  (max twenty pts)
00243>                     IDovf=[9], NHYDovf=["E.Spill"]
00244> *%------------------|---------------------------------------------------------|
00245> *#------------------|----Post Development Controlled Flow to Silver Creek-------|
00246> *%------------------|---------------------------------------------------------|
00247> ADD HYD             IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00248> *%------------------|---------------------------------------------------------|
00249> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00250>                     HYD_COMMENT=["West"]
00251> *%------------------|---------------------------------------------------------|
00252> *#------------------|----Post Development Controlled Flow to East--------------|
00253> *%------------------|---------------------------------------------------------|
00254> ADD HYD             IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00255> *%------------------|---------------------------------------------------------|
00256> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00257>                     HYD_COMMENT=["East"]
00258> *%------------------|---------------------------------------------------------|
00259> *#*****************************************************************************
00260> *****************POST-DEVELOPMENT CONTROLLED - 10 YEAR Event *****************
00261> *#*****************************************************************************
00262> *
00263> *#   Rainfall Depths per MTO - Basins East of Collingwood
00264> *#              Chicago Rainfall Distribution
00265> *
00266> *#*****************************************************************************
00267> *%------------------|---------------------------------------------------------|
00268> CHICAGO STORM       IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00269>                     ICASEcs=[2],
00270>                     Enter ordinates of IDF curve below, at least seven points
00271>                         TIME (min)    Intensity(mm/hr)
00272>                           [5]         [150]
00273>                           [10]        [115]
00274>                           [15]        [95]
00275>                           [30]        [62]
00276>                           [60]        [41]
00277>                           [120]       [23]
00278>                           [360]       [10]
00279>                           [720]       [5.5]
00280>                           [1440]      [3.1]
00281>                             -1          -1
00282> *%------------------|---------------------------------------------------------|
00283> *#------------------|------------Area 2101 (West Developed Area)---------------|
00284> *%------------------|---------------------------------------------------------|
00285> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00286>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00287>                     SCS curve number CN=[54],
00288>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00289>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00290>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00291>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00292>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00293> *%------------------|---------------------------------------------------------|
00294> *#------------------|------------Area 2102 (Silver Creek Buffer)---------------|
00295> *%------------------|---------------------------------------------------------|
00296> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00297>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00298>                     N=[3], TP=[1.02]hrs,
00299>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00300> *%------------------|---------------------------------------------------------|
00301> *#------------------|------------Area 2103 (East Developed Area)---------------|
00302> *%------------------|---------------------------------------------------------|
00303> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00304>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00305>                     SCS curve number CN=[74],
00306>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00307>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00308>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
```

```
00309>                                    LGI=[295](m), MNI=[0.013], SCI=[0](min),
00310>                  RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00311> *%----------------|-------------------------------------------------------|
00312> *#----------------|-----------Area 2104 (East Natural Area)----------------|
00313> *%----------------|-------------------------------------------------------|
00314> CALIB NASHYD       ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00315>                   DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00316>                   N=[3], TP=[0.74]hrs,
00317>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00318> *%----------------|-------------------------------------------------------|
00319> *#----------------|-----------Area 2105 (Central Natural Area)-------------|
00320> *%----------------|-------------------------------------------------------|
00321> CALIB NASHYD       ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00322>                   DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00323>                   N=[3], TP=[2.35]hrs,
00324>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00325> *%----------------|-------------------------------------------------------|
00326> *#----------------|----Post Development Uncontrolled Flow to Silver Creek----|
00327> *%----------------|-------------------------------------------------------|
00328> ADD HYD           IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00329> *%----------------|-------------------------------------------------------|
00330> *#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00331> *%----------------|-------------------------------------------------------|
00332> ADD HYD           IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00333> *%----------------|-------------------------------------------------------|
00334> *#----------------|------------------Route West Pond-----------------------|
00335> *%----------------|-------------------------------------------------------|
00336> ROUTE RESERVOIR    IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00337>                   RDT=[1](min),
00338>                         TABLE of ( OUTFLOW-STORAGE ) values
00339>                                    (cms) - (ha-m)
00340>                                 [   0.0 ,  0.0  ]
00341>                                 [   0.018, 0.061]
00342>                                 [   0.025, 0.111]
00343>                                 [   0.030, 0.167]
00344>                                 [   0.034, 0.230]
00345>                                 [   0.038, 0.301]
00346>                                 [   0.042, 0.378]
00347>                                 [   0.603, 0.462]
00348>                                 [   3.086, 0.601]
00349>                                 [   -1  ,  -1  ]  (max twenty pts)
00350>                         IDovf=[7], NHYDovf=["W.Spill"]
00351> *%----------------|-------------------------------------------------------|
00352> *#----------------|------------------Route East Storage--------------------|
00353> *%----------------|-------------------------------------------------------|
00354> ROUTE RESERVOIR    IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00355>                   RDT=[1](min),
00356>                         TABLE of ( OUTFLOW-STORAGE ) values
00357>                                    (cms) - (ha-m)
00358>                                 [ 0.000, 0.0000]
00359>                                 [ 0.006, 0.0085]
00360>                                 [ 0.008, 0.0190]
00361>                                 [ 0.099, 0.0293]
00362>                                 [ 0.144, 0.0360]
00363>                                 [ 0.166, 0.0360]
00364>                                 [   -1  ,  -1  ]  (max twenty pts)
00365>                         IDovf=[9], NHYDovf=["E.Spill"]
00366> *%----------------|-------------------------------------------------------|
00367> *#----------------|----Post Development Controlled Flow to Silver Creek-------|
00368> *%----------------|-------------------------------------------------------|
00369> ADD HYD           IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00370> *%----------------|-------------------------------------------------------|
00371> SAVE HYD          ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00372>                   HYD_COMMENT=["West"]
00373> *%----------------|-------------------------------------------------------|
00374> *#----------------|----Post Development Controlled Flow to East--------------|
00375> *%----------------|-------------------------------------------------------|
00376> ADD HYD           IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00377> *%----------------|-------------------------------------------------------|
00378> SAVE HYD          ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00379>                   HYD_COMMENT=["East"]
00380> *%----------------|-------------------------------------------------------|
00381> *#*****************************************************************************
00382> *#*****************POST-DEVELOPMENT CONTROLLED - 25 YEAR Event ****************
00383> *#*****************************************************************************
00384> *
00385> *#   Rainfall Depths per MTO - Basins East of Collingwood
00386> *#             Chicago Rainfall Distribution
00387> *
00388> *#*****************************************************************************
00389> *%----------------|-------------------------------------------------------|
00390> CHICAGO STORM     IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00391>                   ICASEcs=[2],
00392>                   Enter ordinates of IDF curve below, at least seven points
00393>                       TIME (min)    Intensity(mm/hr)
00394>                         [5]         [175]
00395>                         [10]        [130]
00396>                         [15]        [110]
00397>                         [30]        [73]
00398>                         [60]        [49]
00399>                         [120]       [27]
00400>                         [360]       [12]
00401>                         [720]       [6.6]
00402>                         [1440]      [3.6]
00403>                            -1          -1
00404> *%----------------|-------------------------------------------------------|
00405> *#----------------|-----------Area 2101 (West Developed Area)---------------|
00406> *%----------------|-------------------------------------------------------|
00407> CALIB STANDHYD     ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00408>                   XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00409>                   SCS curve number CN=[54],
00410>                   Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00411>                                        LGP=[35](m), MNP=[0.15], SCP=[0](min),
00412>                   Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00413>                                        LGI=[100](m), MNI=[0.013], SCI=[0](min),
00414>                   RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00415> *%----------------|-------------------------------------------------------|
00416> *#----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00417> *%----------------|-------------------------------------------------------|
00418> CALIB NASHYD       ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00419>                   DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00420>                   N=[3], TP=[1.02]hrs,
00421>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00422> *%----------------|-------------------------------------------------------|
00423> *#----------------|------------Area 2103 (East Developed Area)--------------|
00424> *%----------------|-------------------------------------------------------|
00425> CALIB STANDHYD     ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00426>                   XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00427>                   SCS curve number CN=[74],
00428>                   Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00429>                                        LGP=[35](m), MNP=[0.15], SCP=[0](min),
00430>                   Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00431>                                        LGI=[295](m), MNI=[0.013], SCI=[0](min),
00432>                   RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00433> *%----------------|-------------------------------------------------------|
00434> *#----------------|-------------Area 2104 (East Natural Area)-------------|
00435> *%----------------|-------------------------------------------------------|
00436> CALIB NASHYD       ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00437>                   DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00438>                   N=[3], TP=[0.74]hrs,
00439>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00440> *%----------------|-------------------------------------------------------|
00441> *#----------------|-----------Area 2105 (Central Natural Area)-------------|
00442> *%----------------|-------------------------------------------------------|
00443> CALIB NASHYD       ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00444>                   DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00445>                   N=[3], TP=[2.35]hrs,
00446>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00447> *%----------------|-------------------------------------------------------|
00448> *#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00449> *%----------------|-------------------------------------------------------|
00450> ADD HYD           IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00451> *%----------------|-------------------------------------------------------|
00452> *#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00453> *%----------------|-------------------------------------------------------|
00454> ADD HYD           IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00455> *%----------------|-------------------------------------------------------|
00456> *#----------------|------------------Route West Pond-----------------------|
00457> *%----------------|-------------------------------------------------------|
00458> ROUTE RESERVOIR    IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00459>                   RDT=[1](min),
00460>                         TABLE of ( OUTFLOW-STORAGE ) values
00461>                                    (cms) - (ha-m)
00462>                                 [   0.0 ,  0.0  ]
00463>                                 [   0.018, 0.061]
00464>                                 [   0.025, 0.111]
00465>                                 [   0.030, 0.167]
00466>                                 [   0.034, 0.230]
00467>                                 [   0.038, 0.301]
00468>                                 [   0.042, 0.378]
00469>                                 [   0.603, 0.462]
00470>                                 [   3.086, 0.601]
00471>                                 [   -1  ,  -1  ]  (max twenty pts)
00472>                         IDovf=[7], NHYDovf=["W.Spill"]
00473> *%----------------|-------------------------------------------------------|
00474> *#----------------|------------------Route East Storage--------------------|
00475> *%----------------|-------------------------------------------------------|
00476> ROUTE RESERVOIR    IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00477>                   RDT=[1](min),
00478>                         TABLE of ( OUTFLOW-STORAGE ) values
00479>                                    (cms) - (ha-m)
00480>                                 [ 0.000, 0.0000]
00481>                                 [ 0.006, 0.0085]
00482>                                 [ 0.008, 0.0190]
00483>                                 [ 0.099, 0.0293]
00484>                                 [ 0.144, 0.0360]
00485>                                 [ 0.166, 0.0360]
00486>                                 [   -1  ,  -1  ]  (max twenty pts)
00487>                         IDovf=[9], NHYDovf=["E.Spill"]
00488> *%----------------|-------------------------------------------------------|
00489> *#----------------|----Post Development Controlled Flow to Silver Creek-------|
00490> *%----------------|-------------------------------------------------------|
00491> ADD HYD           IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00492> *%----------------|-------------------------------------------------------|
00493> SAVE HYD          ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00494>                   HYD_COMMENT=["West"]
00495> *%----------------|-------------------------------------------------------|
00496> *#----------------|----Post Development Controlled Flow to East--------------|
00497> *%----------------|-------------------------------------------------------|
00498> ADD HYD           IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00499> *%----------------|-------------------------------------------------------|
00500> SAVE HYD          ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00501>                   HYD_COMMENT=["East"]
00502> *%----------------|-------------------------------------------------------|
00503> *#*****************************************************************************
00504> *#*****************POST-DEVELOPMENT CONTROLLED - 50 YEAR Event ****************
00505> *#*****************************************************************************
00506> *
00507> *#   Rainfall Depths per MTO - Basins East of Collingwood
00508> *#             Chicago Rainfall Distribution
00509> *
00510> *#*****************************************************************************
00511> *%----------------|-------------------------------------------------------|
00512> CHICAGO STORM     IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00513>                   ICASEcs=[2],
00514>                   Enter ordinates of IDF curve below, at least seven points
00515>                       TIME (min)    Intensity(mm/hr)
00516>                         [5]         [195]
00517>                         [10]        [145]
00518>                         [15]        [125]
00519>                         [30]        [81]
00520>                         [60]        [55]
00521>                         [120]       [30]
00522>                         [360]       [13]
00523>                         [720]       [7.4]
00524>                         [1440]      [4.0]
00525>                            -1          -1
00526> *%----------------|-------------------------------------------------------|
00527> *#----------------|------------Area 2101 (West Developed Area)---------------|
00528> *%----------------|-------------------------------------------------------|
00529> CALIB STANDHYD     ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00530>                   XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00531>                   SCS curve number CN=[54],
00532>                   Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00533>                                        LGP=[35](m), MNP=[0.15], SCP=[0](min),
00534>                   Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00535>                                        LGI=[100](m), MNI=[0.013], SCI=[0](min),
00536>                   RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00537> *%----------------|-------------------------------------------------------|
00538> *#----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00539> *%----------------|-------------------------------------------------------|
00540> CALIB NASHYD       ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00541>                   DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00542>                   N=[3], TP=[1.02]hrs,
00543>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00544> *%----------------|-------------------------------------------------------|
00545> *#----------------|------------Area 2103 (East Developed Area)---------------|
00546> *%----------------|-------------------------------------------------------|
00547> CALIB STANDHYD     ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00548>                   XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00549>                   SCS curve number CN=[74],
00550>                   Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00551>                                        LGP=[35](m), MNP=[0.15], SCP=[0](min),
00552>                   Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00553>                                        LGI=[295](m), MNI=[0.013], SCI=[0](min),
00554>                   RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00555> *%----------------|-------------------------------------------------------|
00556> *#----------------|-------------Area 2104 (East Natural Area)-------------|
00557> *%----------------|-------------------------------------------------------|
00558> CALIB NASHYD       ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00559>                   DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00560>                   N=[3], TP=[0.74]hrs,
00561>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00562> *%----------------|-------------------------------------------------------|
00563> *#----------------|-----------Area 2105 (Central Natural Area)-------------|
00564> *%----------------|-------------------------------------------------------|
00565> CALIB NASHYD       ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00566>                   DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00567>                   N=[3], TP=[2.35]hrs,
00568>                   RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00569> *%----------------|-------------------------------------------------------|
00570> *#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00571> *%----------------|-------------------------------------------------------|
00572> ADD HYD           IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00573> *%----------------|-------------------------------------------------------|
00574> *#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00575> *%----------------|-------------------------------------------------------|
00576> ADD HYD           IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00577> *%----------------|-------------------------------------------------------|
00578> *#----------------|------------------Route West Pond-----------------------|
00579> *%----------------|-------------------------------------------------------|
00580> ROUTE RESERVOIR    IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00581>                   RDT=[1](min),
00582>                         TABLE of ( OUTFLOW-STORAGE ) values
00583>                                    (cms) - (ha-m)
00584>                                 [   0.0 ,  0.0  ]
00585>                                 [   0.018, 0.061]
00586>                                 [   0.025, 0.111]
00587>                                 [   0.030, 0.167]
00588>                                 [   0.034, 0.230]
00589>                                 [   0.038, 0.301]
00590>                                 [   0.042, 0.378]
00591>                                 [   0.603, 0.462]
00592>                                 [   3.086, 0.601]
00593>                                 [   -1  ,  -1  ]  (max twenty pts)
00594>                         IDovf=[7], NHYDovf=["W.Spill"]
00595> *%----------------|-------------------------------------------------------|
00596> *#----------------|------------------Route East Storage--------------------|
00597> *%----------------|-------------------------------------------------------|
00598> ROUTE RESERVOIR    IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00599>                   RDT=[1](min),
00600>                         TABLE of ( OUTFLOW-STORAGE ) values
00601>                                    (cms) - (ha-m)
00602>                                 [ 0.000, 0.0000]
00603>                                 [ 0.006, 0.0085]
00604>                                 [ 0.008, 0.0190]
00605>                                 [ 0.099, 0.0293]
00606>                                 [ 0.144, 0.0360]
00607>                                 [ 0.166, 0.0360]
00608>                                 [   -1  ,  -1  ]  (max twenty pts)
00609>                         IDovf=[9], NHYDovf=["E.Spill"]
00610> *%----------------|-------------------------------------------------------|
00611> *#----------------|----Post Development Controlled Flow to Silver Creek-------|
00612> *%----------------|-------------------------------------------------------|
00613> ADD HYD           IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00614> *%----------------|-------------------------------------------------------|
00615> SAVE HYD          ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00616>                   HYD_COMMENT=["West"]
```

```
00617> *%-----------------|-------------------------------------------------------------|
00618> *#-----------------|----Post Development Controlled Flow to East--------------|
00619> *%-----------------|-------------------------------------------------------------|
00620> ADD HYD            IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00621> *%-----------------|-------------------------------------------------------------|
00622> SAVE HYD           ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00623>                     HYD_COMMENT=["East"]
00624> *%-----------------|-------------------------------------------------------------|
00625> *#*****************************************************************************
00626> *#*****************POST-DEVELOPMENT CONTROLLED - 100 YEAR Event *****************
00627> *#*****************************************************************************
00628> *
00629> *#   Rainfall Depths per MTO - Basins East of Collingwood
00630> *#             Chicago Rainfall Distribution
00631> *
00632> *#*****************************************************************************
00633> *%-----------------|-------------------------------------------------------------|
00634> CHICAGO STORM      IUNITS=[2],  TD=[4](hrs), TPRAT=[0.333],  CSDT=[5](min),
00635>                     ICASEcs=[2],
00636>                     Enter ordinates of IDF curve below, at least seven points
00637>                         TIME (min)    Intensity(mm/hr)
00638>                           [5]         [215]
00639>                           [10]        [160]
00640>                           [15]        [135]
00641>                           [30]        [89]
00642>                           [60]        [61]
00643>                           [120]       [33]
00644>                           [360]       [15]
00645>                           [720]       [8.2]
00646>                           [1440]      [4.4]
00647>                             -1          -1
00648> *%-----------------|-------------------------------------------------------------|
00649> *#-----------------|-----------Area 2101 (West Developed Area)-----------------|
00650> *%-----------------|-------------------------------------------------------------|
00651> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00652>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00653>                     SCS curve number CN=[54],
00654>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00655>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00656>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00657>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00658>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00659> *%-----------------|-------------------------------------------------------------|
00660> *#-----------------|-------------Area 2102 (Silver Creek Buffer)---------------|
00661> *%-----------------|-------------------------------------------------------------|
00662> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00663>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00664>                     N=[3], TP=[1.02]hrs,
00665>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00666> *%-----------------|-------------------------------------------------------------|
00667> *#-----------------|-------------Area 2103 (East Developed Area)---------------|
00668> *%-----------------|-------------------------------------------------------------|
00669> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00670>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00671>                     SCS curve number CN=[74],
00672>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00673>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00674>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00675>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00676>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00677> *%-----------------|-------------------------------------------------------------|
00678> *#-----------------|-------------Area 2104 (East Natural Area)----------------|
00679> *%-----------------|-------------------------------------------------------------|
00680> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00681>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00682>                     N=[3], TP=[0.74]hrs,
00683>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00684> *%-----------------|-------------------------------------------------------------|
00685> *#-----------------|-----------Area 2105 (Central Natural Area)---------------|
00686> *%-----------------|-------------------------------------------------------------|
00687> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00688>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00689>                     N=[3], TP=[2.35]hrs,
00690>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00691> *%-----------------|-------------------------------------------------------------|
00692> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00693> *%-----------------|-------------------------------------------------------------|
00694> ADD HYD            IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00695> *%-----------------|-------------------------------------------------------------|
00696> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00697> *%-----------------|-------------------------------------------------------------|
00698> ADD HYD            IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00699> *%-----------------|-------------------------------------------------------------|
00700> *#-----------------|-------------------Route West Pond---------------------------|
00701> *%-----------------|-------------------------------------------------------------|
00702> ROUTE RESERVOIR     IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00703>                     RDT=[1](min),
00704>                          TABLE of ( OUTFLOW-STORAGE ) values
00705>                                     (cms) - (ha-m)
00706>                                   [   0.0 ,  0.0  ]
00707>                                   [   0.018, 0.061]
00708>                                   [   0.025, 0.111]
00709>                                   [   0.030, 0.167]
00710>                                   [   0.034, 0.230]
00711>                                   [   0.038, 0.301]
00712>                                   [   0.042, 0.378]
00713>                                   [   0.603, 0.462]
00714>                                   [   3.086, 0.601]
00715>                                   [   -1  ,  -1  ]  (max twenty pts)
00716>                          IDovf=[7], NHYDovf=["W.Spill"]
00717> *%-----------------|-------------------------------------------------------------|
00718> *#-----------------|-------------------Route East Storage------------------------|
00719> *%-----------------|-------------------------------------------------------------|
00720> ROUTE RESERVOIR     IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00721>                     RDT=[1](min),
00722>                          TABLE of ( OUTFLOW-STORAGE ) values
00723>                                     (cms) - (ha-m)
00724>                                   [ 0.000, 0.0000]
00725>                                   [ 0.006, 0.0085]
00726>                                   [ 0.008, 0.0190]
00727>                                   [ 0.099, 0.0293]
00728>                                   [ 0.144, 0.0360]
00729>                                   [ 0.166, 0.0360]
00730>                                   [   -1  ,  -1  ]  (max twenty pts)
00731>                          IDovf=[9], NHYDovf=["E.Spill"]
00732> *%-----------------|-------------------------------------------------------------|
00733> *#-----------------|----Post Development Controlled Flow to Silver Creek-------|
00734> *%-----------------|-------------------------------------------------------------|
00735> ADD HYD            IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00736> *%-----------------|-------------------------------------------------------------|
00737> SAVE HYD           ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00738>                     HYD_COMMENT=["West"]
00739> *%-----------------|-------------------------------------------------------------|
00740> *#-----------------|----Post Development Controlled Flow to East--------------|
00741> *%-----------------|-------------------------------------------------------------|
00742> ADD HYD            IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00743> *%-----------------|-------------------------------------------------------------|
00744> SAVE HYD           ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00745>                     HYD_COMMENT=["East"]
00746> *%-----------------|-------------------------------------------------------------|
00747> FINISH
```

```
00001> ================================================================================
00002>
00003> SSSSS   W   W   M   M    H   H   Y   Y   M   M     OOO          222     000    11   77777 ========
00004> S       W W W   MM MM   H   H    Y Y    MM MM    O   O           2   0   0   11   7     7
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M    O   O           2   0   0   11       7  Ver4.05.0
00006>     S   W W     M   M   H   H     Y     M   M    O   O         222   0   0   11      7   APR 2017
00007> SSSSS    W W     M   M   H   H     Y     M   M     OOO          2     0   0   11     7    ========
00008>                                                                 2     0   0   11    7     # 3737016
00009>       StormWater Management HYdrologic Model                    222    000    11    7     ========
00010>
00011> ************************************************************************************************
00012> ***********************************  SWMHYMO Ver4.05.0  ****************************************
00013> ******************  A single event and continuous hydrologic simulation model  *******************
00014> ******************      based on the principles of HYMO and its successors      *******************
00015> ******************                  OTTHYMO-83 and OTTHYMO-89.                  *******************
00016> ************************************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *******************
00018> ******************                  Ottawa, Ontario: (613) 836-3884             *******************
00019> ******************                  Gatineau, Quebec: (819) 243-6858            *******************
00020> ******************                  E-Mail: swmhymo@jfsa.com                    *******************
00021> ************************************************************************************************
00022>
00023> ************************************************************************************************
00024> ****************** Licensed user: C.F. Crozier & Associates Inc.          *******************
00025> ******************                 Collingwood          SERIAL#:3737016     *******************
00026> ************************************************************************************************
00027>
00028> ************************************************************************************************
00029> ******************              ++++++ PROGRAM ARRAY DIMENSIONS ++++++              *******************
00030> ******************              Maximum value for ID numbers :    11               *******************
00031> ******************              Max. number of rainfall points: 105408             *******************
00032> ******************              Max. number of flow points   : 105408             *******************
00033> ************************************************************************************************
00034>
00035>
00036> ****************************   S U M M A R Y   O U T P U T   ****************************************
00037> ************************************************************************************************
00038> *                RUN DATE: 2019-07-25     TIME: 22:59:52     RUN COUNTER: 000008                  *
00039> ************************************************************************************************
00040> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00041> *                HYMO\Post\ALL_CHI.dat                                                           *
00042> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00043> *                HYMO\Post\ALL_CHI.out                                                           *
00044> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00045> *                HYMO\Post\ALL_CHI.sum                                                           *
00046> * User comments:                                                                               *
00047> * 1:_____________________________________________________________________________________________*
00048> * 2:_____________________________________________________________________________________________*
00049> * 3:_____________________________________________________________________________________________*
00050> ************************************************************************************************
00051>
00052>
00053> #*********************************************************************
00054> #  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00055> #  Date       : 01-17-2011
00056> #  Updated    : 07-25-2019
00057> #  Modeller   : [J.Proctor/R.Alexander]
00058> #  Company    : C.F. Crozier & Associates Inc.
00059> #  License #  :  3737016
00060> #*********************************************************************
00061> #J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\ALL_CHI.dat
00062> #*********************************************************************
00063>  RUN#:COMMAND#
00064> R0001:C00001-------------------------------------------------------------------------------
00065>      START
00066>        [TZERO =    .00 hrs on       0]
00067>        [METOUT=   2    (1=imperial, 2=metric output)]
00068>        [NSTORM=   0 ]
00069>        [NRUN  = 0001 ]
00070> #*********************************************************************
00071> #*****************POST-DEVELOPMENT CONTROLLED - 2 YEAR Event *****************
00072> #*********************************************************************
00073> #   Rainfall Depths per MTO - Basins East of Collingwood
00074> #            Chicago Rainfall Distribution
00075> #*********************************************************************
00076> R0001:C00002-------------------------------------------------------------------------------
00077>      CHICAGO STORM
00078>        [SDT= 5.00:SDUR=   4.00:PTOT=  33.82]
00079>        {A/B/C= 793.404/   7.539/    .824: R=.9996}
00080> #-----------------|-----------Area 2101 (West Developed Area)----------------|
00081> R0001:C00003-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00082>      CALIB STANDHYD          1.0 01:2101          10.00     .684 No_date    1:21   13.01 .385     .000
00083>        [XIMP=.30:TIMP=.50]
00084>        [LOSS= 2 :CN= 54.0]
00085>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00086>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00087> #-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00088> R0001:C00004-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00089>      CALIB NASHYD            5.0 02:2102          6.90     .020 No_date    2:50    2.93 .087     .000
00090>        [CN= 52.8: N= 3.00: Tp= 1.02]
00091> #-----------------|-----------Area 2103 (East Developed Area)---------------|
00092> R0001:C00005-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00093>      CALIB STANDHYD          1.0 03:2103          1.70     .131 No_date    1:25   19.63 .581     .000
00094>        [XIMP=.40:TIMP=.65]
00095>        [LOSS= 2 :CN= 74.0]
00096>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00097>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00098> #-----------------|-----------Area 2104 (East Natural Area)--------------|
00099> R0001:C00006-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00100>      CALIB NASHYD            5.0 04:2104         10.90     .042 No_date    2:30    3.19 .094     .000
00101>        [CN= 61.6: N= 3.00: Tp=  .74]
00102> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00103> R0001:C00007-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00104>      CALIB NASHYD            5.0 05:2105         21.50     .032 No_date    4:35    2.60 .077     .000
00105>        [CN= 53.9: N= 3.00: Tp= 2.35]
00106> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00107> R0001:C00008-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00108>      ADD HYD                 1.0 01:2101          10.00     .684 No_date    1:21   13.01  n/a     .000
00109>                        +     5.0 02:2102           6.90     .020 No_date    2:50    2.93  n/a     .000
00110>                      SUM=    1.0 06:UC-West       16.90     .684 No_date    1:21    8.90  n/a     .000
00111> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00112> R0001:C00009-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00113>      ADD HYD                 1.0 03:2103           1.70     .131 No_date    1:25   19.63  n/a     .000
00114>                        +     5.0 04:2104          10.90     .042 No_date    2:30    3.19  n/a     .000
00115>                        +     5.0 05:2105          21.50     .032 No_date    4:35    2.60  n/a     .000
00116>                      SUM=    1.0 07:UC-East       34.10     .133 No_date    1:25    3.64  n/a     .000
00117> #-----------------|-----------------Route West Pond-----------------|
00118> R0001:C00010-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00119>      ROUTE RESERVOIR ->      1.0 01:2101          10.00     .684 No_date    1:21   13.01  n/a     .000
00120>                        out <=    1.0 06:W.Pond      10.00     .024 No_date    4:01   13.01  n/a     .000
00121>                  overflow <=     1.0 07:W.Spill       .00     .000 No_date    0:00     .00  n/a     .000
00122>       {MxStoUsed=.1065E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
00123> #-----------------|-----------------Route East Storage-----------------|
00124> R0001:C00011-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00125>      ROUTE RESERVOIR ->      1.0 03:2103           1.70     .131 No_date    1:25   19.63  n/a     .000
00126>                        out <=    1.0 08:E.Storage    1.70     .026 No_date    2:10   19.63  n/a     .000
00127>                  overflow <=     1.0 09:E.Spill       .00     .000 No_date    0:00     .00  n/a     .000
00128>       {MxStoUsed=.2104E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
00129> #-----------------|----Post Development Controlled Flow to Silver Creek-------|
00130> R0001:C00012-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00131>      ADD HYD                 1.0 02:2102           6.90     .020 No_date    2:50    2.93  n/a     .000
00132>                        +     1.0 06:W.Pond        10.00     .024 No_date    4:01   13.01  n/a     .000
00133>                        +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
00134>                      SUM=    1.0 01:West          16.90     .044 No_date    2:50    8.90  n/a     .000
00135> R0001:C00013-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00136>      SAVE HYD                1.0 01:West          16.90     .044 No_date    2:50    8.90  n/a     .000
00137>        fname :West.0001
00138>        remark:West
00139> #-----------------|----Post Development Controlled Flow to East---------------|
00140> R0001:C00014-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00141>      ADD HYD                 1.0 04:2104          10.90     .042 No_date    2:30    3.19  n/a     .000
00142>                        +     1.0 05:2105          21.50     .032 No_date    4:35    2.60  n/a     .000
00143>                        +     1.0 08:E.Storage      1.70     .026 No_date    2:10   19.63  n/a     .000
00144>                        +     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
00145>                      SUM=    1.0 02:East          34.10     .077 No_date    2:30    3.64  n/a     .000
00146> R0001:C00015-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00147>      SAVE HYD                1.0 02:East          34.10     .077 No_date    2:30    3.64  n/a     .000
00148>        fname :East.0001
00149>        remark:East
00150> #*********************************************************************
00151> #*****************POST-DEVELOPMENT CONTROLLED - 5 YEAR Event *****************
00152> #*********************************************************************
00153> #   Rainfall Depths per MTO - Basins East of Collingwood
00154> #            Chicago Rainfall Distribution
00155> #*********************************************************************
00156> R0001:C00016-------------------------------------------------------------------------------
00157>      CHICAGO STORM
00158>        [SDT= 5.00:SDUR=   4.00:PTOT=  45.85]
00159>        {A/B/C=1142.331/   9.025/    .834: R=.9999}
00160> #-----------------|-----------Area 2101 (West Developed Area)----------------|
00161> R0001:C00017-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00162>      CALIB STANDHYD          1.0 01:2101          10.00     .935 No_date    1:21   19.51 .426     .000
00163>        [XIMP=.30:TIMP=.50]
00164>        [LOSS= 2 :CN= 54.0]
00165>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00166>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00167> #-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00168> R0001:C00018-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00169>      CALIB NASHYD            5.0 02:2102          6.90     .042 No_date    2:45    5.81 .127     .000
00170>        [CN= 52.8: N= 3.00: Tp= 1.02]
00171> #-----------------|-----------Area 2103 (East Developed Area)---------------|
00172> R0001:C00019-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00173>      CALIB STANDHYD          1.0 03:2103          1.70     .199 No_date    1:25   29.18 .636     .000
00174>        [XIMP=.40:TIMP=.65]
00175>        [LOSS= 2 :CN= 74.0]
00176>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00177>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00178> #-----------------|-----------Area 2104 (East Natural Area)--------------|
00179> R0001:C00020-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00180>      CALIB NASHYD            5.0 04:2104         10.90     .092 No_date    2:25    6.72 .147     .000
00181>        [CN= 61.6: N= 3.00: Tp=  .74]
00182> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00183> R0001:C00021-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00184>      CALIB NASHYD            5.0 05:2105         21.50     .067 No_date    4:30    5.43 .118     .000
00185>        [CN= 53.9: N= 3.00: Tp= 2.35]
00186> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00187> R0001:C00022-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00188>      ADD HYD                 1.0 01:2101          10.00     .935 No_date    1:21   19.51  n/a     .000
00189>                        +     5.0 02:2102           6.90     .042 No_date    2:45    5.81  n/a     .000
00190>                      SUM=    1.0 06:UC-West       16.90     .936 No_date    1:21   13.92  n/a     .000
00191> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00192> R0001:C00023-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00193>      ADD HYD                 1.0 03:2103           1.70     .199 No_date    1:25   29.18  n/a     .000
00194>                        +     5.0 04:2104          10.90     .092 No_date    2:25    6.72  n/a     .000
00195>                        +     5.0 05:2105          21.50     .067 No_date    4:30    5.43  n/a     .000
00196>                      SUM=    1.0 07:UC-East       34.10     .206 No_date    1:26    7.02  n/a     .000
00197> #-----------------|-----------------Route West Pond-----------------|
00198> R0001:C00024-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00199>      ROUTE RESERVOIR ->      1.0 01:2101          10.00     .935 No_date    1:21   19.51  n/a     .000
00200>                        out <=    1.0 06:W.Pond      10.00     .030 No_date    4:03   19.51  n/a     .000
00201>                  overflow <=     1.0 07:W.Spill       .00     .000 No_date    0:00     .00  n/a     .000
00202>       {MxStoUsed=.1657E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
00203> #-----------------|-----------------Route East Storage-----------------|
00204> R0001:C00025-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00205>      ROUTE RESERVOIR ->      1.0 03:2103           1.70     .199 No_date    1:25   29.18  n/a     .000
00206>                        out <=    1.0 08:E.Storage    1.70     .068 No_date    1:52   29.18  n/a     .000
00207>                  overflow <=     1.0 09:E.Spill       .00     .000 No_date    0:00     .00  n/a     .000
00208>       {MxStoUsed=.2574E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
00209> #-----------------|----Post Development Controlled Flow to Silver Creek-------|
00210> R0001:C00026-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00211>      ADD HYD                 1.0 02:2102           6.90     .042 No_date    2:45    5.81  n/a     .000
00212>                        +     1.0 06:W.Pond        10.00     .030 No_date    4:03   19.51  n/a     .000
00213>                        +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
00214>                      SUM=    1.0 01:West          16.90     .071 No_date    2:45   13.92  n/a     .000
00215> R0001:C00027-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00216>      SAVE HYD                1.0 01:West          16.90     .071 No_date    2:45   13.92  n/a     .000
00217>        fname :West.0001
00218>        remark:West
00219> #-----------------|----Post Development Controlled Flow to East---------------|
00220> R0001:C00028-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00221>      ADD HYD                 1.0 04:2104          10.90     .092 No_date    2:25    6.72  n/a     .000
00222>                        +     1.0 05:2105          21.50     .067 No_date    4:30    5.43  n/a     .000
00223>                        +     1.0 08:E.Storage      1.70     .068 No_date    1:52   29.18  n/a     .000
00224>                        +     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
00225>                      SUM=    1.0 02:East          34.10     .161 No_date    2:15    7.02  n/a     .000
00226> R0001:C00029-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00227>      SAVE HYD                1.0 02:East          34.10     .161 No_date    2:15    7.02  n/a     .000
00228>        fname :East.0001
00229>        remark:East
00230> #*********************************************************************
00231> #*****************POST-DEVELOPMENT CONTROLLED - 10 YEAR Event *****************
00232> #*********************************************************************
00233> #   Rainfall Depths per MTO - Basins East of Collingwood
00234> #            Chicago Rainfall Distribution
00235> #*********************************************************************
00236> R0001:C00030-------------------------------------------------------------------------------
00237>      CHICAGO STORM
00238>        [SDT= 5.00:SDUR=   4.00:PTOT=  54.36]
00239>        {A/B/C=1362.588/   9.188/    .835: R=.9999}
00240> #-----------------|-----------Area 2101 (West Developed Area)----------------|
00241> R0001:C00031-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00242>      CALIB STANDHYD          1.0 01:2101          10.00    1.160 No_date    1:21   24.50 .451     .000
00243>        [XIMP=.30:TIMP=.50]
00244>        [LOSS= 2 :CN= 54.0]
00245>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00246>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00247> #-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00248> R0001:C00032-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00249>      CALIB NASHYD            5.0 02:2102          6.90     .060 No_date    2:45    8.33 .153     .000
00250>        [CN= 52.8: N= 3.00: Tp= 1.02]
00251> #-----------------|-----------Area 2103 (East Developed Area)---------------|
00252> R0001:C00033-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00253>      CALIB STANDHYD          1.0 03:2103          1.70     .253 No_date    1:24   36.29 .668     .000
00254>        [XIMP=.40:TIMP=.65]
00255>        [LOSS= 2 :CN= 74.0]
00256>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00257>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00258> #-----------------|-----------Area 2104 (East Natural Area)--------------|
00259> R0001:C00034-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00260>      CALIB NASHYD            5.0 04:2104         10.90     .137 No_date    2:25    9.83 .181     .000
00261>        [CN= 61.6: N= 3.00: Tp=  .74]
00262> #-----------------|-----------Area 2105 (Central Natural Area)-------------|
00263> R0001:C00035-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00264>      CALIB NASHYD            5.0 05:2105         21.50     .098 No_date    4:25    7.93 .146     .000
00265>        [CN= 53.9: N= 3.00: Tp= 2.35]
00266> #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00267> R0001:C00036-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00268>      ADD HYD                 1.0 01:2101          10.00    1.160 No_date    1:21   24.50  n/a     .000
00269>                        +     5.0 02:2102           6.90     .060 No_date    2:45    8.33  n/a     .000
00270>                      SUM=    1.0 06:UC-West       16.90    1.161 No_date    1:21   17.90  n/a     .000
00271> #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00272> R0001:C00037-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00273>      ADD HYD                 1.0 03:2103           1.70     .253 No_date    1:24   36.29  n/a     .000
00274>                        +     5.0 04:2104          10.90     .137 No_date    2:25    9.83  n/a     .000
00275>                        +     5.0 05:2105          21.50     .098 No_date    4:25    7.93  n/a     .000
00276>                      SUM=    1.0 07:UC-East       34.10     .266 No_date    1:26    9.95  n/a     .000
00277> #-----------------|-----------------Route West Pond-----------------|
00278> R0001:C00038-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00279>      ROUTE RESERVOIR ->      1.0 01:2101          10.00    1.160 No_date    1:21   24.50  n/a     .000
00280>                        out <=    1.0 06:W.Pond      10.00     .033 No_date    4:03   24.50  n/a     .000
00281>                  overflow <=     1.0 07:W.Spill       .00     .000 No_date    0:00     .00  n/a     .000
00282>       {MxStoUsed=.2123E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
00283> #-----------------|-----------------Route East Storage-----------------|
00284> R0001:C00039-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00285>      ROUTE RESERVOIR ->      1.0 03:2103           1.70     .253 No_date    1:24   36.29  n/a     .000
00286>                        out <=    1.0 08:E.Storage    1.70     .100 No_date    1:47   36.29  n/a     .000
00287>                  overflow <=     1.0 09:E.Spill       .00     .000 No_date    0:00     .00  n/a     .000
00288>       {MxStoUsed=.2938E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
00289> #-----------------|----Post Development Controlled Flow to Silver Creek-------|
00290> R0001:C00040-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00291>      ADD HYD                 1.0 02:2102           6.90     .060 No_date    2:45    8.33  n/a     .000
00292>                        +     1.0 06:W.Pond        10.00     .033 No_date    4:03   24.50  n/a     .000
00293>                        +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
00294>                      SUM=    1.0 01:West          16.90     .092 No_date    2:45   17.90  n/a     .000
00295> R0001:C00041-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00296>      SAVE HYD                1.0 01:West          16.90     .092 No_date    2:45   17.90  n/a     .000
00297>        fname :West.0001
00298>        remark:West
00299> #-----------------|----Post Development Controlled Flow to East---------------|
00300> R0001:C00042-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00301>      ADD HYD                 1.0 04:2104          10.90     .137 No_date    2:25    9.83  n/a     .000
00302>                        +     1.0 05:2105          21.50     .098 No_date    4:25    7.93  n/a     .000
00303>                        +     1.0 08:E.Storage      1.70     .100 No_date    1:47   36.29  n/a     .000
00304>                        +     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
00305>                      SUM=    1.0 02:East          34.10     .231 No_date    2:15    9.95  n/a     .000
00306> R0001:C00043-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00307>      SAVE HYD                1.0 02:East          34.10     .231 No_date    2:15    9.95  n/a     .000
00308>        fname :East.0001
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00309>       remark:East
00310> #*******************************************************************************
00311> #****************POST-DEVELOPMENT CONTROLLED - 25 YEAR Event ******************
00312> #*******************************************************************************
00313> #   Rainfall Depths per MTO - Basins East of Collingwood
00314> #            Chicago Rainfall Distribution
00315> #*******************************************************************************
00316> R0001:C00044-------------------------------------------------------------------------------------------------
00317>      CHICAGO STORM
00318>       {SDT= 5.00:SDUR=   4.00:PTOT=  64.48]
00319>       {A/B/C=1706.133/  10.500/    .844: R=.9998}
00320> #----------------|-----------Area 2101 (West Developed Area)---------------|
00321> R0001:C00045-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00322>      CALIB STANDHYD         1.0 01:2101          10.00    1.393 No_date    1:21   30.80 .478     .000
00323>        [XIMP=.30:TIMP=.50]
00324>        [LOSS= 2 :CN= 54.0]
00325>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00326>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00327> #----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00328> R0001:C00046-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00329>      CALIB NASHYD           5.0 02:2102           6.90     .086 No_date    2:45   11.79 .183     .000
00330>        [CN= 52.8: N= 3.00: Tp= 1.02]
00331> #----------------|-----------Area 2103 (East Developed Area)---------------|
00332> R0001:C00047-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00333>      CALIB STANDHYD         1.0 03:2103          1.70     .319 No_date    1:25   45.01 .698     .000
00334>        [XIMP=.40:TIMP=.65]
00335>        [LOSS= 2 :CN= 74.0]
00336>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00337>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00338> #----------------|-----------Area 2104 (East Natural Area)-------------|
00339> R0001:C00048-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00340>      CALIB NASHYD           5.0 04:2104          10.90     .201 No_date    2:20   14.08 .218     .000
00341>        [CN= 61.6: N= 3.00: Tp=  .74]
00342> #----------------|-----------Area 2105 (Central Natural Area)------------|
00343> R0001:C00049-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00344>      CALIB NASHYD           5.0 05:2105          21.50     .141 No_date    4:25   11.40 .177     .000
00345>        [CN= 53.9: N= 3.00: Tp= 2.35]
00346> #---------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00347> R0001:C00050-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00348>      ADD HYD                1.0 01:2101          10.00    1.393 No_date    1:21   30.80  n/a     .000
00349>                       +     5.0 02:2102           6.90     .086 No_date    2:45   11.79  n/a     .000
00350>                     SUM=    1.0 06:UC-West       16.90    1.396 No_date    1:21   23.04  n/a     .000
00351> #---------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00352> R0001:C00051-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00353>      ADD HYD                1.0 03:2103          1.70     .319 No_date    1:25   45.01  n/a     .000
00354>                       +     5.0 04:2104          10.90     .201 No_date    2:20   14.08  n/a     .000
00355>                       +     5.0 05:2105          21.50     .141 No_date    4:25   11.40  n/a     .000
00356>                     SUM=    1.0 07:UC-East       34.10     .340 No_date    1:26   13.93  n/a     .000
00357> #----------------|-------------------Route West Pond-------------------------|
00358> R0001:C00052-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00359>      ROUTE RESERVOIR ->     1.0 01:2101          10.00    1.393 No_date    1:21   30.80  n/a     .000
00360>                   out <=    1.0 06:W.Pond        10.00     .036 No_date    4:04   30.80  n/a     .000
00361>             overflow <=     1.0 07:W.Spill        .00     .000 No_date    0:00     .00  n/a     .000
00362>       {MxStoUsed=.2717E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=    0.hrs}
00363> #----------------|-------------------Route East Storage-----------------------|
00364> R0001:C00053-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00365>      ROUTE RESERVOIR ->     1.0 03:2103          1.70     .319 No_date    1:25   45.01  n/a     .000
00366>                   out <=    1.0 08:E.Storage     1.70     .133 No_date    1:45   45.01  n/a     .000
00367>             overflow <=     1.0 09:E.Spill        .00     .000 No_date    0:00     .00  n/a     .000
00368>       {MxStoUsed=.3435E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=    0.hrs}
00369> #---------------|----Post Development Controlled Flow to Silver Creek-------|
00370> R0001:C00054-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00371>      ADD HYD                1.0 02:2102          6.90     .086 No_date    2:45   11.79  n/a     .000
00372>                       +     1.0 06:W.Pond        10.00     .036 No_date    4:04   30.80  n/a     .000
00373>                       +     1.0 07:W.Spill        .00     .000 No_date    0:00     .00  n/a     .000
00374>                     SUM=    1.0 01:West          16.90     .121 No_date    2:45   23.04  n/a     .000
00375> R0001:C00055-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00376>      SAVE HYD               1.0 01:West          16.90     .121 No_date    2:45   23.04  n/a     .000
00377>        fname :West.0001
00378>        remark:West
00379> #---------------|----Post Development Controlled Flow to East---------------|
00380> R0001:C00056-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00381>      ADD HYD                1.0 04:2104          10.90     .201 No_date    2:20   14.08  n/a     .000
00382>                       +     1.0 05:2105          21.50     .141 No_date    4:25   11.40  n/a     .000
00383>                       +     1.0 08:E.Storage      1.70     .133 No_date    1:45   45.01  n/a     .000
00384>                       +     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
00385>                     SUM=    1.0 02:East          34.10     .330 No_date    2:15   13.93  n/a     .000
00386> R0001:C00057-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00387>      SAVE HYD               1.0 02:East          34.10     .330 No_date    2:15   13.93  n/a     .000
00388>        fname :East.0001
00389>        remark:East
00390> #*******************************************************************************
00391> #****************POST-DEVELOPMENT CONTROLLED - 50 YEAR Event ******************
00392> #*******************************************************************************
00393> #   Rainfall Depths per MTO - Basins East of Collingwood
00394> #            Chicago Rainfall Distribution
00395> #*******************************************************************************
00396> R0001:C00058-------------------------------------------------------------------------------------------------
00397>      CHICAGO STORM
00398>       {SDT= 5.00:SDUR=   4.00:PTOT=  71.55]
00399>       {A/B/C=1924.754/  10.500/    .847: R=.9998}
00400> #----------------|-----------Area 2101 (West Developed Area)---------------|
00401> R0001:C00059-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00402>      CALIB STANDHYD         1.0 01:2101          10.00    1.623 No_date    1:20   35.40 .495     .000
00403>        [XIMP=.30:TIMP=.50]
00404>        [LOSS= 2 :CN= 54.0]
00405>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00406>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00407> #----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00408> R0001:C00060-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00409>      CALIB NASHYD           5.0 02:2102           6.90     .106 No_date    2:40   14.49 .202     .000
00410>        [CN= 52.8: N= 3.00: Tp= 1.02]
00411> #----------------|-----------Area 2103 (East Developed Area)---------------|
00412> R0001:C00061-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00413>      CALIB STANDHYD         1.0 03:2103          1.70     .371 No_date    1:25   51.24 .716     .000
00414>        [XIMP=.40:TIMP=.65]
00415>        [LOSS= 2 :CN= 74.0]
00416>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00417>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00418> #----------------|-----------Area 2104 (East Natural Area)-------------|
00419> R0001:C00062-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00420>      CALIB NASHYD           5.0 04:2104          10.90     .251 No_date    2:20   17.37 .243     .000
00421>        [CN= 61.6: N= 3.00: Tp=  .74]
00422> #----------------|-----------Area 2105 (Central Natural Area)------------|
00423> R0001:C00063-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00424>      CALIB NASHYD           5.0 05:2105          21.50     .174 No_date    4:25   14.10 .197     .000
00425>        [CN= 53.9: N= 3.00: Tp= 2.35]
00426> #---------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00427> R0001:C00064-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00428>      ADD HYD                1.0 01:2101          10.00    1.623 No_date    1:20   35.40  n/a     .000
00429>                       +     5.0 02:2102           6.90     .106 No_date    2:40   14.49  n/a     .000
00430>                     SUM=    1.0 06:UC-West       16.90    1.625 No_date    1:20   26.86  n/a     .000
00431> #---------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00432> R0001:C00065-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00433>      ADD HYD                1.0 03:2103          1.70     .371 No_date    1:25   51.24  n/a     .000
00434>                       +     5.0 04:2104          10.90     .251 No_date    2:20   17.37  n/a     .000
00435>                       +     5.0 05:2105          21.50     .174 No_date    4:25   14.10  n/a     .000
00436>                     SUM=    1.0 07:UC-East       34.10     .399 No_date    1:27   17.00  n/a     .000
00437> #----------------|-------------------Route West Pond-------------------------|
00438> R0001:C00066-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00439>      ROUTE RESERVOIR ->     1.0 01:2101          10.00    1.623 No_date    1:20   35.40  n/a     .000
00440>                   out <=    1.0 06:W.Pond        10.00     .039 No_date    4:04   35.40  n/a     .000
00441>             overflow <=     1.0 07:W.Spill        .00     .000 No_date    0:00     .00  n/a     .000
00442>       {MxStoUsed=.3153E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=    0.hrs}
00443> #----------------|-------------------Route East Storage-----------------------|
00444> R0001:C00067-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00445>      ROUTE RESERVOIR ->     1.0 03:2103          1.70     .371 No_date    1:25   51.24  n/a     .000
00446>                   out <=    1.0 08:E.Storage     1.67     .166 No_date    1:36   51.25  n/a     .000
00447>             overflow <=     1.0 09:E.Spill        .03     .082 No_date    1:36   51.24  n/a     .000
00448>       {MxStoUsed=.3601E-01  m3, TotOvfVol=.1573E-02  m3, N-Ovf=     2, TotDurOvf=    0.hrs}
00449> #---------------|----Post Development Controlled Flow to Silver Creek-------|
00450> R0001:C00068-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00451>      ADD HYD                1.0 02:2102          6.90     .106 No_date    2:40   14.49  n/a     .000
00452>                       +     1.0 06:W.Pond        10.00     .039 No_date    4:04   35.40  n/a     .000
00453>                       +     1.0 07:W.Spill        .00     .000 No_date    0:00     .00  n/a     .000
00454>                     SUM=    1.0 01:West          16.90     .144 No_date    2:45   26.86  n/a     .000
00455> R0001:C00069-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00456>      SAVE HYD               1.0 01:West          16.90     .144 No_date    2:45   26.86  n/a     .000
00457>        fname :West.0001
00458>        remark:West
00459> #---------------|----Post Development Controlled Flow to East---------------|
00460> R0001:C00070-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00461>      ADD HYD                1.0 04:2104          10.90     .251 No_date    2:20   17.37  n/a     .000
00462>                       +     1.0 05:2105          21.50     .174 No_date    4:25   14.10  n/a     .000
00463>                       +     1.0 08:E.Storage     1.67     .166 No_date    1:36   51.25  n/a     .000
00464>                       +     1.0 09:E.Spill         .03     .082 No_date    1:36   51.24  n/a     .000
00465>                     SUM=    1.0 02:East          34.10     .404 No_date    2:15   17.00  n/a     .000
00466> R0001:C00071-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00467>      SAVE HYD               1.0 02:East          34.10     .404 No_date    2:15   17.00  n/a     .000
00468>        fname :East.0001
00469>        remark:East
00470> #*******************************************************************************
00471> #****************POST-DEVELOPMENT CONTROLLED - 100 YEAR Event ******************
00472> #*******************************************************************************
00473> #   Rainfall Depths per MTO - Basins East of Collingwood
00474> #            Chicago Rainfall Distribution
00475> #*******************************************************************************
00476> R0001:C00072-------------------------------------------------------------------------------------------------
00477>      CHICAGO STORM
00478>       {SDT= 5.00:SDUR=   4.00:PTOT=  79.80]
00479>       {A/B/C=2088.320/  10.500/    .842: R=.9996}
00480> #----------------|-----------Area 2101 (West Developed Area)---------------|
00481> R0001:C00073-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00482>      CALIB STANDHYD         1.0 01:2101          10.00    1.838 No_date    1:20   40.97 .513     .000
00483>        [XIMP=.30:TIMP=.50]
00484>        [LOSS= 2 :CN= 54.0]
00485>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00486>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
00487> #----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00488> R0001:C00074-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00489>      CALIB NASHYD           5.0 02:2102           6.90     .131 No_date    2:40   17.89 .224     .000
00490>        [CN= 52.8: N= 3.00: Tp= 1.02]
00491> #----------------|-----------Area 2103 (East Developed Area)---------------|
00492> R0001:C00075-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00493>      CALIB STANDHYD         1.0 03:2103          1.70     .428 No_date    1:25   58.63 .735     .000
00494>        [XIMP=.40:TIMP=.65]
00495>        [LOSS= 2 :CN= 74.0]
00496>        [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
00497>        [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
00498> #----------------|-----------Area 2104 (East Natural Area)-------------|
00499> R0001:C00076-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00500>      CALIB NASHYD           5.0 04:2104          10.90     .311 No_date    2:20   21.51 .270     .000
00501>        [CN= 61.6: N= 3.00: Tp=  .74]
00502> #----------------|-----------Area 2105 (Central Natural Area)------------|
00503> R0001:C00077-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00504>      CALIB NASHYD           5.0 05:2105          21.50     .217 No_date    4:25   17.53 .220     .000
00505>        [CN= 53.9: N= 3.00: Tp= 2.35]
00506> #---------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00507> R0001:C00078-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00508>      ADD HYD                1.0 01:2101          10.00    1.838 No_date    1:20   40.97  n/a     .000
00509>                       +     5.0 02:2102           6.90     .131 No_date    2:40   17.89  n/a     .000
00510>                     SUM=    1.0 06:UC-West       16.90    1.841 No_date    1:20   31.55  n/a     .000
00511> #---------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00512> R0001:C00079-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00513>      ADD HYD                1.0 03:2103          1.70     .428 No_date    1:25   58.63  n/a     .000
00514>                       +     5.0 04:2104          10.90     .311 No_date    2:20   21.51  n/a     .000
00515>                       +     5.0 05:2105          21.50     .217 No_date    4:25   17.53  n/a     .000
00516>                     SUM=    1.0 07:UC-East       34.10     .463 No_date    1:26   20.85  n/a     .000
00517> #----------------|-------------------Route West Pond-------------------------|
00518> R0001:C00080-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00519>      ROUTE RESERVOIR ->     1.0 01:2101          10.00    1.838 No_date    1:20   40.97  n/a     .000
00520>                   out <=    1.0 06:W.Pond        10.00     .041 No_date    4:05   40.97  n/a     .000
00521>             overflow <=     1.0 07:W.Spill        .00     .000 No_date    0:00     .00  n/a     .000
00522>       {MxStoUsed=.3681E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=     0, TotDurOvf=    0.hrs}
00523> #----------------|-------------------Route East Storage-----------------------|
00524> R0001:C00081-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00525>      ROUTE RESERVOIR ->     1.0 03:2103          1.70     .428 No_date    1:25   58.63  n/a     .000
00526>                   out <=    1.0 08:E.Storage     1.58     .166 No_date    1:31   58.63  n/a     .000
00527>             overflow <=     1.0 09:E.Spill        .12     .189 No_date    1:31   58.63  n/a     .000
00528>       {MxStoUsed=.3602E-01  m3, TotOvfVol=.7147E-02  m3, N-Ovf=     2, TotDurOvf=    0.hrs}
00529> #---------------|----Post Development Controlled Flow to Silver Creek-------|
00530> R0001:C00082-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00531>      ADD HYD                1.0 02:2102          6.90     .131 No_date    2:40   17.89  n/a     .000
00532>                       +     1.0 06:W.Pond        10.00     .041 No_date    4:05   40.97  n/a     .000
00533>                       +     1.0 07:W.Spill        .00     .000 No_date    0:00     .00  n/a     .000
00534>                     SUM=    1.0 01:West          16.90     .171 No_date    2:45   31.55  n/a     .000
00535> R0001:C00083-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00536>      SAVE HYD               1.0 01:West          16.90     .171 No_date    2:45   31.55  n/a     .000
00537>        fname :West.0001
00538>        remark:West
00539> #---------------|----Post Development Controlled Flow to East---------------|
00540> R0001:C00084-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00541>      ADD HYD                1.0 04:2104          10.90     .311 No_date    2:20   21.51  n/a     .000
00542>                       +     1.0 05:2105          21.50     .217 No_date    4:25   17.53  n/a     .000
00543>                       +     1.0 08:E.Storage     1.58     .166 No_date    1:31   58.63  n/a     .000
00544>                       +     1.0 09:E.Spill        .12     .189 No_date    1:31   58.63  n/a     .000
00545>                     SUM=    1.0 02:East          34.10     .486 No_date    2:20   20.85  n/a     .000
00546> R0001:C00085-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00547>      SAVE HYD               1.0 02:East          34.10     .486 No_date    2:20   20.85  n/a     .000
00548>        fname :East.0001
00549>        remark:East
00550> R0001:C00086-------------------------------------------------------------------------------------------------
00551>      FINISH
00552> -------------------------------------------------------------------------------------------------------------
00553> *************************************************************************************************************
00554>      WARNINGS / ERRORS / NOTES
00555>      -------------------------
00556>    Simulation ended on 2019-07-25     at 22:59:53
00557> =============================================================================================================
00558>
```

```
 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
 S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2   0   0   11   7   7
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2   0   0   11       7 Ver4.05.0
     S   W W     M   M   H   H     Y     M   M   O   O        222   0   0   11       7  APR 2017
 SSSSS   W W     M   M   H   H     Y     M   M    OOO         2     0   0   11     7    =========
                                                              2     0   0   11     7    # 3737016
       StormWater Management HYdrologic Model                 222     000    11     7    =========
```

```
 ************************************  SWMHYMO Ver4.05.0  ************************************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************      based on the principles of HYMO and its successors      ******************
 ******************                  OTTHYMO-83 and OTTHYMO-89.                  ******************
 ********************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.           ******************
 ******************                  Ottawa,  Ontario: (613) 836-3884            ******************
 ******************                  Gatineau, Quebec: (819) 243-6858            ******************
 ******************                  E-Mail: swmhymo@jfsa.com                    ******************
 ********************************************************************************
```

```
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.                ++++++++++++++++++++
 ++++++++++++++++++                Collingwood          SERIAL#:3737016          ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
 ******************                +++++++ PROGRAM ARRAY DIMENSIONS +++++++            ******************
 ******************                Maximum value for ID numbers  :    11            ******************
 ******************                Max. number of rainfall points: 105408           ******************
 ******************                Max. number of flow points    : 105408           ******************
 ********************************************************************************
```

```
 ************************************  SWMHYMO Ver4.05.0  ************************************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************      based on the principles of HYMO and its successors      ******************
 ******************                  OTTHYMO-83 and OTTHYMO-89.                  ******************
 ********************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.           ******************
 ******************                  Ottawa,  Ontario: (613) 836-3884            ******************
 ******************                  Gatineau, Quebec: (819) 243-6858            ******************
 ******************                  E-Mail: swmhymo@jfsa.com                    ******************
 ********************************************************************************
```

```
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.                ++++++++++++++++++++
 ++++++++++++++++++                Collingwood          SERIAL#:3737016          ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
 ******************                +++++++ PROGRAM ARRAY DIMENSIONS +++++++            ******************
 ******************                Maximum value for ID numbers  :    11            ******************
 ******************                Max. number of rainfall points: 105408           ******************
 ******************                Max. number of flow points    : 105408           ******************
 ********************************************************************************
```

```
 ****************************  D E T A I L E D   O U T P U T  ****************************
 ********************************************************************************
 *                    RUN DATE: 2019-07-25       TIME: 22:59:52     RUN COUNTER: 000008    *
 ********************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\ALL_CHI.dat                                                 *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\ALL_CHI.out                                                 *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\ALL_CHI.sum                                                 *
 * User comments:                                                                       *
 * 1:_____________________________________________________________________________*
 * 2:_____________________________________________________________________________*
 * 3:_____________________________________________________________________________*
 ********************************************************************************
```

```
R0001:C00001-----------------------------------------------------------------------------
*#*************************************************************************
*#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
*#  Date        : 01-17-2011
*#  Updated     : 07-25-2019
*#  Modeller    : [J.Proctor/R.Alexander]
*#  Company     : C.F. Crozier & Associates Inc.
*#  License #   :  3737016
*#*************************************************************************
*#J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\ALL_CHI.dat
*#*************************************************************************
-------------------------------------------------------------------------------
| START             | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
-------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
    TZERO =   .00 hrs on       0
    METOUT=   2 (output = METRIC)
    NRUN  = 0001
    NSTORM=   0
-------------------------------------------------------------------------------
R0001:C00002-----------------------------------------------------------------------------
*#*************************************************************************
*#******************POST-DEVELOPMENT CONTROLLED - 2 YEAR Event ******************
*#*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             Chicago Rainfall Distribution
*
*#*************************************************************************
--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 793.404
| Ptotal= 33.82 mm |                          B=   7.539
--------------------                          C=    .824
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =   .33

                     The CORRELATION coefficient is = .9995845

                       TIME        ENTERED             COMPUTED
                      (min)        (mm/hr)              (mm/hr)
                         5.          95.00                98.75
                        10.          79.00                74.89
                        15.          62.00                60.91
                        30.          40.00                40.01
                        60.          25.00                24.66
                       120.          14.00                14.60
                       360.           6.10                 6.10
                       720.           3.30                 3.48
                      1440.           2.10                 1.97

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
      hr:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       0:05   1.822|   0:45   3.837|   1:25  46.015|   2:05   5.750|   2:45   3.066|   3:25   2.127
       0:10   1.944|   0:50   4.499|   1:30  25.872|   2:10   5.171|   2:50   2.902|   3:30   2.051
       0:15   2.086|   0:55   5.453|   1:35  17.562|   2:15   4.700|   2:55   2.756|   3:35   1.980
       0:20   2.251|   1:00   6.943|   1:40  13.162|   2:20   4.310|   3:00   2.624|   3:40   1.914
       0:25   2.448|   1:05   9.575|   1:45  10.482|   2:25   3.982|   3:05   2.505|   3:45   1.853
       0:30   2.686|   1:10  15.343|   1:50   8.695|   2:30   3.703|   3:10   2.398|   3:50   1.796
       0:35   2.980|   1:15  35.921|   1:55   7.425|   2:35   3.461|   3:15   2.299|   3:55   1.743
       0:40   3.351|   1:20  98.747|   2:00   6.480|   2:40   3.251|   3:20   2.210|   4:00   1.693
-------------------------------------------------------------------------------
R0001:C00003-----------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)---------------|
-------------------------
| CALIB STANDHYD          |   Area     (ha)=   10.00
| 01:2101       DT= 1.00  |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
-------------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.00          5.00
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope     (%)=        .50          2.00
     Length            (m)=     100.00         35.00
     Mannings n             =      .013          .150

     Max.eff.Inten.(mm/hr)=      98.75         10.91
                 over (min)        3.00         15.00
     Storage Coeff.  (min)=       3.16 (ii)    14.79 (ii)
     Unit Hyd. Tpeak (min)=       3.00         15.00
     Unit Hyd. peak  (cms)=        .36           .08

                                                      *TOTALS*
     PEAK FLOW       (cms)=        .67           .09          .684 (iii)
     TIME TO PEAK    (hrs)=       1.35          1.63         1.350
     RUNOFF VOLUME    (mm)=      31.82          4.95        13.011
     TOTAL RAINFALL   (mm)=      33.82         33.82        33.819
     RUNOFF COEFFICIENT   =        .94           .15          .385

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

     Unit Hyd Qpeak  (cms)=      .258

     PEAK FLOW       (cms)=      .020 (i)
     TIME TO PEAK    (hrs)=    2.833
     DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
     AVERAGE FLOW    (cms)=     .005
     RUNOFF VOLUME    (mm)=    2.934
     TOTAL RAINFALL   (mm)=   33.819
     RUNOFF COEFFICIENT   =      .087

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

-------------------------------------------------------------------------------
R0001:C00005-----------------------------------------------------------------------------
*#-----------------|-----------Area 2103 (East Developed Area)---------------|
-------------------------
| CALIB STANDHYD          |   Area     (ha)=    1.70
| 03:2103       DT= 1.00  |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
-------------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.10          .60
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     295.00        35.00
     Mannings n             =      .013          .150

     Max.eff.Inten.(mm/hr)=      89.96        34.47
                 over (min)        6.00        14.00
     Storage Coeff.  (min)=       6.28 (ii)   13.62 (ii)
     Unit Hyd. Tpeak (min)=       6.00        14.00
     Unit Hyd. peak  (cms)=        .18          .08

                                                      *TOTALS*
     PEAK FLOW       (cms)=        .11          .03          .131 (iii)
     TIME TO PEAK    (hrs)=       1.40         1.60         1.417
     RUNOFF VOLUME    (mm)=      31.82        11.51        19.634
     TOTAL RAINFALL   (mm)=      33.82        33.82        33.819
     RUNOFF COEFFICIENT   =        .94          .34          .581

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.

     Unit Hyd Qpeak  (cms)=      .563

     PEAK FLOW       (cms)=      .042 (i)
     TIME TO PEAK    (hrs)=    2.500
     DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
     AVERAGE FLOW    (cms)=     .011
     RUNOFF VOLUME    (mm)=    3.188
     TOTAL RAINFALL   (mm)=   33.819
     RUNOFF COEFFICIENT   =      .094

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

-------------------------------------------------------------------------------
R0001:C00006-----------------------------------------------------------------------------
*#-----------------|-------------Area 2104 (East Natural Area)-------------|
-------------------------
| CALIB NASHYD            |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00  |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=      .563

     PEAK FLOW       (cms)=      .042 (i)
     TIME TO PEAK    (hrs)=    2.500
     DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
     AVERAGE FLOW    (cms)=     .011
     RUNOFF VOLUME    (mm)=    3.188
     TOTAL RAINFALL   (mm)=   33.819
     RUNOFF COEFFICIENT   =      .094

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

-------------------------------------------------------------------------------
R0001:C00007-----------------------------------------------------------------------------
*#-----------------|----------Area 2105 (Central Natural Area)-------------|
-------------------------
| CALIB NASHYD            |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00  |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    2.350

     Unit Hyd Qpeak  (cms)=      .349

     PEAK FLOW       (cms)=      .032 (i)
     TIME TO PEAK    (hrs)=    4.583
     DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
     AVERAGE FLOW    (cms)=     .008
     RUNOFF VOLUME    (mm)=    2.603
     TOTAL RAINFALL   (mm)=   33.819
     RUNOFF COEFFICIENT   =      .077

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

-------------------------------------------------------------------------------
R0001:C00008-----------------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
-------------------------
| ADD HYD                 |
| 06:UC-West              |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
-------------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 01:2101          10.000      .684    1.350    13.011     .000
                        +ID 2 02:2102           6.900      .020    2.833     2.934     .000
                        ================================================================
                        SUM   06:UC-West       16.900      .684    1.350     8.897     .000

  NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
R0001:C00009-----------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
-------------------------
| ADD HYD                 |
| 07:UC-East              |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
-------------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                          ID 1 03:2103           1.700      .131    1.417    19.634     .000
                        +ID 2 04:2104          10.900      .042    2.500     3.188     .000
                        +ID 3 05:2105          21.500      .032    4.583     2.603     .000
                        ================================================================
                        SUM   07:UC-East       34.100      .133    1.417     3.639     .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
R0001:C00010-----------------------------------------------------------------------------
*#-----------------|-----------------Route West Pond-----------------|
-------------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:2101         |
| OUT<06:W.Pond       | ========================  OUTFLOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m)
                         .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
                         .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
                         .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00

     ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
     ----------------------      (ha)     (cms)     (hrs)       (mm)
      INFLOW > 01:2101         10.000      .684    1.350     13.011
     OUTFLOW < 06:W.Pond       10.000      .024    4.017     13.011
    OVERFLOW < 07:W.Spill         .000      .000     .000       .000
```

```
00309>
00310>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
00311>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00312>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00313>
00314>
00315>                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    3.565
00316>                    TIME SHIFT OF PEAK FLOW          (min)=   160.00
00317>                    MAXIMUM  STORAGE   USED       (ha.m.)=.1065E+00
00318>
00319> ------------------------------------------------------------------------------------------------
00320> R0001:C00011------------------------------------------------------------------------------------
00321> *#-----------------|--------------------Route East Storage----------------------|
00322> -------------------------
00323> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00324> |  IN>03:2103         |
00325> | OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
00326> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00327>                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
00328>                           .000 .0000E+00|    .008 .1900E-01|    .099 .2930E-01|    .166 .3600E-01
00329>                           .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00
00330>
00331>     ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
00332>     ----------------------       (ha)     (cms)     (hrs)       (mm)
00333>      INFLOW > 03:2103           1.700      .131     1.417     19.634
00334>     OUTFLOW < 08:E.Storage      1.700      .026     2.167     19.634
00335>    OVERFLOW < 09:E.Spill         .000      .000      .000       .000
00336>
00337>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
00338>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00339>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00340>
00341>
00342>                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   19.873
00343>                    TIME SHIFT OF PEAK FLOW          (min)=   45.00
00344>                    MAXIMUM  STORAGE   USED       (ha.m.)=.2104E-01
00345>
00346> ------------------------------------------------------------------------------------------------
00347> R0001:C00012------------------------------------------------------------------------------------
00348> *#-----------------|----Post Development Controlled Flow to Silver Creek-------|
00349> -------------------------
00350> | ADD HYD             |
00351> | 01:West             |   ID:NHYD            AREA     QPEAK    TPEAK     R.V.     DWF
00352> -------------------------                      (ha)     (cms)    (hrs)     (mm)    (cms)
00353>                        ID 1 02:2102          6.900      .020    2.833     2.934     .000
00354>                       +ID 2 06:W.Pond       10.000      .024    4.017    13.011     .000
00355>                       +ID 3 07:W.Spill        .000      .000     .000      .000     .000  **DRY**
00356>                       ==========================================================
00357>                       SUM   01:West         16.900      .044    2.833     8.897     .000
00358>
00359>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00360>
00361> ------------------------------------------------------------------------------------------------
00362> R0001:C00013------------------------------------------------------------------------------------
00363> --------------------
00364> | SAVE HYD         |   AREA       (ha)=   16.900
00365> | ID=01:West       |   QPEAK     (cms)=    .044 (i)
00366> | DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   2.833
00367> --------------------   VOLUME      (mm)=   8.897
00368>   Filename: West.0001
00369>   Comments: West
00370>
00371>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00372> ------------------------------------------------------------------------------------------------
00373> R0001:C00014------------------------------------------------------------------------------------
00374> *#-----------------|----Post Development Controlled Flow to East---------------|
00375> -------------------------
00376> | ADD HYD             |
00377> | 02:East             |   ID:NHYD            AREA     QPEAK    TPEAK     R.V.     DWF
00378> -------------------------                      (ha)     (cms)    (hrs)     (mm)    (cms)
00379>                        ID 1 04:2104         10.900      .042    2.500     3.188     .000
00380>                       +ID 2 05:2105         21.500      .032    4.583     2.603     .000
00381>                       +ID 3 08:E.Storage     1.700      .026    2.167    19.634     .000
00382>                       +ID 4 09:E.Spill         .000      .000     .000      .000     .000  **DRY**
00383>                       ==========================================================
00384>                       SUM   02:East         34.100      .077    2.500     3.639     .000
00385>
00386>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00387>
00388> ------------------------------------------------------------------------------------------------
00389> R0001:C00015------------------------------------------------------------------------------------
00390> --------------------
00391> | SAVE HYD         |   AREA       (ha)=   34.100
00392> | ID=02:East       |   QPEAK     (cms)=    .077 (i)
00393> | DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   2.500
00394> --------------------   VOLUME      (mm)=   3.639
00395>   Filename: East.0001
00396>   Comments: East
00397>
00398>      (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00399> ------------------------------------------------------------------------------------------------
00400> R0001:C00016------------------------------------------------------------------------------------
00401> *#*************************************************************************
00402> *#*********************POST-DEVELOPMENT CONTROLLED - 5 YEAR Event **********************
00403> *#*************************************************************************
00404> *
00405> *#   Rainfall Depths per MTO - Basins East of Collingwood
00406> *#             Chicago Rainfall Distribution
00407> *
00408> *#*************************************************************************
00409> --------------------
00410> | CHICAGO STORM    |    IDF curve parameters: A=1142.331
00411> | Ptotal= 45.85 mm |                          B=   9.025
00412> --------------------                          C=    .834
00413>                          used in:   INTENSITY =  A / (t + B)^C
00414>
00415>                          Duration of storm  =  4.00 hrs
00416>                          Storm time step    =  5.00 min
00417>                          Time to peak ratio =   .33
00418>
00419>                     The CORRELATION coefficient is = .9998649
00420>
00421>                      TIME        ENTERED             COMPUTED
00422>                      (min)       (mm/hr)              (mm/hr)
00423>                        5.         125.00               126.26
00424>                       10.         100.00                97.91
00425>                       15.          82.00                80.60
00426>                       30.          53.00                53.78
00427>                       60.          34.00                33.42
00428>                      120.          19.00                19.84
00429>                      360.           8.40                 8.26
00430>                      720.           4.60                 4.68
00431>                     1440.           2.70                 2.64
00432>
00433>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00434>       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00435>       0:05   2.417|   0:45   5.236|   1:25  63.053|   2:05   7.964|   2:45   4.147|   3:25   2.837
00436>       0:10   2.585|   0:50   6.176|   1:30  36.365|   2:10   7.135|   2:50   3.917|   3:30   2.731
00437>       0:15   2.780|   0:55   7.538|   1:35  24.820|   2:15   6.463|   2:55   3.712|   3:35   2.634
00438>       0:20   3.009|   1:00   9.674|   1:40  18.587|   2:20   5.908|   3:00   3.528|   3:40   2.543
00439>       0:25   3.283|   1:05  13.454|   1:45  14.756|   2:25   5.442|   3:05   3.362|   3:45   2.459
00440>       0:30   3.615|   1:10  21.676|   1:50  12.191|   2:30   5.045|   3:10   3.212|   3:50   2.381
00441>       0:35   4.026|   1:15  49.678|   1:55  10.367|   2:35   4.704|   3:15   3.076|   3:55   2.308
00442>       0:40   4.549|   1:20 126.263|   2:00   9.010|   2:40   4.407|   3:20   2.951|   4:00   2.240
00443>
00444> ------------------------------------------------------------------------------------------------
00445> R0001:C00017------------------------------------------------------------------------------------
00446> *#-----------------|-----------Area 2101 (West Developed Area)----------------|
00447> -------------------------
00448> | CALIB STANDHYD       |   Area     (ha)=   10.00
00449> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00450> -------------------------
00451>                            IMPERVIOUS    PERVIOUS (i)
00452>      Surface Area     (ha)=       5.00         5.00
00453>      Dep. Storage     (mm)=       2.00         5.00
00454>      Average Slope     (%)=        .50         2.00
00455>      Length             (m)=     100.00        35.00
00456>      Mannings n              =      .013         .150
00457>
00458>      Max.eff.Inten.(mm/hr)=     126.26        21.67
00459>                 over (min)        3.00        12.00
00460>      Storage Coeff.  (min)=       2.87 (ii)   11.70 (ii)
00461>      Unit Hyd. Tpeak (min)=       3.00        12.00
00462>      Unit Hyd. peak  (cms)=        .39          .10
00463>                                                      *TOTALS*
00464>      PEAK FLOW       (cms)=        .88          .19          .935 (iii)
00465>      TIME TO PEAK    (hrs)=       1.35         1.58         1.350
00466>      RUNOFF VOLUME    (mm)=      43.85         9.08        19.513
00467>      TOTAL RAINFALL   (mm)=      45.85        45.85        45.851
00468>      RUNOFF COEFFICIENT   =        .96          .20          .426
00469>
00470>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00471>              CN* =  54.0    Ia = Dep. Storage  (Above)
00472>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00473>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00474>
00475> ------------------------------------------------------------------------------------------------
00476> R0001:C00018------------------------------------------------------------------------------------
00477> *#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00478> -------------------------
00479> | CALIB NASHYD         |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
00480> | 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
00481> -------------------------   U.H. Tp(hrs)=    1.020
00482>
00483>      Unit Hyd Qpeak  (cms)=     .258
00484>
00485>      PEAK FLOW       (cms)=     .042 (i)
00486>      TIME TO PEAK    (hrs)=    2.750
00487>      DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
00488>      AVERAGE FLOW    (cms)=     .010
00489>      RUNOFF VOLUME    (mm)=    5.813
00490>      TOTAL RAINFALL   (mm)=   45.851
00491>      RUNOFF COEFFICIENT   =     .127
00492>
00493>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00494>
00495> ------------------------------------------------------------------------------------------------
00496> R0001:C00019------------------------------------------------------------------------------------
00497> *#-----------------|-----------Area 2103 (East Developed Area)---------------|
00498> -------------------------
00499> | CALIB STANDHYD       |   Area     (ha)=    1.70
00500> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00501> -------------------------
00502>                            IMPERVIOUS    PERVIOUS (i)
00503>      Surface Area     (ha)=       1.10          .60
00504>      Dep. Storage     (mm)=       2.00         5.00
00505>      Average Slope     (%)=        .50         2.00
00506>      Length             (m)=     295.00        35.00
00507>      Mannings n              =      .013         .150
00508>
00509>      Max.eff.Inten.(mm/hr)=     115.73        64.68
00510>                 over (min)        6.00        11.00
00511>      Storage Coeff.  (min)=       5.68 (ii)   11.39 (ii)
00512>      Unit Hyd. Tpeak (min)=       6.00        11.00
00513>      Unit Hyd. peak  (cms)=        .20          .10
00514>                                                      *TOTALS*
00515>      PEAK FLOW       (cms)=        .16          .07          .199 (iii)
00516>      TIME TO PEAK    (hrs)=       1.40         1.55         1.417
00517>      RUNOFF VOLUME    (mm)=      43.85        19.41        29.184
00518>      TOTAL RAINFALL   (mm)=      45.85        45.85        45.851
00519>      RUNOFF COEFFICIENT   =        .96          .42          .636
00520>
00521>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00522>              CN* =  74.0    Ia = Dep. Storage  (Above)
00523>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00524>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00525>
00526> ------------------------------------------------------------------------------------------------
00527> R0001:C00020------------------------------------------------------------------------------------
00528> *#-----------------|-----------Area 2104 (East Natural Area)-------------|
00529> -------------------------
00530> | CALIB NASHYD         |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
00531> | 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
00532> -------------------------   U.H. Tp(hrs)=     .740
00533>
00534>      Unit Hyd Qpeak  (cms)=     .563
00535>
00536>      PEAK FLOW       (cms)=     .092 (i)
00537>      TIME TO PEAK    (hrs)=    2.417
00538>      DURATION        (hrs)=   9.167, (dddd|hh:mm:)=   0|09:10
00539>      AVERAGE FLOW    (cms)=     .022
00540>      RUNOFF VOLUME    (mm)=    6.720
00541>      TOTAL RAINFALL   (mm)=   45.851
00542>      RUNOFF COEFFICIENT   =     .147
00543>
00544>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00545>
00546> ------------------------------------------------------------------------------------------------
00547> R0001:C00021------------------------------------------------------------------------------------
00548> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00549> -------------------------
00550> | CALIB NASHYD         |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
00551> | 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
00552> -------------------------   U.H. Tp(hrs)=    2.350
00553>
00554>      Unit Hyd Qpeak  (cms)=     .349
00555>
00556>      PEAK FLOW       (cms)=     .067 (i)
00557>      TIME TO PEAK    (hrs)=    4.500
00558>      DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
00559>      AVERAGE FLOW    (cms)=     .016
00560>      RUNOFF VOLUME    (mm)=    5.426
00561>      TOTAL RAINFALL   (mm)=   45.851
00562>      RUNOFF COEFFICIENT   =     .118
00563>
00564>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00565>
00566> ------------------------------------------------------------------------------------------------
00567> R0001:C00022------------------------------------------------------------------------------------
00568> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00569> -------------------------
00570> | ADD HYD             |
00571> | 06:UC-West          |   ID:NHYD            AREA     QPEAK    TPEAK     R.V.     DWF
00572> -------------------------                      (ha)     (cms)    (hrs)     (mm)    (cms)
00573>                        ID 1 01:2101          10.000      .935    1.350    19.513     .000
00574>                       +ID 2 02:2102           6.900      .042    2.750     5.813     .000
00575>                       ==========================================================
00576>                       SUM   06:UC-West       16.900      .936    1.350    13.919     .000
00577>
00578>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00579>
00580> ------------------------------------------------------------------------------------------------
00581> R0001:C00023------------------------------------------------------------------------------------
00582> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00583> -------------------------
00584> | ADD HYD             |
00585> | 07:UC-East          |   ID:NHYD            AREA     QPEAK    TPEAK     R.V.     DWF
00586> -------------------------                      (ha)     (cms)    (hrs)     (mm)    (cms)
00587>                        ID 1 03:2103          1.700      .199    1.417    29.184     .000
00588>                       +ID 2 04:2104         10.900      .092    2.417     6.720     .000
00589>                       +ID 3 05:2105         21.500      .067    4.500     5.426     .000
00590>                       ==========================================================
00591>                       SUM   07:UC-East      34.100      .206    1.433     7.024     .000
00592>
00593>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00594>
00595> ------------------------------------------------------------------------------------------------
00596> R0001:C00024------------------------------------------------------------------------------------
00597> *#-----------------|-------------------Route West Pond----------------------|
00598> -------------------------
00599> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00600> |  IN>01:2101         |
00601> | OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
00602> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00603>                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
00604>                           .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
00605>                           .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
00606>                           .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00
00607>
00608>     ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
00609>     ----------------------       (ha)     (cms)     (hrs)       (mm)
00610>      INFLOW > 01:2101           10.000      .935     1.350     19.513
00611>     OUTFLOW < 06:W.Pond         10.000      .030     4.050     19.512
00612>    OVERFLOW < 07:W.Spill          .000      .000      .000       .000
00613>
00614>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
00615>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00616>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
```

```
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    3.196
                    TIME SHIFT OF PEAK FLOW          (min)=   162.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=.1657E+00

------------------------------------------------------------------------------------------------
R0001:C00025-----------------------------------------------------------------------------------
*#----------------|-------------------Route East Storage-------------------|
------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>03:2103         |
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                        (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                         .000 .0000E+00|    .008 .1900E-01|    .099 .2930E-01|    .166 .3600E-01
                         .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00

      ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
      -----------------------     (ha)     (cms)     (hrs)      (mm)
       INFLOW > 03:2103          1.700      .199     1.417     29.184
     OUTFLOW < 08:E.Storage      1.700      .068     1.867     29.183
    OVERFLOW < 09:E.Spill         .000      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   33.989
                    TIME SHIFT OF PEAK FLOW          (min)=   27.00
                    MAXIMUM  STORAGE   USED        (ha.m.)=.2574E-01

------------------------------------------------------------------------------------------------
R0001:C00026-----------------------------------------------------------------------------------
*#----------------|----Post Development Controlled Flow to Silver Creek-------|
------------------
| ADD HYD         |
| 01:West         |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                     ID 1 02:2102        6.900      .042    2.750     5.813     .000
                    +ID 2 06:W.Pond     10.000      .030    4.050    19.512     .000
                    +ID 3 07:W.Spill      .000      .000     .000      .000     .000  **DRY**
                    ========================================================
                    SUM   01:West       16.900      .071    2.750    13.919     .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------------------------
R0001:C00027-----------------------------------------------------------------------------------
------------------
| SAVE HYD        |   AREA       (ha)=   16.900
| ID=01:West      |   QPEAK     (cms)=     .071 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=    2.750
------------------   VOLUME     (mm)=   13.919
  Filename: West.0001
  Comments: West

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

------------------------------------------------------------------------------------------------
R0001:C00028-----------------------------------------------------------------------------------
*#----------------|----Post Development Controlled Flow to East---------------|
------------------
| ADD HYD         |
| 02:East         |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                     ID 1 04:2104       10.900      .092    2.417     6.720     .000
                    +ID 2 05:2105       21.500      .067    4.500     5.426     .000
                    +ID 3 08:E.Storage   1.700      .068    1.867    29.183     .000
                    +ID 4 09:E.Spill      .000      .000     .000      .000     .000  **DRY**
                    ========================================================
                    SUM   02:East       34.100      .161    2.250     7.024     .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------------------------
R0001:C00029-----------------------------------------------------------------------------------
------------------
| SAVE HYD        |   AREA       (ha)=   34.100
| ID=02:East      |   QPEAK     (cms)=     .161 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=    2.250
------------------   VOLUME     (mm)=    7.024
  Filename: East.0001
  Comments: East

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

------------------------------------------------------------------------------------------------
R0001:C00030-----------------------------------------------------------------------------------
*#**************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 10 YEAR Event ******************
*#**************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             Chicago Rainfall Distribution
*
*#**************************************************************************
----------------------
| CHICAGO STORM    |    IDF curve parameters: A=1362.588
| Ptotal= 54.36 mm |                          B=   9.188
----------------------                      C=    .835
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =   .33

                       The CORRELATION coefficient is = .9999022

                        TIME        ENTERED             COMPUTED
                       (min)        (mm/hr)              (mm/hr)
                          5.         150.00               148.77
                         10.         115.00               115.62
                         15.          95.00                95.29
                         30.          62.00                63.69
                         60.          41.00                39.62
                        120.          23.00                23.52
                        360.          10.00                 9.79
                        720.           5.50                 5.54
                       1440.           3.10                 3.12

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:05   2.860|   0:45   6.214|   1:25  74.800|   2:05   9.465|   2:45   4.917|   3:25   3.358
      0:10   3.059|   0:50   7.334|   1:30  43.260|   2:10   8.477|   2:50   4.643|   3:30   3.233
      0:15   3.291|   0:55   8.958|   1:35  29.549|   2:15   7.676|   2:55   4.399|   3:35   3.117
      0:20   3.564|   1:00  11.505|   1:40  22.129|   2:20   7.014|   3:00   4.181|   3:40   3.010
      0:25   3.889|   1:05  16.012|   1:45  17.564|   2:25   6.459|   3:05   3.984|   3:45   2.910
      0:30   4.284|   1:10  25.806|   1:50  14.506|   2:30   5.987|   3:10   3.805|   3:50   2.817
      0:35   4.773|   1:15  58.993|   1:55  12.331|   2:35   5.580|   3:15   3.643|   3:55   2.731
      0:40   5.396|   1:20 148.768|   2:00  10.713|   2:40   5.227|   3:20   3.495|   4:00   2.649

------------------------------------------------------------------------------------------------
R0001:C00031-----------------------------------------------------------------------------------
*#----------------|-----------Area 2101 (West Developed Area)---------------|
------------------
| CALIB STANDHYD          |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
------------------------

                            IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=      5.00          5.00
      Dep. Storage     (mm)=      2.00          5.00
      Average Slope     (%)=       .50          2.00
      Length            (m)=    100.00         35.00
      Mannings n            =      .013          .150

      Max.eff.Inten.(mm/hr)=    148.77         32.85
                      over (min)      3.00         10.00
      Storage Coeff.  (min)=      2.68 (ii)    10.17 (ii)
      Unit Hyd. Tpeak (min)=      3.00         10.00
      Unit Hyd. peak  (cms)=       .40           .11
                                                    *TOTALS*
      PEAK FLOW       (cms)=      1.05           .28          1.160 (iii)
      TIME TO PEAK    (hrs)=      1.35          1.53          1.350
      RUNOFF VOLUME    (mm)=     52.36         12.56         24.502
      TOTAL RAINFALL   (mm)=     54.36         54.36         54.361
      RUNOFF COEFFICIENT   =       .96           .23           .451

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  54.0    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.

------------------------------------------------------------------------------------------------
R0001:C00032-----------------------------------------------------------------------------------
*#----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
------------------
| CALIB NASHYD            |   Area     (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    1.020

      Unit Hyd Qpeak  (cms)=     .258

      PEAK FLOW       (cms)=     .060 (i)
      TIME TO PEAK    (hrs)=    2.750
      DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
      AVERAGE FLOW    (cms)=     .014
      RUNOFF VOLUME    (mm)=    8.332
      TOTAL RAINFALL   (mm)=   54.361
      RUNOFF COEFFICIENT   =     .153

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

------------------------------------------------------------------------------------------------
R0001:C00033-----------------------------------------------------------------------------------
*#----------------|-----------Area 2103 (East Developed Area)---------------|
------------------
| CALIB STANDHYD          |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
-------------------------

                            IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=      1.10           .60
      Dep. Storage     (mm)=      2.00          5.00
      Average Slope     (%)=       .50          2.00
      Length            (m)=    295.00         35.00
      Mannings n            =      .013          .150

      Max.eff.Inten.(mm/hr)=    148.77         90.56
                      over (min)      5.00         10.00
      Storage Coeff.  (min)=      5.13 (ii)    10.12 (ii)
      Unit Hyd. Tpeak (min)=      5.00         10.00
      Unit Hyd. peak  (cms)=       .22           .11
                                                    *TOTALS*
      PEAK FLOW       (cms)=       .19           .09           .253 (iii)
      TIME TO PEAK    (hrs)=      1.38          1.52          1.400
      RUNOFF VOLUME    (mm)=     52.36         25.57         36.286
      TOTAL RAINFALL   (mm)=     54.36         54.36         54.361
      RUNOFF COEFFICIENT   =       .96           .47           .668

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    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.

------------------------------------------------------------------------------------------------
R0001:C00034-----------------------------------------------------------------------------------
*#----------------|-----------Area 2104 (East Natural Area)-------------|
------------------
| CALIB NASHYD            |   Area     (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=     .563

      PEAK FLOW       (cms)=     .137 (i)
      TIME TO PEAK    (hrs)=    2.417
      DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
      AVERAGE FLOW    (cms)=     .032
      RUNOFF VOLUME    (mm)=    9.826
      TOTAL RAINFALL   (mm)=   54.361
      RUNOFF COEFFICIENT   =     .181

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

------------------------------------------------------------------------------------------------
R0001:C00035-----------------------------------------------------------------------------------
*#----------------|-----------Area 2105 (Central Natural Area)------------|
------------------
| CALIB NASHYD            |   Area     (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .098 (i)
      TIME TO PEAK    (hrs)=    4.417
      DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
      AVERAGE FLOW    (cms)=     .024
      RUNOFF VOLUME    (mm)=    7.930
      TOTAL RAINFALL   (mm)=   54.361
      RUNOFF COEFFICIENT   =     .146

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

------------------------------------------------------------------------------------------------
R0001:C00036-----------------------------------------------------------------------------------
*#----------------|---Post Development Uncontrolled Flow to Silver Creek-----|
------------------
| ADD HYD         |
| 06:UC-West      |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                     ID 1 01:2101       10.000     1.160    1.350    24.502     .000
                    +ID 2 02:2102        6.900      .060    2.750     8.332     .000
                    ========================================================
                    SUM   06:UC-West    16.900     1.161    1.350    17.900     .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------------------------
R0001:C00037-----------------------------------------------------------------------------------
*#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
------------------
| ADD HYD         |
| 07:UC-East      |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                     ID 1 03:2103        1.700      .253    1.400    36.286     .000
                    +ID 2 04:2104       10.900      .137    2.417     9.826     .000
                    +ID 3 05:2105       21.500      .098    4.417     7.930     .000
                    ========================================================
                    SUM   07:UC-East    34.100      .266    1.433     9.950     .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------------------------
R0001:C00038-----------------------------------------------------------------------------------
*#----------------|-------------------Route West Pond--------------------------|
------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:2101         |
| OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                        (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                         .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
                         .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
                         .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00

      ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
      -----------------------     (ha)     (cms)     (hrs)      (mm)
       INFLOW > 01:2101          10.000     1.160     1.350     24.502
     OUTFLOW < 06:W.Pond         10.000      .033     4.050     24.502
    OVERFLOW < 07:W.Spill          .000      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.835
                    TIME SHIFT OF PEAK FLOW          (min)=   162.00
```

```
                    MAXIMUM  STORAGE   USED       (ha.m.)=.2123E+00

--------------------------------------------------------------------------------
R0001:C00039-----------------------------------------------------------------------
*#-----------------|--------------------Route East Storage----------------------|
----------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|   IN>03:2103        |
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                         .000 .0000E+00|  .008 .1900E-01|  .099 .2930E-01|  .166 .3600E-01
                         .006 .8500E-02|  .099 .2930E-01|  .144 .3600E-01|  .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     ----------------------      (ha)     (cms)     (hrs)       (mm)
      INFLOW > 03:2103          1.700      .253     1.400     36.286
    OUTFLOW < 08:E.Storage      1.700      .100     1.783     36.286
   OVERFLOW < 09:E.Spill         .000      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   39.369
                    TIME SHIFT OF PEAK FLOW          (min)=   23.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.2938E-01
--------------------------------------------------------------------------------
R0001:C00040-----------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
----------------------
| ADD HYD             |
| 01:West             |   ID:NHYD           AREA     QPEAK    TPEAK      R.V.     DWF
----------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                       ID 1 02:2102          6.900      .060    2.750     8.332    .000
                      +ID 2 06:W.Pond       10.000      .033    4.050    24.502    .000
                      +ID 3 07:W.Spill        .000      .000     .000      .000    .000  **DRY**
                      ==========================================================
                      SUM   01:West         16.900      .092    2.750    17.900    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
R0001:C00041-----------------------------------------------------------------------
----------------------
| SAVE HYD          |   AREA       (ha)=   16.900
| ID=01:West        |   QPEAK      (cms)=    .092 (i)
| DT= 1.00 PCYC=-1  |   TPEAK      (hrs)=   2.750
---------------------   VOLUME       (mm)=  17.900
  Filename: West.0001
  Comments: West

     (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------------------------------------------------------------------
R0001:C00042-----------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to East---------------|
----------------------
| ADD HYD             |
| 02:East             |   ID:NHYD           AREA     QPEAK    TPEAK      R.V.     DWF
----------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                       ID 1 04:2104          10.900      .137    2.417     9.826    .000
                      +ID 2 05:2105          21.500      .098    4.417     7.930    .000
                      +ID 3 08:E.Storage      1.700      .100    1.783    36.286    .000
                      +ID 4 09:E.Spill         .000      .000     .000      .000    .000  **DRY**
                      ==========================================================
                      SUM   02:East          34.100      .231    2.250     9.950    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
R0001:C00043-----------------------------------------------------------------------
----------------------
| SAVE HYD          |   AREA       (ha)=   34.100
| ID=02:East        |   QPEAK      (cms)=    .231 (i)
| DT= 1.00 PCYC=-1  |   TPEAK      (hrs)=   2.250
---------------------   VOLUME       (mm)=   9.950
  Filename: East.0001
  Comments: East

     (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------------------------------------------------------------------
R0001:C00044-----------------------------------------------------------------------
*#*****************************************************************************
*#******************POST-DEVELOPMENT CONTROLLED - 25 YEAR Event ******************
*#*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             Chicago Rainfall Distribution
*
*#*****************************************************************************
----------------------
| CHICAGO STORM     |   IDF curve parameters: A=1706.133
| Ptotal= 64.48 mm  |                         B=  10.500
----------------------                         C=    .844
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =  .33

                     The CORRELATION coefficient is = .9997648

                      TIME        ENTERED             COMPUTED
                     (min)        (mm/hr)              (mm/hr)
                       5.          175.00               168.80
                      10.          130.00               133.32
                      15.          110.00               110.89
                      30.           73.00                75.04
                      60.           49.00                47.00
                     120.           27.00                27.95
                     360.           12.00                11.59
                     720.            6.60                 6.53
                    1440.            3.60                 3.66

       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
       0:05  3.323|   0:45  7.407|  1:25  89.112|  2:05  11.424|  2:45  5.817|  3:25  3.923
       0:10  3.563|   0:50  8.788|  1:30  52.616|  2:10  10.201|  2:50  5.483|  3:30  3.772
       0:15  3.842|   0:55 10.796|  1:35  36.148|  2:15   9.210|  2:55  5.185|  3:35  3.633
       0:20  4.171|   1:00 13.953|  1:40  27.083|  2:20   8.393|  3:00  4.919|  3:40  3.504
       0:25  4.565|   1:05 19.537|  1:45  21.457|  2:25   7.709|  3:05  4.680|  3:45  3.384
       0:30  5.045|   1:10 31.576|  1:50  17.674|  2:30   7.128|  3:10  4.464|  3:50  3.273
       0:35  5.641|   1:15 70.822|  1:55  14.978|  2:35   6.629|  3:15  4.267|  3:55  3.169
       0:40  6.403|   1:20 168.800|  2:00  12.970|  2:40   6.196|  3:20  4.088|  4:00  3.071
--------------------------------------------------------------------------------
R0001:C00045-----------------------------------------------------------------------
*#-----------------|----------Area 2101 (West Developed Area)---------------|
----------------------
| CALIB STANDHYD      |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
---------------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=        5.00         5.00
     Dep. Storage      (mm)=        2.00         5.00
     Average Slope      (%)=         .50         2.00
     Length             (m)=      100.00        35.00
     Mannings n              =      .013         .150

     Max.eff.Inten.(mm/hr)=      168.80        45.11
                   over (min)        3.00         9.00
     Storage Coeff.  (min)=        2.55 (ii)    9.14 (ii)
     Unit Hyd. Tpeak (min)=        3.00         9.00
     Unit Hyd. peak  (cms)=         .42          .12

                                                *TOTALS*
     PEAK FLOW         (cms)=       1.22          .41          1.393 (iii)
     TIME TO PEAK      (hrs)=       1.35         1.52          1.350
     RUNOFF VOLUME      (mm)=      62.48        17.22         30.799
     TOTAL RAINFALL     (mm)=      64.48        64.48         64.483
     RUNOFF COEFFICIENT    =        .97          .27           .478

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.
--------------------------------------------------------------------------------
R0001:C00046-----------------------------------------------------------------------
*#-----------------|----------Area 2102 (Silver Creek Buffer)--------------|
----------------------
| CALIB NASHYD        |   Area     (ha)=    6.900   Curve Number    (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
---------------------------  U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=     .258

     PEAK FLOW         (cms)=     .086 (i)
     TIME TO PEAK      (hrs)=    2.750
     DURATION          (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
     AVERAGE FLOW      (cms)=     .020
     RUNOFF VOLUME      (mm)=   11.795
     TOTAL RAINFALL     (mm)=   64.483
     RUNOFF COEFFICIENT    =     .183

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------------------------------------------------------------------
R0001:C00047-----------------------------------------------------------------------
*#-----------------|----------Area 2103 (East Developed Area)--------------|
----------------------
| CALIB STANDHYD      |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
---------------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=        1.10          .60
     Dep. Storage      (mm)=        2.00         5.00
     Average Slope      (%)=         .50         2.00
     Length             (m)=      295.00        35.00
     Mannings n              =      .013         .150

     Max.eff.Inten.(mm/hr)=      168.80       118.79
                   over (min)        5.00         9.00
     Storage Coeff.  (min)=        4.88 (ii)    9.36 (ii)
     Unit Hyd. Tpeak (min)=        5.00         9.00
     Unit Hyd. peak  (cms)=         .23          .12

                                                *TOTALS*
     PEAK FLOW         (cms)=       .23          .13           .319 (iii)
     TIME TO PEAK      (hrs)=      1.38         1.50          1.417
     RUNOFF VOLUME      (mm)=     62.48        33.36         45.009
     TOTAL RAINFALL     (mm)=     64.48        64.48         64.483
     RUNOFF COEFFICIENT    =       .97          .52           .698

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.
--------------------------------------------------------------------------------
R0001:C00048-----------------------------------------------------------------------
*#-----------------|----------Area 2104 (East Natural Area)-------------|
----------------------
| CALIB NASHYD        |   Area     (ha)=   10.900   Curve Number    (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
---------------------------  U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=     .563

     PEAK FLOW         (cms)=     .201 (i)
     TIME TO PEAK      (hrs)=    2.333
     DURATION          (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
     AVERAGE FLOW      (cms)=     .047
     RUNOFF VOLUME      (mm)=   14.082
     TOTAL RAINFALL     (mm)=   64.483
     RUNOFF COEFFICIENT    =     .218

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------------------------------------------------------------------
R0001:C00049-----------------------------------------------------------------------
*#-----------------|----------Area 2105 (Central Natural Area)-------------|
----------------------
| CALIB NASHYD        |   Area     (ha)=   21.500   Curve Number    (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
---------------------------  U.H. Tp(hrs)=    2.350

     Unit Hyd Qpeak  (cms)=     .349

     PEAK FLOW         (cms)=     .141 (i)
     TIME TO PEAK      (hrs)=    4.417
     DURATION          (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
     AVERAGE FLOW      (cms)=     .034
     RUNOFF VOLUME      (mm)=   11.397
     TOTAL RAINFALL     (mm)=   64.483
     RUNOFF COEFFICIENT    =     .177

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------------------------------------------------------------------
R0001:C00050-----------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
----------------------
| ADD HYD             |
| 06:UC-West          |   ID:NHYD           AREA     QPEAK    TPEAK      R.V.     DWF
----------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                       ID 1 01:2101          10.000     1.393    1.350    30.799    .000
                      +ID 2 02:2102           6.900      .086    2.750    11.795    .000
                      ==========================================================
                      SUM   06:UC-West       16.900     1.396    1.350    23.040    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
R0001:C00051-----------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
----------------------
| ADD HYD             |
| 07:UC-East          |   ID:NHYD           AREA     QPEAK    TPEAK      R.V.     DWF
----------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
                       ID 1 03:2103           1.700      .319    1.417    45.009    .000
                      +ID 2 04:2104          10.900      .201    2.333    14.082    .000
                      +ID 3 05:2105          21.500      .141    4.417    11.397    .000
                      ==========================================================
                      SUM   07:UC-East       34.100      .340    1.433    13.931    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
R0001:C00052-----------------------------------------------------------------------
*#-----------------|--------------------Route West Pond----------------------|
----------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|   IN>01:2101        |
| OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                         .000 .0000E+00|  .030 .1670E+00|  .038 .3010E+00|  .603 .4620E+00
                         .018 .6100E-01|  .034 .2300E+00|  .042 .3780E+00|  3.086 .6010E+00
                         .025 .1110E+00|  .038 .3010E+00|  .603 .4620E+00|  .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     ----------------------      (ha)     (cms)     (hrs)       (mm)
      INFLOW > 01:2101          10.000     1.393     1.350     30.799
    OUTFLOW < 06:W.Pond         10.000      .036     4.067     30.798
   OVERFLOW < 07:W.Spill          .000      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.609
                    TIME SHIFT OF PEAK FLOW          (min)=  163.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.2717E+00
--------------------------------------------------------------------------------
R0001:C00053-----------------------------------------------------------------------
```

```
*#-----------------|--------------------Route East Storage----------------------|
-----------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>03:2103         |
| OUT<08:E.Storage    | ========================  OUTFLOW STORAGE TABLE  ========================
----------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                           .000 .0000E+00|    .008 .1900E-01|    .099 .2930E-01|    .166 .3600E-01
                           .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     ---------------------      (ha)     (cms)     (hrs)       (mm)
     INFLOW > 03:2103          1.700      .319     1.417     45.009
    OUTFLOW < 08:E.Storage     1.700      .133     1.750     45.008
   OVERFLOW < 09:E.Spill        .000      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   41.707
                    TIME SHIFT OF PEAK FLOW         (min)=    20.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3435E-01

-------------------------------------------------------------------------------------------------
R0001:C00054-----------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
-----------------------
| ADD HYD          |
| 01:West          |   ID:NHYD           AREA     QPEAK    TPEAK     R.V.     DWF
-----------------------                      (ha)     (cms)    (hrs)     (mm)   (cms)
                      ID 1 02:2102         6.900      .086    2.750   11.795    .000
                     +ID 2 06:W.Pond      10.000      .036    4.067   30.798    .000
                     +ID 3 07:W.Spill       .000      .000     .000     .000    .000  **DRY**
                      ==========================================================
                      SUM   01:West       16.900      .121    2.750   23.039    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------------------------
R0001:C00055-----------------------------------------------------------------------------------
-----------------------
| SAVE HYD         |   AREA       (ha)=   16.900
| ID=01:West       |   QPEAK     (cms)=    .121 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   2.750
-------------------   VOLUME      (mm)=  23.039
  Filename: West.0001
  Comments: West

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

-------------------------------------------------------------------------------------------------
R0001:C00056-----------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to East---------------|
-----------------------
| ADD HYD          |
| 02:East          |   ID:NHYD           AREA     QPEAK    TPEAK     R.V.     DWF
-----------------------                      (ha)     (cms)    (hrs)     (mm)   (cms)
                      ID 1 04:2104        10.900      .201    2.333   14.082    .000
                     +ID 2 05:2105        21.500      .141    4.417   11.397    .000
                     +ID 3 08:E.Storage    1.700      .133    1.750   45.008    .000
                     +ID 4 09:E.Spill        .000      .000     .000     .000    .000  **DRY**
                      ==========================================================
                      SUM   02:East       34.100      .330    2.250   13.931    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------------------------
R0001:C00057-----------------------------------------------------------------------------------
--------------------
| SAVE HYD         |   AREA       (ha)=   34.100
| ID=02:East       |   QPEAK     (cms)=    .330 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   2.250
--------------------   VOLUME      (mm)=  13.931
  Filename: East.0001
  Comments: East

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

-------------------------------------------------------------------------------------------------
R0001:C00058-----------------------------------------------------------------------------------
*#################################################################################
*#################POST-DEVELOPMENT CONTROLLED - 50 YEAR Event ****************
*#################################################################################
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#              Chicago Rainfall Distribution
* 
*#################################################################################
--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1924.754
| Ptotal= 71.55 mm |                          B=  10.500
--------------------                          C=   .847
                          used in:   INTENSITY =  A / (t + B)^C

                          Duration of storm  =  4.00 hrs
                          Storm time step    =  5.00 min
                          Time to peak ratio =  .33

                       The CORRELATION coefficient is = .9997656

                        TIME        ENTERED              COMPUTED
                       (min)        (mm/hr)              (mm/hr)
                          5.         195.00               188.87
                         10.         145.00               149.05
                         15.         125.00               123.89
                         30.          81.00                83.73
                         60.          55.00                52.36
                        120.          30.00                31.08
                        360.          13.00                12.84
                        720.           7.40                 7.23
                       1440.           4.00                 4.04

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:05   3.634|   0:45   8.143|   1:25  99.441|   2:05  12.597|   2:45   6.385|   3:25   4.295
      0:10   3.898|   0:50   9.673|   1:30  58.562|   2:10  11.239|   2:50   6.015|   3:30   4.128
      0:15   4.205|   0:55  11.899|   1:35  40.150|   2:15  10.140|   2:55   5.687|   3:35   3.975
      0:20   4.568|   1:00  15.406|   1:40  30.030|   2:20   9.235|   3:00   5.393|   3:40   3.833
      0:25   5.002|   1:05  21.620|   1:45  23.758|   2:25   8.477|   3:05   5.129|   3:45   3.701
      0:30   5.531|   1:10  35.046|   1:50  19.545|   2:30   7.834|   3:10   4.890|   3:50   3.578
      0:35   6.190|   1:15  78.954|   1:55  16.545|   2:35   7.282|   3:15   4.673|   3:55   3.464
      0:40   7.032|   1:20 188.871|   2:00  14.314|   2:40   6.804|   3:20   4.476|   4:00   3.357

-------------------------------------------------------------------------------------------------
R0001:C00059-----------------------------------------------------------------------------------
*#-----------------|----------Area 2101 (West Developed Area)----------------|
-----------------------
| CALIB STANDHYD   |   Area    (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
-------------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       5.00         5.00
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     100.00        35.00
     Mannings n             =      .013         .150

     Max.eff.Inten.(mm/hr)=     188.87        56.14
                 over (min)        2.00         8.00
     Storage Coeff.  (min)=       2.44 (ii)    8.48 (ii)
     Unit Hyd. Tpeak (min)=       2.00         8.00
     Unit Hyd. peak  (cms)=        .49          .14

                                                *TOTALS*
     PEAK FLOW       (cms)=       1.41          .52         1.623 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.50         1.333
     RUNOFF VOLUME    (mm)=      69.55        20.77        35.402
     TOTAL RAINFALL   (mm)=      71.55        71.55        71.550
     RUNOFF COEFFICIENT   =        .97          .29          .495

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

-------------------------------------------------------------------------------------------------
R0001:C00060-----------------------------------------------------------------------------------
*#-----------------|----------Area 2102 (Silver Creek Buffer)--------------|
-----------------------
| CALIB NASHYD     |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=      .258

     PEAK FLOW       (cms)=      .106 (i)
     TIME TO PEAK    (hrs)=    2.667
     DURATION        (hrs)=   11.083, (dddd|hh:mm:)=   0|11:05
     AVERAGE FLOW    (cms)=      .025
     RUNOFF VOLUME    (mm)=   14.486
     TOTAL RAINFALL   (mm)=   71.550
     RUNOFF COEFFICIENT   =      .202

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

-------------------------------------------------------------------------------------------------
R0001:C00061-----------------------------------------------------------------------------------
*#-----------------|----------Area 2103 (East Developed Area)---------------|
-----------------------
| CALIB STANDHYD   |   Area    (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
-------------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.10          .60
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=        .50         2.00
     Length            (m)=     295.00        35.00
     Mannings n             =      .013         .150

     Max.eff.Inten.(mm/hr)=     188.87       141.56
                 over (min)        5.00         9.00
     Storage Coeff.  (min)=       4.67 (ii)    8.84 (ii)
     Unit Hyd. Tpeak (min)=       5.00         9.00
     Unit Hyd. peak  (cms)=        .24          .13

                                                *TOTALS*
     PEAK FLOW       (cms)=        .26          .15          .371 (iii)
     TIME TO PEAK    (hrs)=       1.38         1.48         1.417
     RUNOFF VOLUME    (mm)=      69.55        39.03        51.238
     TOTAL RAINFALL   (mm)=      71.55        71.55        71.550
     RUNOFF COEFFICIENT   =        .97          .55          .716

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.

-------------------------------------------------------------------------------------------------
R0001:C00062-----------------------------------------------------------------------------------
*#-----------------|----------Area 2104 (East Natural Area)-------------|
-----------------------
| CALIB NASHYD     |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=      .563

     PEAK FLOW       (cms)=      .251 (i)
     TIME TO PEAK    (hrs)=    2.333
     DURATION        (hrs)=    9.167, (dddd|hh:mm:)=   0|09:10
     AVERAGE FLOW    (cms)=      .057
     RUNOFF VOLUME    (mm)=   17.374
     TOTAL RAINFALL   (mm)=   71.550
     RUNOFF COEFFICIENT   =      .243

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

-------------------------------------------------------------------------------------------------
R0001:C00063-----------------------------------------------------------------------------------
*#-----------------|----------Area 2105 (Central Natural Area)------------|
-----------------------
| CALIB NASHYD     |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    2.350

     Unit Hyd Qpeak  (cms)=      .349

     PEAK FLOW       (cms)=      .174 (i)
     TIME TO PEAK    (hrs)=    4.417
     DURATION        (hrs)=   19.750, (dddd|hh:mm:)=   0|19:45
     AVERAGE FLOW    (cms)=      .043
     RUNOFF VOLUME    (mm)=   14.103
     TOTAL RAINFALL   (mm)=   71.550
     RUNOFF COEFFICIENT   =      .197

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

-------------------------------------------------------------------------------------------------
R0001:C00064-----------------------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
-----------------------
| ADD HYD          |
| 06:UC-West       |   ID:NHYD           AREA     QPEAK    TPEAK     R.V.     DWF
-----------------------                      (ha)     (cms)    (hrs)     (mm)   (cms)
                      ID 1 01:2101        10.000     1.623    1.333   35.402    .000
                     +ID 2 02:2102         6.900      .106    2.667   14.486    .000
                      ==========================================================
                      SUM   06:UC-West    16.900     1.625    1.333   26.862    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------------------------
R0001:C00065-----------------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
-----------------------
| ADD HYD          |
| 07:UC-East       |   ID:NHYD           AREA     QPEAK    TPEAK     R.V.     DWF
-----------------------                      (ha)     (cms)    (hrs)     (mm)   (cms)
                      ID 1 03:2103         1.700      .371    1.417   51.238    .000
                     +ID 2 04:2104        10.900      .251    2.333   17.374    .000
                     +ID 3 05:2105        21.500      .174    4.417   14.103    .000
                      ==========================================================
                      SUM   07:UC-East    34.100      .399    1.450   17.000    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------------------------
R0001:C00066-----------------------------------------------------------------------------------
*#-----------------|--------------------Route West Pond----------------------|
-----------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:2101         |
| OUT<06:W.Pond       | ========================  OUTFLOW STORAGE TABLE  ========================
----------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                           .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
                           .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
                           .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     ---------------------      (ha)     (cms)     (hrs)       (mm)
     INFLOW > 01:2101          10.000     1.623     1.333     35.402
    OUTFLOW < 06:W.Pond        10.000      .039     4.067     35.401
   OVERFLOW < 07:W.Spill         .000      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.388
                    TIME SHIFT OF PEAK FLOW         (min)=   164.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3153E+00

-------------------------------------------------------------------------------------------------
R0001:C00067-----------------------------------------------------------------------------------
*#-----------------|--------------------Route East Storage----------------------|
-----------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>03:2103         |
```

```
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .008 .1900E-01|   .099 .2930E-01|   .166 .3600E-01
                        .006 .8500E-02|   .099 .2930E-01|   .144 .3600E-01|   .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     -----------------------     (ha)     (cms)     (hrs)       (mm)
   INFLOW > 03:2103           1.700      .371     1.417     51.238
  OUTFLOW < 08:E.Storage      1.669      .166     1.600     51.248
  OVERFLOW < 09:E.Spill        .031      .082     1.600     51.238

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       2
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=     .12
                    PERCENTAGE OF TIME OVERFLOWING    (%)=     .17

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   44.771
                    TIME SHIFT OF PEAK FLOW          (min)=   11.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3601E-01

*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
| ADD HYD          |
| 01:West          |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 02:2102          6.900      .106    2.667    14.486    .000
                     +ID 2 06:W.Pond       10.000      .039    4.067    35.401    .000
                     +ID 3 07:W.Spill        .000      .000     .000      .000    .000  **DRY**
                     ==========================================================
                     SUM   01:West         16.900      .144    2.750    26.862    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|----Post Development Controlled Flow to East--------------|
| ADD HYD          |
| 02:East          |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 04:2104         10.900      .251    2.333    17.374    .000
                     +ID 2 05:2105         21.500      .174    4.417    14.103    .000
                     +ID 3 08:E.Storage     1.669      .166    1.600    51.248    .000
                     +ID 4 09:E.Spill        .031      .082    1.600    51.238    .000
                     ==========================================================
                     SUM   02:East         34.100      .404    2.250    17.000    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|----Post Development Controlled Flow to Silver Creek-----|
| ADD HYD          |
| 06:UC-West       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 01:2101          10.000    1.838    1.333    40.968    .000
                     +ID 2 02:2102           6.900      .131    2.667    17.890    .000
                     ==========================================================
                     SUM   06:UC-West       16.900    1.841    1.333    31.546    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
| ADD HYD          |
| 07:UC-East       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 03:2103          1.700      .428    1.417    58.630    .000
                     +ID 2 04:2104         10.900      .311    2.333    21.514    .000
                     +ID 3 05:2105         21.500      .217    4.417    17.534    .000
                     ==========================================================
                     SUM   07:UC-East      34.100      .463    1.433    20.855    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|-----------------Route West Pond-----------------------|
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:2101         |
| OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .030 .1670E+00|   .038 .3010E+00|   .603 .4620E+00
                        .018 .6100E-01|   .034 .2300E+00|   .042 .3780E+00|  3.086 .6010E+00
                        .025 .1110E+00|   .038 .3010E+00|   .603 .4620E+00|   .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     -----------------------     (ha)     (cms)     (hrs)       (mm)
   INFLOW > 01:2101           10.000    1.838     1.333     40.968
  OUTFLOW < 06:W.Pond         10.000      .041    4.083     40.968
  OVERFLOW < 07:W.Spill         .000      .000     .000      .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=     .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=     .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.257
                    TIME SHIFT OF PEAK FLOW          (min)=  165.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3681E+00

*#-----------------|-----------------Route East Storage--------------------|
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>03:2103         |
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .008 .1900E-01|   .099 .2930E-01|   .166 .3600E-01

*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
| ADD HYD          |
| 01:West          |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 02:2102          6.900      .106    2.667    14.486    .000
                     +ID 2 06:W.Pond       10.000      .039    4.067    35.401    .000
                     +ID 3 07:W.Spill        .000      .000     .000      .000    .000  **DRY**
                     ==========================================================
                     SUM   01:West         16.900      .144    2.750    26.862    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|----Post Development Controlled Flow to East--------------|
| ADD HYD          |
| 02:East          |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 04:2104         10.900      .251    2.333    17.374    .000
                     +ID 2 05:2105         21.500      .174    4.417    14.103    .000
                     +ID 3 08:E.Storage     1.669      .166    1.600    51.248    .000
                     +ID 4 09:E.Spill        .031      .082    1.600    51.238    .000
                     ==========================================================
                     SUM   02:East         34.100      .404    2.250    17.000    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
| ADD HYD          |
| 06:UC-West       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 01:2101          10.000    1.838    1.333    40.968    .000
                     +ID 2 02:2102           6.900      .131    2.667    17.890    .000
                     ==========================================================
                     SUM   06:UC-West       16.900    1.841    1.333    31.546    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
| ADD HYD          |
| 07:UC-East       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 03:2103          1.700      .428    1.417    58.630    .000
                     +ID 2 04:2104         10.900      .311    2.333    21.514    .000
                     +ID 3 05:2105         21.500      .217    4.417    17.534    .000
                     ==========================================================
                     SUM   07:UC-East      34.100      .463    1.433    20.855    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|-----------------Route West Pond-----------------------|
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:2101         |
| OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .030 .1670E+00|   .038 .3010E+00|   .603 .4620E+00
                        .018 .6100E-01|   .034 .2300E+00|   .042 .3780E+00|  3.086 .6010E+00
                        .025 .1110E+00|   .038 .3010E+00|   .603 .4620E+00|   .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     -----------------------     (ha)     (cms)     (hrs)       (mm)
   INFLOW > 01:2101           10.000    1.838     1.333     40.968
  OUTFLOW < 06:W.Pond         10.000      .041    4.083     40.968
  OVERFLOW < 07:W.Spill         .000      .000     .000      .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=     .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=     .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.257
                    TIME SHIFT OF PEAK FLOW          (min)=  165.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3681E+00

*#-----------------|-----------------Route East Storage--------------------|
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>03:2103         |
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .008 .1900E-01|   .099 .2930E-01|   .166 .3600E-01

*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
| ADD HYD          |
| 01:West          |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 02:2102          6.900      .106    2.667    14.486    .000
                     +ID 2 06:W.Pond       10.000      .039    4.067    35.401    .000
                     +ID 3 07:W.Spill        .000      .000     .000      .000    .000  **DRY**
                     ==========================================================
                     SUM   01:West         16.900      .144    2.750    26.862    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|----Post Development Controlled Flow to East--------------|
| ADD HYD          |
| 02:East          |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 04:2104         10.900      .251    2.333    17.374    .000
                     +ID 2 05:2105         21.500      .174    4.417    14.103    .000
                     +ID 3 08:E.Storage     1.669      .166    1.600    51.248    .000
                     +ID 4 09:E.Spill        .031      .082    1.600    51.238    .000
                     ==========================================================
                     SUM   02:East         34.100      .404    2.250    17.000    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
| ADD HYD          |
| 06:UC-West       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 01:2101          10.000    1.838    1.333    40.968    .000
                     +ID 2 02:2102           6.900      .131    2.667    17.890    .000
                     ==========================================================
                     SUM   06:UC-West       16.900    1.841    1.333    31.546    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
| ADD HYD          |
| 07:UC-East       |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                      ID 1 03:2103          1.700      .428    1.417    58.630    .000
                     +ID 2 04:2104         10.900      .311    2.333    21.514    .000
                     +ID 3 05:2105         21.500      .217    4.417    17.534    .000
                     ==========================================================
                     SUM   07:UC-East      34.100      .463    1.433    20.855    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

*#-----------------|-----------------Route West Pond-----------------------|
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:2101         |
| OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .030 .1670E+00|   .038 .3010E+00|   .603 .4620E+00
                        .018 .6100E-01|   .034 .2300E+00|   .042 .3780E+00|  3.086 .6010E+00
                        .025 .1110E+00|   .038 .3010E+00|   .603 .4620E+00|   .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     -----------------------     (ha)     (cms)     (hrs)       (mm)
   INFLOW > 01:2101           10.000    1.838     1.333     40.968
  OUTFLOW < 06:W.Pond         10.000      .041    4.083     40.968
  OVERFLOW < 07:W.Spill         .000      .000     .000      .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=     .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=     .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.257
                    TIME SHIFT OF PEAK FLOW          (min)=  165.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3681E+00

*#-----------------|-----------------Route East Storage--------------------|
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>03:2103         |
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                        .000 .0000E+00|   .008 .1900E-01|   .099 .2930E-01|   .166 .3600E-01
```

```
                          .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00

    ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
    -----------------------     (ha)     (cms)     (hrs)       (mm)
     INFLOW > 03:2103          1.700      .428     1.417     58.630
   OUTFLOW < 08:E.Storage      1.578      .166     1.517     58.629
  OVERFLOW < 09:E.Spill         .122      .189     1.517     58.630

                  TOTAL NUMBER OF SIMULATED OVERFLOWS  =       2
                  CUMULATIVE TIME OF OVERFLOWS  (hours)=      .23
                  PERCENTAGE OF TIME OVERFLOWING    (%)=      .33


                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=   38.822
                  TIME SHIFT OF PEAK FLOW         (min)=     6.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=.3602E-01

--------------------------------------------------------------------------------------------------
R0001:C00082------------------------------------------------------------------------------------------
*#----------------|----Post Development Controlled Flow to Silver Creek-------|
------------------------
| ADD HYD              |
| 01:West              |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
------------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                       ID 1 02:2102           6.900      .131    2.667    17.890    .000
                      +ID 2 06:W.Pond        10.000      .041    4.083    40.968    .000
                      +ID 3 07:W.Spill          .000      .000     .000      .000    .000  **DRY**
                      ======================================================================
                      SUM   01:West          16.900      .171    2.750    31.545    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------------
R0001:C00083------------------------------------------------------------------------------------------
--------------------
| SAVE HYD         |   AREA       (ha)=   16.900
| ID=01:West       |   QPEAK     (cms)=     .171 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=    2.750
--------------------   VOLUME      (mm)=   31.545
  Filename: West.0001
  Comments: West

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

--------------------------------------------------------------------------------------------------
R0001:C00084------------------------------------------------------------------------------------------
*#----------------|----Post Development Controlled Flow to East---------------|
------------------------
| ADD HYD              |
| 02:East              |    ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
------------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                       ID 1 04:2104          10.900      .311    2.333    21.514    .000
                      +ID 2 05:2105          21.500      .217    4.417    17.534    .000
                      +ID 3 08:E.Storage      1.578      .166    1.517    58.629    .000
                      +ID 4 09:E.Spill         .122      .189    1.517    58.630    .000
                      ======================================================================
                      SUM   02:East          34.100      .486    2.333    20.854    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------------
R0001:C00085------------------------------------------------------------------------------------------
--------------------
| SAVE HYD         |   AREA       (ha)=   34.100
| ID=02:East       |   QPEAK     (cms)=     .486 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=    2.333
--------------------   VOLUME      (mm)=   20.854
  Filename: East.0001
  Comments: East

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

--------------------------------------------------------------------------------------------------
R0001:C00086------------------------------------------------------------------------------------------
--------------------
| FINISH           |
--------------------
--------------------------------------------------------------------------------------------------
**************************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
   Simulation ended on 2019-07-25     at 22:59:53
==================================================================================================
```

```
2     Metric units
*****************************************************************************
*  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
*  Date        : 01-17-2011
*  Updated     : 07-25-2019
*  Modeller    : [J.Proctor/R.Alexander]
*  Company     : C.F. Crozier & Associates Inc.
*  License #   :  3737016
*****************************************************************************
*# J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\ALL_SCS.dat
*****************************************************************************
START                 TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
*%                     [  ] <--storm filename, one per line for NSTORM time
*%--------------------|-------------------------------------------------------|
*****************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 2 YEAR Event *****************
*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             SCS Rainfall Distribution
*
*****************************************************************************
*%--------------------|-------------------------------------------------------|
MASS STORM            PTOTAL=[50.4](mm), CSDT=[5](min),
                      CURVE_FILENAME=["SCS24HII.MST"]
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2101 (West Developed Area)-------------|
*%--------------------|-------------------------------------------------------|
CALIB STANDHYD        ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
                      SCS curve number CN=[54],
                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2102 (Silver Creek Buffer)--------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
                      N=[3], TP=[1.02]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2103 (East Developed Area)--------------|
*%--------------------|-------------------------------------------------------|
CALIB STANDHYD        ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
                      SCS curve number CN=[74],
                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2104 (East Natural Area)---------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
                      N=[3], TP=[0.74]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|-----------Area 2105 (Central Natural Area)-------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
                      N=[3], TP=[2.35]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|----Post Development Uncontrolled Flow to Silver Creek----|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
*%--------------------|-------------------------------------------------------|
*#--------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
*%--------------------|-------------------------------------------------------|
*#--------------------|-------------------Route West Pond---------------------|
*%--------------------|-------------------------------------------------------|
ROUTE RESERVOIR       IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
                      RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                (cms) - (ha-m)
                              [   0.0 ,  0.0  ]
                              [   0.018, 0.061]
                              [   0.025, 0.111]
                              [   0.030, 0.167]
                              [   0.034, 0.230]
                              [   0.038, 0.301]
                              [   0.042, 0.378]
                              [   0.603, 0.462]
                              [   3.086, 0.601]
                              [   -1  ,  -1  ]  (max twenty pts)
                            IDovf=[7], NHYDovf=["W.Spill"]
*%--------------------|-------------------------------------------------------|
*#--------------------|-------------------Route East Storage------------------|
*%--------------------|-------------------------------------------------------|
ROUTE RESERVOIR       IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
                      RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                (cms) - (ha-m)
                              [ 0.000, 0.0000]
                              [ 0.006, 0.0085]
                              [ 0.008, 0.0190]
                              [ 0.099, 0.0293]
                              [ 0.144, 0.0360]
                              [ 0.166, 0.0360]
                              [   -1  ,  -1  ]  (max twenty pts)
                            IDovf=[9], NHYDovf=["E.Spill"]
*%--------------------|-------------------------------------------------------|
*#--------------------|----Post Development Controlled Flow to Silver Creek-------|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
*%--------------------|-------------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["West"]
*%--------------------|-------------------------------------------------------|
*#--------------------|----Post Development Controlled Flow to East--------------|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
*%--------------------|-------------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["East"]
*%--------------------|-------------------------------------------------------|
*****************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 5 YEAR Event *****************
*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             SCS Rainfall Distribution
*
*****************************************************************************
*%--------------------|-------------------------------------------------------|
MASS STORM            PTOTAL=[64.8](mm), CSDT=[5](min),
                      CURVE_FILENAME=["SCS24HII.MST"]
*%--------------------|-------------------------------------------------------|
*#--------------------|-----------Area 2101 (West Developed Area)---------------|
*%--------------------|-------------------------------------------------------|
CALIB STANDHYD        ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
                      SCS curve number CN=[54],
                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2102 (Silver Creek Buffer)--------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
                      N=[3], TP=[1.02]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2103 (East Developed Area)--------------|
*%--------------------|-------------------------------------------------------|
CALIB STANDHYD        ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
                      SCS curve number CN=[74],
                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2104 (East Natural Area)---------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
                      N=[3], TP=[0.74]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|-----------Area 2105 (Central Natural Area)-------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
                      N=[3], TP=[2.35]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
*%--------------------|-------------------------------------------------------|
*#--------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
*%--------------------|-------------------------------------------------------|
*#--------------------|-------------------Route West Pond---------------------|
*%--------------------|-------------------------------------------------------|
ROUTE RESERVOIR       IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
                      RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                (cms) - (ha-m)
                              [   0.0 ,  0.0  ]
                              [   0.018, 0.061]
                              [   0.025, 0.111]
                              [   0.030, 0.167]
                              [   0.034, 0.230]
                              [   0.038, 0.301]
                              [   0.042, 0.378]
                              [   0.603, 0.462]
                              [   3.086, 0.601]
                              [   -1  ,  -1  ]  (max twenty pts)
                            IDovf=[7], NHYDovf=["W.Spill"]
*%--------------------|-------------------------------------------------------|
*#--------------------|-------------------Route East Storage------------------|
*%--------------------|-------------------------------------------------------|
ROUTE RESERVOIR       IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
                      RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                (cms) - (ha-m)
                              [ 0.000, 0.0000]
                              [ 0.006, 0.0085]
                              [ 0.008, 0.0190]
                              [ 0.099, 0.0293]
                              [ 0.144, 0.0360]
                              [ 0.166, 0.0360]
                              [   -1  ,  -1  ]  (max twenty pts)
                            IDovf=[9], NHYDovf=["E.Spill"]
*%--------------------|-------------------------------------------------------|
*#--------------------|----Post Development Controlled Flow to Silver Creek-------|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
*%--------------------|-------------------------------------------------------|
SAVE HYD              ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["West"]
*%--------------------|-------------------------------------------------------|
*#--------------------|----Post Development Controlled Flow to East--------------|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
*%--------------------|-------------------------------------------------------|
SAVE HYD              ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["East"]
*%--------------------|-------------------------------------------------------|
*****************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 10 YEAR Event *****************
*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             SCS Rainfall Distribution
*
*****************************************************************************
*%--------------------|-------------------------------------------------------|
MASS STORM            PTOTAL=[74.4](mm), CSDT=[5](min),
                      CURVE_FILENAME=["SCS24HII.MST"]
*%--------------------|-------------------------------------------------------|
*#--------------------|-----------Area 2101 (West Developed Area)---------------|
*%--------------------|-------------------------------------------------------|
CALIB STANDHYD        ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
                      XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
                      SCS curve number CN=[54],
                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                           LGI=[100](m), MNI=[0.013], SCI=[0](min),
                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2102 (Silver Creek Buffer)--------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
                      DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
                      N=[3], TP=[1.02]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2103 (East Developed Area)--------------|
*%--------------------|-------------------------------------------------------|
CALIB STANDHYD        ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
                      XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
                      SCS curve number CN=[74],
                      Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                           LGP=[35](m), MNP=[0.15], SCP=[0](min),
                      Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                           LGI=[295](m), MNI=[0.013], SCI=[0](min),
                      RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|------------Area 2104 (East Natural Area)---------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
                      DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
                      N=[3], TP=[0.74]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|-----------Area 2105 (Central Natural Area)-------------|
*%--------------------|-------------------------------------------------------|
CALIB NASHYD          ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
                      DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
                      N=[3], TP=[2.35]hrs,
                      RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%--------------------|-------------------------------------------------------|
*#--------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
*%--------------------|-------------------------------------------------------|
*#--------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
*%--------------------|-------------------------------------------------------|
ADD HYD               IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
*%--------------------|-------------------------------------------------------|
*#--------------------|-------------------Route West Pond---------------------|
*%--------------------|-------------------------------------------------------|
ROUTE RESERVOIR       IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
                      RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                (cms) - (ha-m)
                              [   0.0 ,  0.0  ]
                              [   0.018, 0.061]
                              [   0.025, 0.111]
                              [   0.030, 0.167]
                              [   0.034, 0.230]
```

```
                                    [   0.038, 0.301]
                                    [   0.042, 0.378]
                                    [   0.603, 0.462]
                                    [   3.086, 0.601]
                                    [   -1  ,  -1   ]  (max twenty pts)
                          IDovf=[7], NHYDovf=["W.Spill"]
*%------------------|---------------------------------------------------------|
*#------------------|--------------------Route East Storage--------------------|
*%------------------|---------------------------------------------------------|
ROUTE RESERVOIR     IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                  [ 0.000, 0.0000]
                                  [ 0.006, 0.0085]
                                  [ 0.008, 0.0190]
                                  [ 0.099, 0.0293]
                                  [ 0.144, 0.0360]
                                  [ 0.166, 0.0360]
                                  [   -1  ,  -1   ]  (max twenty pts)
                          IDovf=[9], NHYDovf=["E.Spill"]
*%------------------|---------------------------------------------------------|
*#------------------|----Post Development Controlled Flow to Silver Creek-------|
*%------------------|---------------------------------------------------------|
ADD HYD             IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
*%------------------|---------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["West"]
*%------------------|---------------------------------------------------------|
*#------------------|----Post Development Controlled Flow to East---------------|
*%------------------|---------------------------------------------------------|
ADD HYD             IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
*%------------------|---------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["East"]
*%------------------|---------------------------------------------------------|
*#*****************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 25 YEAR Event *****************
*#*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             SCS Rainfall Distribution
*
*#*****************************************************************************
*%------------------|---------------------------------------------------------|
MASS STORM          PTOTAL=[86.4](mm), CSDT=[5](min),
                    CURVE_FILENAME=["SCS24HII.MST"]
*%------------------|---------------------------------------------------------|
*#------------------|-----------Area 2101 (West Developed Area)----------------|
*%------------------|---------------------------------------------------------|
CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
                    XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
                    SCS curve number CN=[54],
                    Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.15], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-------------Area 2102 (Silver Creek Buffer)--------------|
*%------------------|---------------------------------------------------------|
CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
                    DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
                    N=[3], TP=[1.02]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-----------Area 2103 (East Developed Area)----------------|
*%------------------|---------------------------------------------------------|
CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
                    XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.15], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                         LGI=[295](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-------------Area 2104 (East Natural Area)-------------|
*%------------------|---------------------------------------------------------|
CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
                    DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
                    N=[3], TP=[0.74]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-----------Area 2105 (Central Natural Area)-------------|
*%------------------|---------------------------------------------------------|
CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
                    DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
                    N=[3], TP=[2.35]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
*%------------------|---------------------------------------------------------|
ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
*%------------------|---------------------------------------------------------|
*#------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
*%------------------|---------------------------------------------------------|
ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
*%------------------|---------------------------------------------------------|
*#------------------|--------------------Route West Pond--------------------|
*%------------------|---------------------------------------------------------|
ROUTE RESERVOIR     IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                  [   0.0 ,  0.0  ]
                                  [   0.018, 0.061]
                                  [   0.025, 0.111]
                                  [   0.030, 0.167]
                                  [   0.034, 0.230]
                                  [   0.038, 0.301]
                                  [   0.042, 0.378]
                                  [   0.603, 0.462]
                                  [   3.086, 0.601]
                                  [   -1  ,  -1   ]  (max twenty pts)
                          IDovf=[7], NHYDovf=["W.Spill"]
*%------------------|---------------------------------------------------------|
*#------------------|-------------------Route East Storage--------------------|
*%------------------|---------------------------------------------------------|
ROUTE RESERVOIR     IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                  [ 0.000, 0.0000]
                                  [ 0.006, 0.0085]
                                  [ 0.008, 0.0190]
                                  [ 0.099, 0.0293]
                                  [ 0.144, 0.0360]
                                  [ 0.166, 0.0360]
                                  [   -1  ,  -1   ]  (max twenty pts)
                          IDovf=[9], NHYDovf=["E.Spill"]
*%------------------|---------------------------------------------------------|
*#------------------|----Post Development Controlled Flow to Silver Creek-------|
*%------------------|---------------------------------------------------------|
ADD HYD             IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
*%------------------|---------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["West"]
*%------------------|---------------------------------------------------------|
*#------------------|----Post Development Controlled Flow to East---------------|
*%------------------|---------------------------------------------------------|
ADD HYD             IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
*%------------------|---------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["East"]
*%------------------|---------------------------------------------------------|
*#*****************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 50 YEAR Event *****************
*#*****************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             SCS Rainfall Distribution
*
*#*****************************************************************************
*%------------------|---------------------------------------------------------|
MASS STORM          PTOTAL=[96.0](mm), CSDT=[5](min),
                    CURVE_FILENAME=["SCS24HII.MST"]
*%------------------|---------------------------------------------------------|
*#------------------|-----------Area 2101 (West Developed Area)----------------|
*%------------------|---------------------------------------------------------|
CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
                    XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
                    SCS curve number CN=[54],
                    Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.15], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                         LGI=[100](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-------------Area 2102 (Silver Creek Buffer)--------------|
*%------------------|---------------------------------------------------------|
CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
                    DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
                    N=[3], TP=[1.02]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-----------Area 2103 (East Developed Area)----------------|
*%------------------|---------------------------------------------------------|
CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
                    XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
                                         LGP=[35](m), MNP=[0.15], SCP=[0](min),
                    Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
                                         LGI=[295](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-------------Area 2104 (East Natural Area)-------------|
*%------------------|---------------------------------------------------------|
CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
                    DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
                    N=[3], TP=[0.74]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%------------------|---------------------------------------------------------|
*#------------------|-----------Area 2105 (Central Natural Area)-------------|
*%------------------|---------------------------------------------------------|
CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
                    DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
```

```
00617>                    N=[3], TP=[2.35]hrs,
00618>                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00619> *%-----------------|---------------------------------------------------------------|
00620> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00621> *%-----------------|---------------------------------------------------------------|
00622> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00623> *%-----------------|---------------------------------------------------------------|
00624> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00625> *%-----------------|---------------------------------------------------------------|
00626> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00627> *%-----------------|---------------------------------------------------------------|
00628> *#-----------------|-------------------Route West Pond-----------------------|
00629> *%-----------------|---------------------------------------------------------------|
00630> ROUTE RESERVOIR     IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00631>                    RDT=[1](min),
00632>                          TABLE of ( OUTFLOW-STORAGE ) values
00633>                                     (cms) - (ha-m)
00634>                                   [   0.0 ,  0.0  ]
00635>                                   [   0.018, 0.061]
00636>                                   [   0.025, 0.111]
00637>                                   [   0.030, 0.167]
00638>                                   [   0.034, 0.230]
00639>                                   [   0.038, 0.301]
00640>                                   [   0.042, 0.378]
00641>                                   [   0.603, 0.462]
00642>                                   [   3.086, 0.601]
00643>                                   [   -1  ,  -1  ]  (max twenty pts)
00644>                          IDovf=[7], NHYDovf=["W.Spill"]
00645> *%-----------------|---------------------------------------------------------------|
00646> *#-----------------|-------------------Route East Storage--------------------|
00647> *%-----------------|---------------------------------------------------------------|
00648> ROUTE RESERVOIR     IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00649>                    RDT=[1](min),
00650>                          TABLE of ( OUTFLOW-STORAGE ) values
00651>                                     (cms) - (ha-m)
00652>                                   [ 0.000, 0.0000]
00653>                                   [ 0.006, 0.0085]
00654>                                   [ 0.008, 0.0190]
00655>                                   [ 0.099, 0.0293]
00656>                                   [ 0.144, 0.0360]
00657>                                   [ 0.166, 0.0360]
00658>                                   [   -1  ,  -1  ]  (max twenty pts)
00659>                          IDovf=[9], NHYDovf=["E.Spill"]
00660> *%-----------------|---------------------------------------------------------------|
00661> *#-----------------|----Post Development Controlled Flow to Silver Creek-------|
00662> *%-----------------|---------------------------------------------------------------|
00663> ADD HYD             IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00664> *%-----------------|---------------------------------------------------------------|
00665> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00666>                    HYD_COMMENT=["West"]
00667> *%-----------------|---------------------------------------------------------------|
00668> *#-----------------|----Post Development Controlled Flow to East--------------|
00669> *%-----------------|---------------------------------------------------------------|
00670> ADD HYD             IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00671> *%-----------------|---------------------------------------------------------------|
00672> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00673>                    HYD_COMMENT=["East"]
00674> *%-----------------|---------------------------------------------------------------|
00675> FINISH
```

```
 ================================================================================
 
 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
 S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2   2   0  0  1 1      7  ========
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2   2   0  0  1 1      7  Ver4.05.0
     S   W W W   M   M   H   H     Y     M   M   O   O        222   0  0  1 1      7  APR 2017
 SSSSS   W W W   M   M   H   H     Y     M   M    OOO         2     0  0  1 1      7  =========
                                                              2     0  0  1 1      7  # 3737016
       StormWater Management HYdrologic Model                 222    000    11   7    =========

 ********************************************************************************
 ***************************  SWMHYMO Ver4.05.0  ********************************
 ******************  A single event and continuous hydrologic simulation model  *****
 ******************     based on the principles of HYMO and its successors      *****
 ******************                 OTTHYMO-83 and OTTHYMO-89.                  *****
 ********************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *****
 ******************                  Ottawa, Ontario: (613) 836-3884            *****
 ******************                  Gatineau, Quebec: (819) 243-6858           *****
 ******************                  E-Mail: swmhymo@jfsa.com                   *****
 ********************************************************************************

 ********************************************************************************
 ****************** Licensed user: C.F. Crozier & Associates Inc.          *******
 ******************                 Collingwood          SERIAL#:3737016     *******
 ********************************************************************************

 ********************************************************************************
 ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++       *****
 ******************          Maximum value for ID numbers  :   11              *****
 ******************          Max. number of rainfall points: 105408            *****
 ******************          Max. number of flow points    : 105408            *****
 ********************************************************************************

 ****************************   S U M M A R Y   O U T P U T   ***********************
 ********************************************************************************
 *                  RUN DATE: 2019-07-25     TIME: 23:01:24     RUN COUNTER: 000009      *
 ********************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\ALL_SCS.dat                                         *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\ALL_SCS.out                                         *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\ALL_SCS.sum                                         *
 * User comments:                                                               *
 * 1:                                                                           *
 * 2:                                                                           *
 * 3:                                                                           *
 ********************************************************************************


#************************************************************************
#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
#  Date        : 01-17-2011
#  Updated     : 07-25-2019
#  Modeller    : [J.Proctor/R.Alexander]
#  Company     : C.F. Crozier & Associates Inc.
#  License #   :  3737016
#************************************************************************
# J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\ALL_SCS.dat
#************************************************************************
 RUN#:COMMAND#
R0001:C00001-------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on       0]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0001 ]
#************************************************************************
#*****************POST-DEVELOPMENT CONTROLLED - 2 YEAR Event *****************
#************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#            SCS Rainfall Distribution
#************************************************************************
R0001:C00002-------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=   50.40]
#----------------|----------Area 2101 (West Developed Area)----------------|
R0001:C00003-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB STANDHYD         1.0 01:2101          10.00     .579 No_date   12:12   22.14 .439     .000
       [XIMP=.30:TIMP=.50]
       [LOSS= 2 :CN= 54.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
#----------------|----------Area 2102 (Silver Creek Buffer)---------------|
R0001:C00004-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 02:2102           6.90     .036 No_date   13:11    7.11 .141     .000
       [CN= 52.8: N= 3.00: Tp= 1.02]
#----------------|------------Area 2103 (East Developed Area)-------------|
R0001:C00005-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB STANDHYD         1.0 03:2103          1.70     .133 No_date   12:15   32.95 .654     .000
       [XIMP=.40:TIMP=.65]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
#----------------|-------------Area 2104 (East Natural Area)-------------|
R0001:C00006-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 04:2104          10.90     .082 No_date   12:54    8.32 .165     .000
       [CN= 61.6: N= 3.00: Tp=  .74]
#----------------|----------Area 2105 (Central Natural Area)-------------|
R0001:C00007-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 05:2105          21.50     .055 No_date   15:00    6.72 .133     .000
       [CN= 53.9: N= 3.00: Tp= 2.35]
#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
R0001:C00008-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 01:2101          10.00     .579 No_date   12:12   22.14  n/a     .000
                      +     6.0 02:2102           6.90     .036 No_date   13:11    7.11  n/a     .000
                    SUM=    1.0 06:UC-West       16.90     .587 No_date   12:12   16.01  n/a     .000
#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
R0001:C00009-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 03:2103          1.70     .133 No_date   12:15   32.95  n/a     .000
                      +     6.0 04:2104          10.90     .082 No_date   12:54    8.32  n/a     .000
                      +     6.0 05:2105          21.50     .055 No_date   15:00    6.72  n/a     .000
                    SUM=    1.0 07:UC-East       34.10     .170 No_date   12:17    8.54  n/a     .000
#----------------|-------------------Route West Pond--------------------|
R0001:C00010-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->     1.0 01:2101          10.00     .579 No_date   12:12   22.14  n/a     .000
                      out <=    1.0 06:W.Pond        10.00     .027 No_date   14:26   22.14  n/a     .000
            overflow <=     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1380E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#----------------|-------------------Route East Storage--------------------|
R0001:C00011-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->     1.0 03:2103          1.70     .133 No_date   12:15   32.95  n/a     .000
                      out <=    1.0 08:E.Storage      1.70     .050 No_date   12:36   32.95  n/a     .000
            overflow <=     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2376E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#----------------|----Post Development Controlled Flow to East--------------|
R0001:C00012-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 02:2102          6.90     .036 No_date   13:11    7.11  n/a     .000
                      +     1.0 06:W.Pond        10.00     .027 No_date   14:26   22.14  n/a     .000
                      +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                    SUM=    1.0 01:West          16.90     .063 No_date   13:18   16.01  n/a     .000
R0001:C00013-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     SAVE HYD               1.0 01:West          16.90     .063 No_date   13:18   16.01  n/a     .000
       fname :West.0001
       remark:West
#----------------|----Post Development Controlled Flow to East--------------|
R0001:C00014-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 04:2104          10.90     .082 No_date   12:54    8.32  n/a     .000
                      +     1.0 05:2105          21.50     .055 No_date   15:00    6.72  n/a     .000
                      +     1.0 08:E.Storage      1.70     .050 No_date   12:36   32.95  n/a     .000
                      +     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                    SUM=    1.0 02:East          34.10     .142 No_date   12:48    8.54  n/a     .000
R0001:C00015-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     SAVE HYD               1.0 02:East          34.10     .142 No_date   12:48    8.54  n/a     .000
       fname :East.0001
       remark:East
#************************************************************************
#*****************POST-DEVELOPMENT CONTROLLED - 5 YEAR Event *****************
#************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#            SCS Rainfall Distribution
#************************************************************************
R0001:C00016-------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  64.80]
#----------------|----------Area 2101 (West Developed Area)----------------|
R0001:C00017-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB STANDHYD         1.0 01:2101          10.00     .835 No_date   12:12   31.00 .478     .000
       [XIMP=.30:TIMP=.50]
       [LOSS= 2 :CN= 54.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
#----------------|----------Area 2102 (Silver Creek Buffer)---------------|
R0001:C00018-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 02:2102           6.90     .061 No_date   13:11   11.91 .184     .000
       [CN= 52.8: N= 3.00: Tp= 1.02]
#----------------|------------Area 2103 (East Developed Area)-------------|
R0001:C00019-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB STANDHYD         1.0 03:2103          1.70     .193 No_date   12:15   45.29 .699     .000
       [XIMP=.40:TIMP=.65]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
#----------------|-------------Area 2104 (East Natural Area)-------------|
R0001:C00020-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 04:2104          10.90     .146 No_date   12:54   14.22 .220     .000
       [CN= 61.6: N= 3.00: Tp=  .74]
#----------------|----------Area 2105 (Central Natural Area)-------------|
R0001:C00021-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 05:2105          21.50     .097 No_date   14:54   11.51 .178     .000
       [CN= 53.9: N= 3.00: Tp= 2.35]
#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
R0001:C00022-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 01:2101          10.00     .835 No_date   12:12   31.00  n/a     .000
                      +     6.0 02:2102           6.90     .061 No_date   13:11   11.91  n/a     .000
                    SUM=    1.0 06:UC-West       16.90     .849 No_date   12:12   23.21  n/a     .000
#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
R0001:C00023-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 03:2103          1.70     .193 No_date   12:15   45.29  n/a     .000
                      +     6.0 04:2104          10.90     .146 No_date   12:54   14.22  n/a     .000
                      +     6.0 05:2105          21.50     .097 No_date   14:54   11.51  n/a     .000
                    SUM=    1.0 07:UC-East       34.10     .262 No_date   12:16   14.06  n/a     .000
#----------------|-------------------Route West Pond--------------------|
R0001:C00024-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->     1.0 01:2101          10.00     .835 No_date   12:12   31.00  n/a     .000
                      out <=    1.0 06:W.Pond        10.00     .032 No_date   15:15   31.00  n/a     .000
            overflow <=     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1987E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#----------------|-------------------Route East Storage--------------------|
R0001:C00025-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->     1.0 03:2103          1.70     .193 No_date   12:15   45.29  n/a     .000
                      out <=    1.0 08:E.Storage      1.70     .096 No_date   12:28   45.29  n/a     .000
            overflow <=     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2894E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#----------------|----Post Development Controlled Flow to Silver Creek-------|
R0001:C00026-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 02:2102          6.90     .061 No_date   13:11   11.91  n/a     .000
                      +     1.0 06:W.Pond        10.00     .032 No_date   15:15   31.00  n/a     .000
                      +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                    SUM=    1.0 01:West          16.90     .092 No_date   13:12   23.21  n/a     .000
R0001:C00027-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     SAVE HYD               1.0 01:West          16.90     .092 No_date   13:12   23.21  n/a     .000
       fname :West.0001
       remark:West
#----------------|----Post Development Controlled Flow to East--------------|
R0001:C00028-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 04:2104          10.90     .146 No_date   12:54   14.22  n/a     .000
                      +     1.0 05:2105          21.50     .097 No_date   14:54   11.51  n/a     .000
                      +     1.0 08:E.Storage      1.70     .096 No_date   12:28   45.29  n/a     .000
                      +     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                    SUM=    1.0 02:East          34.10     .247 No_date   12:48   14.06  n/a     .000
R0001:C00029-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     SAVE HYD               1.0 02:East          34.10     .247 No_date   12:48   14.06  n/a     .000
       fname :East.0001
       remark:East
#************************************************************************
#****************POST-DEVELOPMENT CONTROLLED - 10 YEAR Event ****************
#************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#            SCS Rainfall Distribution
#************************************************************************
R0001:C00030-------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  74.40]
#----------------|----------Area 2101 (West Developed Area)----------------|
R0001:C00031-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB STANDHYD         1.0 01:2101          10.00    1.028 No_date   12:12   37.30 .501     .000
       [XIMP=.30:TIMP=.50]
       [LOSS= 2 :CN= 54.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
#----------------|----------Area 2102 (Silver Creek Buffer)---------------|
R0001:C00032-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 02:2102           6.90     .081 No_date   13:11   15.63 .210     .000
       [CN= 52.8: N= 3.00: Tp= 1.02]
#----------------|------------Area 2103 (East Developed Area)-------------|
R0001:C00033-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB STANDHYD         1.0 03:2103          1.70     .236 No_date   12:14   53.78 .723     .000
       [XIMP=.40:TIMP=.65]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
#----------------|-------------Area 2104 (East Natural Area)-------------|
R0001:C00034-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 04:2104          10.90     .196 No_date   12:54   18.77 .252     .000
       [CN= 61.6: N= 3.00: Tp=  .74]
#----------------|----------Area 2105 (Central Natural Area)-------------|
R0001:C00035-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     CALIB NASHYD           6.0 05:2105          21.50     .129 No_date   14:54   15.26 .205     .000
       [CN= 53.9: N= 3.00: Tp= 2.35]
#----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
R0001:C00036-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 01:2101          10.00    1.028 No_date   12:12   37.30  n/a     .000
                      +     6.0 02:2102           6.90     .081 No_date   13:11   15.63  n/a     .000
                    SUM=    1.0 06:UC-West       16.90    1.048 No_date   12:12   28.45  n/a     .000
#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
R0001:C00037-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 03:2103          1.70     .236 No_date   12:14   53.78  n/a     .000
                      +     6.0 04:2104          10.90     .196 No_date   12:54   18.77  n/a     .000
                      +     6.0 05:2105          21.50     .129 No_date   14:54   15.26  n/a     .000
                    SUM=    1.0 07:UC-East       34.10     .329 No_date   12:16   18.30  n/a     .000
#----------------|-------------------Route West Pond--------------------|
R0001:C00038-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->     1.0 01:2101          10.00    1.028 No_date   12:12   37.30  n/a     .000
                      out <=    1.0 06:W.Pond        10.00     .035 No_date   15:24   37.30  n/a     .000
            overflow <=     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2435E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#----------------|-------------------Route East Storage--------------------|
R0001:C00039-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->     1.0 03:2103          1.70     .236 No_date   12:14   53.78  n/a     .000
                      out <=    1.0 08:E.Storage      1.70     .122 No_date   12:26   53.78  n/a     .000
            overflow <=     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.3270E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#----------------|----Post Development Controlled Flow to Silver Creek-------|
R0001:C00040-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 02:2102          6.90     .081 No_date   13:11   15.63  n/a     .000
                      +     1.0 06:W.Pond        10.00     .035 No_date   15:24   37.30  n/a     .000
                      +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                    SUM=    1.0 01:West          16.90     .114 No_date   13:12   28.45  n/a     .000
R0001:C00041-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     SAVE HYD               1.0 01:West          16.90     .114 No_date   13:12   28.45  n/a     .000
       fname :West.0001
       remark:West
#----------------|----Post Development Controlled Flow to East--------------|
R0001:C00042-----------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm---RVmm-R.C.---DWFcms
     ADD HYD                1.0 04:2104          10.90     .196 No_date   12:54   18.77  n/a     .000
                      +     1.0 05:2105          21.50     .129 No_date   14:54   15.26  n/a     .000
                      +     1.0 08:E.Storage      1.70     .122 No_date   12:26   53.78  n/a     .000
                      +     1.0 09:E.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                    SUM=    1.0 02:East          34.10     .327 No_date   12:43   18.30  n/a     .000
```

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R0001:C00043------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 02:East          34.10     .327 No_date   12:43   18.30  n/a     .000
       fname :East.0001
       remark:East
#*************************************************************************
#****************POST-DEVELOPMENT CONTROLLED - 25 YEAR Event ****************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#             SCS Rainfall Distribution
#*************************************************************************
R0001:C00044------------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  86.40]
#-----------------|-----------Area 2101 (West Developed Area)----------------|
R0001:C00045------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB STANDHYD        1.0 01:2101          10.00    1.285 No_date   12:12   45.55 .527     .000
       [XIMP=.30:TIMP=.50]
       [LOSS= 2 :CN= 54.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
R0001:C00046------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:2102           6.90     .108 No_date   13:11   20.80 .241     .000
       [CN= 52.8: N= 3.00: Tp= 1.02]
#-----------------|-----------Area 2103 (East Developed Area)---------------|
R0001:C00047------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB STANDHYD        1.0 03:2103          1.70     .287 No_date   12:14   64.61 .748     .000
       [XIMP=.40:TIMP=.65]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
#-----------------|-----------Area 2104 (East Natural Area)-------------|
R0001:C00048------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 04:2104          10.90     .264 No_date   12:54   25.03 .290     .000
       [CN= 61.6: N= 3.00: Tp=  .74]
#-----------------|-----------Area 2105 (Central Natural Area)------------|
R0001:C00049------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 05:2105          21.50     .175 No_date   14:54   20.47 .237     .000
       [CN= 53.9: N= 3.00: Tp= 2.35]
#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
R0001:C00050------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 01:2101          10.00    1.285 No_date   12:12   45.55  n/a     .000
                       +     6.0 02:2102           6.90     .108 No_date   13:11   20.80  n/a     .000
                     SUM=    1.0 06:UC-West       16.90    1.313 No_date   12:12   35.44  n/a     .000
#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
R0001:C00051------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 03:2103          1.70     .287 No_date   12:14   64.61  n/a     .000
                       +     6.0 04:2104          10.90     .264 No_date   12:54   25.03  n/a     .000
                       +     6.0 05:2105          21.50     .175 No_date   14:54   20.47  n/a     .000
                     SUM=    1.0 07:UC-East       34.10     .419 No_date   12:16   24.13  n/a     .000
#-----------------|-------------------Route West Pond--------------------|
R0001:C00052------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 01:2101          10.00    1.285 No_date   12:12   45.55  n/a     .000
                     out <=    1.0 06:W.Pond        10.00     .038 No_date   17:02   45.55  n/a     .000
               overflow <=     1.0 07:W.Spill        .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.3600E-01  m3, TotOvfVol=.1065E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
#-----------------|-------------------Route East Storage-------------------|
R0001:C00053------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 03:2103          1.70     .287 No_date   12:14   64.61  n/a     .000
                     out <=    1.0 08:E.Storage      1.68     .166 No_date   12:20   64.61  n/a     .000
               overflow <=     1.0 09:E.Spill         .02     .063 No_date   12:20   64.61  n/a     .000
      {MxStoUsed=.3600E-01  m3, TotOvfVol=.1065E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
#-----------------|----Post Development Controlled Flow to Silver Creek-------|
R0001:C00054------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:2102          6.90     .108 No_date   13:11   20.80  n/a     .000
                       +     1.0 06:W.Pond        10.00     .038 No_date   17:02   45.55  n/a     .000
                       +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                     SUM=    1.0 01:West          16.90     .145 No_date   13:12   35.44  n/a     .000
R0001:C00055------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:West          16.90     .145 No_date   13:12   35.44  n/a     .000
       fname :West.0001
       remark:West
#-----------------|----Post Development Controlled Flow to East---------------|
R0001:C00056------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 04:2104          10.90     .264 No_date   12:54   25.03  n/a     .000
                       +     1.0 05:2105          21.50     .175 No_date   14:54   20.47  n/a     .000
                       +     1.0 08:E.Storage      1.68     .166 No_date   12:20   64.61  n/a     .000
                       +     1.0 09:E.Spill         .02     .063 No_date   12:20   64.61  n/a     .000
                     SUM=    1.0 02:East          34.10     .433 No_date   12:48   24.13  n/a     .000
R0001:C00057------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 02:East          34.10     .433 No_date   12:48   24.13  n/a     .000
       fname :East.0001
       remark:East
#*************************************************************************
#****************POST-DEVELOPMENT CONTROLLED - 50 YEAR Event ****************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#             SCS Rainfall Distribution
#*************************************************************************
R0001:C00058------------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT=  96.00]
#-----------------|-----------Area 2101 (West Developed Area)---------------|
R0001:C00059------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB STANDHYD        1.0 01:2101          10.00    1.490 No_date   12:12   52.41 .546     .000
       [XIMP=.30:TIMP=.50]
       [LOSS= 2 :CN= 54.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
R0001:C00060------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:2102           6.90     .132 No_date   13:11   25.30 .264     .000
       [CN= 52.8: N= 3.00: Tp= 1.02]
#-----------------|-----------Area 2103 (East Developed Area)---------------|
R0001:C00061------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB STANDHYD        1.0 03:2103          1.70     .334 No_date   12:14   73.42 .765     .000
       [XIMP=.40:TIMP=.65]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
#-----------------|-----------Area 2104 (East Natural Area)-------------|
R0001:C00062------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 04:2104          10.90     .324 No_date   12:54   30.44 .317     .000
       [CN= 61.6: N= 3.00: Tp=  .74]
#-----------------|-----------Area 2105 (Central Natural Area)------------|
R0001:C00063------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 05:2105          21.50     .215 No_date   14:48   25.03 .261     .000
       [CN= 53.9: N= 3.00: Tp= 2.35]
#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
R0001:C00064------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 01:2101          10.00    1.490 No_date   12:12   52.41  n/a     .000
                       +     6.0 02:2102           6.90     .132 No_date   13:11   25.30  n/a     .000
                     SUM=    1.0 06:UC-West       16.90    1.525 No_date   12:12   41.34  n/a     .000
#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
R0001:C00065------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 03:2103          1.70     .334 No_date   12:14   73.42  n/a     .000
                       +     6.0 04:2104          10.90     .324 No_date   12:54   30.44  n/a     .000
                       +     6.0 05:2105          21.50     .215 No_date   14:48   25.03  n/a     .000
                     SUM=    1.0 07:UC-East       34.10     .499 No_date   12:16   29.17  n/a     .000
#-----------------|-------------------Route West Pond--------------------|
R0001:C00066------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 01:2101          10.00    1.490 No_date   12:12   52.41  n/a     .000
                     out <=    1.0 06:W.Pond        10.00     .041 No_date   17:04   52.41  n/a     .000
               overflow <=     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.3562E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#-----------------|-------------------Route East Storage-------------------|
R0001:C00067------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 03:2103          1.70     .334 No_date   12:14   73.42  n/a     .000
                     out <=    1.0 08:E.Storage      1.62     .166 No_date   12:15   73.42  n/a     .000
               overflow <=     1.0 09:E.Spill         .08     .166 No_date   12:15   73.42  n/a     .000
      {MxStoUsed=.3601E-01  m3, TotOvfVol=.5795E-02  m3, N-Ovf=    2, TotDurOvf=    0.hrs}
#-----------------|----Post Development Controlled Flow to Silver Creek-------|
R0001:C00068------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:2102          6.90     .132 No_date   13:11   25.30  n/a     .000
                       +     1.0 06:W.Pond        10.00     .041 No_date   17:04   52.41  n/a     .000
                       +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                     SUM=    1.0 01:West          16.90     .172 No_date   13:12   41.34  n/a     .000
R0001:C00069------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:West          16.90     .172 No_date   13:12   41.34  n/a     .000
       fname :West.0001
       remark:West
#-----------------|----Post Development Controlled Flow to East---------------|
R0001:C00070------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 04:2104          10.90     .324 No_date   12:54   30.44  n/a     .000
                       +     1.0 05:2105          21.50     .215 No_date   14:48   25.03  n/a     .000
                       +     1.0 08:E.Storage      1.62     .166 No_date   12:15   73.42  n/a     .000
                       +     1.0 09:E.Spill         .08     .166 No_date   12:15   73.42  n/a     .000
                     SUM=    1.0 02:East          34.10     .513 No_date   12:48   29.17  n/a     .000
R0001:C00071------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 02:East          34.10     .513 No_date   12:48   29.17  n/a     .000
       fname :East.0001
       remark:East
#*************************************************************************
#****************POST-DEVELOPMENT CONTROLLED - 100 YEAR Event ****************
#*************************************************************************
#   Rainfall Depths per MTO - Basins East of Collingwood
#             SCS Rainfall Distribution
#*************************************************************************
R0001:C00072------------------------------------------------------------------------------------------
     MASS STORM
       Filename = J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Updat
       Comment  = 24 hour SCS II storm mass curve
       [SDT= 6.00:SDUR=  24.00:PTOT= 105.60]
#-----------------|-----------Area 2101 (West Developed Area)---------------|
R0001:C00073------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB STANDHYD        1.0 01:2101          10.00    1.730 No_date   12:12   59.48 .563     .000
       [XIMP=.30:TIMP=.50]
       [LOSS= 2 :CN= 54.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
R0001:C00074------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 02:2102           6.90     .158 No_date   13:11   30.11 .285     .000
       [CN= 52.8: N= 3.00: Tp= 1.02]
#-----------------|-----------Area 2103 (East Developed Area)---------------|
R0001:C00075------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB STANDHYD        1.0 03:2103          1.70     .378 No_date   12:14   82.32 .780     .000
       [XIMP=.40:TIMP=.65]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
       [Impervious   area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
#-----------------|-----------Area 2104 (East Natural Area)-------------|
R0001:C00076------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 04:2104          10.90     .387 No_date   12:54   36.17 .343     .000
       [CN= 61.6: N= 3.00: Tp=  .74]
#-----------------|-----------Area 2105 (Central Natural Area)------------|
R0001:C00077------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CALIB NASHYD          6.0 05:2105          21.50     .259 No_date   14:48   29.89 .283     .000
       [CN= 53.9: N= 3.00: Tp= 2.35]
#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
R0001:C00078------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 01:2101          10.00    1.730 No_date   12:12   59.48  n/a     .000
                       +     6.0 02:2102           6.90     .158 No_date   13:11   30.11  n/a     .000
                     SUM=    1.0 06:UC-West       16.90    1.773 No_date   12:12   47.49  n/a     .000
#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
R0001:C00079------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 03:2103          1.70     .378 No_date   12:14   82.32  n/a     .000
                       +     6.0 04:2104          10.90     .387 No_date   12:54   36.17  n/a     .000
                       +     6.0 05:2105          21.50     .259 No_date   14:48   29.89  n/a     .000
                     SUM=    1.0 07:UC-East       34.10     .580 No_date   12:16   34.51  n/a     .000
#-----------------|-------------------Route West Pond--------------------|
R0001:C00080------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 01:2101          10.00    1.730 No_date   12:12   59.48  n/a     .000
                     out <=    1.0 06:W.Pond        10.00     .094 No_date   14:15   59.48  n/a     .000
               overflow <=     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.3857E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#-----------------|-------------------Route East Storage-------------------|
R0001:C00081------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 03:2103          1.70     .378 No_date   12:14   82.32  n/a     .000
                     out <=    1.0 08:E.Storage      1.56     .166 No_date   12:12   82.34  n/a     .000
               overflow <=     1.0 09:E.Spill         .14     .211 No_date   12:14   82.32  n/a     .000
      {MxStoUsed=.3600E-01  m3, TotOvfVol=.1131E-01  m3, N-Ovf=    2, TotDurOvf=    0.hrs}
#-----------------|----Post Development Controlled Flow to Silver Creek-------|
R0001:C00082------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:2102          6.90     .158 No_date   13:11   30.11  n/a     .000
                       +     1.0 06:W.Pond        10.00     .094 No_date   14:15   59.48  n/a     .000
                       +     1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a     .000
                     SUM=    1.0 01:West          16.90     .211 No_date   13:48   47.49  n/a     .000
R0001:C00083------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:West          16.90     .211 No_date   13:48   47.49  n/a     .000
       fname :West.0001
       remark:West
#-----------------|----Post Development Controlled Flow to East---------------|
R0001:C00084------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 04:2104          10.90     .387 No_date   12:54   36.17  n/a     .000
                       +     1.0 05:2105          21.50     .259 No_date   14:48   29.89  n/a     .000
                       +     1.0 08:E.Storage      1.56     .166 No_date   12:12   82.34  n/a     .000
                       +     1.0 09:E.Spill         .14     .211 No_date   12:14   82.32  n/a     .000
                     SUM=    1.0 02:East          34.10     .601 No_date   12:54   34.51  n/a     .000
R0001:C00085------------DTmin-ID:NHYD--------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 02:East          34.10     .601 No_date   12:54   34.51  n/a     .000
       fname :East.0001
       remark:East
R0001:C00086------------------------------------------------------------------------------------------
     FINISH
 ----------------------------------------------------------------------------------------------------
**********************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
   Simulation ended on 2019-07-25     at 23:01:25
====================================================================================================
```

```
00001> ================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M     OOO          222     000    11   77777 ========
00004> S       W W W   MM MM   H   H   Y Y     MM MM    O   O          2     0   0   11     7   ========
00005> SSSSS   W W W   M M M   HHHHH     Y     M M M    O   O          2     0   0   11    7    ========
00006>     S   W W     M   M   H   H     Y     M   M    O   O        222     0   0   11   7     APR 2017
00007> SSSSS   W W     M   M   H   H     Y     M   M     OOO         2       0   0   11   7     ========
00008>                                                                2       0   0   11   7     # 3737016
00009>       StormWater Management HYdrologic Model                   222     000    11   7     ========
00010>
00011> ************************************************************************************************
00012> ************************************  SWMHYMO Ver4.05.0  ***********************************
00013> ******************  A single event and continuous hydrologic simulation model  *****************
00014> ******************     based on the principles of HYMO and its successors      *****************
00015> ******************                 OTTHYMO-83 and OTTHYMO-89.                  *****************
00016> ************************************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *****************
00018> ******************                 Ottawa,  Ontario: (613) 836-3884            *****************
00019> ******************                 Gatineau, Quebec: (819) 243-6858            *****************
00020> ******************                 E-Mail: swmhymo@jfsa.com                    *****************
00021> ************************************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ************************************************************************************************
00029> ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          *****************
00030> ******************                Maximum value for ID numbers  :    11          *****************
00031> ******************                Max. number of rainfall points: 105408         *****************
00032> ******************                Max. number of flow points    : 105408         *****************
00033> ************************************************************************************************
00034>
00035> ================================================================================
00036> ************************************  SWMHYMO Ver4.05.0  ***********************************
00037> ******************  A single event and continuous hydrologic simulation model  *****************
00038> ******************     based on the principles of HYMO and its successors      *****************
00039> ******************                 OTTHYMO-83 and OTTHYMO-89.                  *****************
00040> ************************************************************************************************
00041> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *****************
00042> ******************                 Ottawa,  Ontario: (613) 836-3884            *****************
00043> ******************                 Gatineau, Quebec: (819) 243-6858            *****************
00044> ******************                 E-Mail: swmhymo@jfsa.com                    *****************
00045> ************************************************************************************************
00046>
00047> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00048> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.      ++++++++++++++++++++
00049> ++++++++++++++++++                 Collingwood          SERIAL#:3737016        ++++++++++++++++++++
00050> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00051>
00052> ************************************************************************************************
00053> ******************                ++++++ PROGRAM ARRAY DIMENSIONS ++++++          *****************
00054> ******************                Maximum value for ID numbers  :    11          *****************
00055> ******************                Max. number of rainfall points: 105408         *****************
00056> ******************                Max. number of flow points    : 105408         *****************
00057> ************************************************************************************************
00058>
00059>
00060> ****************************  D E T A I L E D   O U T P U T  ****************************
00061> ************************************************************************************************
00062> *            RUN DATE: 2019-07-25       TIME: 23:01:24     RUN COUNTER: 000009              *
00063> ************************************************************************************************
00064> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00065> *               HYMO\Post\ALL_SCS.dat                                                          *
00066> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00067> *               HYMO\Post\ALL_SCS.out                                                          *
00068> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00069> *               HYMO\Post\ALL_SCS.sum                                                          *
00070> * User comments:                                                                             *
00071> * 1:_____________________________________________________________________________________*
00072> * 2:_____________________________________________________________________________________*
00073> * 3:_____________________________________________________________________________________*
00074> ************************************************************************************************
00075>
00076> --------------------------------------------------------------------------------
00077> R0001:C00001------------------------------------------------------------------------------
00078> *#*************************************************************************
00079> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00080> *#  Date        : 01-17-2011
00081> *#  Updated     : 07-25-2019
00082> *#  Modeller    : [J.Proctor/R.Alexander]
00083> *#  Company     : C.F. Crozier & Associates Inc.
00084> *#  License #   :  3737016
00085> *#*************************************************************************
00086> *# J:\200\281...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\ALL_SCS.dat
00087> *#*************************************************************************
00088> --------------------
00089> | START            | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00090> -------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00091>     TZERO =   .00 hrs on       0
00092>     METOUT=   2 (output = METRIC)
00093>     NRUN  = 0001
00094>     NSTORM=   0
00095> --------------------------------------------------------------------------------
00096> R0001:C00002------------------------------------------------------------------------------
00097> *#*************************************************************************
00098> *#******************POST-DEVELOPMENT CONTROLLED - 2 YEAR Event ******************
00099> *#*************************************************************************
00100> *
00101> *#   Rainfall Depths per MTO - Basins East of Collingwood
00102> *#              SCS Rainfall Distribution
00103> *
00104> *#*************************************************************************
00105> --------------------
00106> | MASS STORM       |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
00107> | Ptotal= 50.40 mm |    Comments: 24 hour SCS II storm mass curve
00108> --------------------

00109>                          Duration of storm        =   24.00 hrs
00110>                          Mass curve time step     =   12.00 min
00111>                          Selected storm time step =    6.00 min
00112>                          Volume of derived storm  =   50.40 mm
00113>
00114>      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00115>     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00116>      0:06    .000|   4:06    .504|   8:06   1.008|  12:06  56.700|  16:06   1.260|  20:06   1.008
00117>      0:12    .000|   4:12    .504|   8:12   1.008|  12:12  56.700|  16:12   1.260|  20:12   1.008
00118>      0:18    .504|   4:18   1.008|   8:18   1.512|  12:18  10.080|  16:18   1.260|  20:18    .756
00119>      0:24    .504|   4:24   1.008|   8:24   1.512|  12:24  10.080|  16:24   1.260|  20:24    .756
00120>      0:30    .504|   4:30   1.008|   8:30   1.512|  12:30   6.300|  16:30   1.260|  20:30    .756
00121>      0:36    .504|   4:36   1.008|   8:36   1.512|  12:36   6.300|  16:36   1.260|  20:36    .756
00122>      0:42    .504|   4:42   1.008|   8:42   1.512|  12:42   4.536|  16:42   1.260|  20:42    .504
00123>      0:48    .504|   4:48   1.008|   8:48   1.512|  12:48   4.536|  16:48   1.260|  20:48    .504
00124>      0:54    .504|   4:54   1.008|   8:54   1.512|  12:54   4.284|  16:54   1.260|  20:54    .756
00125>      1:00    .504|   5:00   1.008|   9:00   1.512|  13:00   4.284|  17:00   1.260|  21:00    .756
00126>      1:06    .504|   5:06   1.008|   9:06   1.512|  13:06   3.024|  17:06    .756|  21:06    .756
00127>      1:12    .504|   5:12   1.008|   9:12   1.512|  13:12   3.024|  17:12    .756|  21:12    .756
00128>      1:18    .504|   5:18   1.008|   9:18   1.512|  13:18   2.520|  17:18    .756|  21:18    .504
00129>      1:24    .504|   5:24   1.008|   9:24   1.512|  13:24   2.520|  17:24    .756|  21:24    .504
00130>      1:30    .504|   5:30   1.008|   9:30   1.512|  13:30   2.520|  17:30   1.008|  21:30    .756
00131>      1:36    .504|   5:36   1.008|   9:36   1.512|  13:36   2.520|  17:36   1.008|  21:36    .756
00132>      1:42    .504|   5:42   1.008|   9:42   1.512|  13:42   2.520|  17:42    .756|  21:42    .504
00133>      1:48    .504|   5:48   1.008|   9:48   1.512|  13:48   2.520|  17:48    .756|  21:48    .504
00134>      1:54    .504|   5:54   1.008|   9:54   1.512|  13:54   2.520|  17:54   1.008|  21:54    .756
00135>      2:00    .504|   6:00   1.008|  10:00   1.512|  14:00   2.520|  18:00   1.008|  22:00    .756
00136>      2:06    .504|   6:06   1.008|  10:06   1.512|  14:06   2.520|  18:06    .756|  22:06    .504
00137>      2:12    .504|   6:12   1.008|  10:12   1.512|  14:12   2.520|  18:12    .756|  22:12    .504
00138>      2:18    .504|   6:18   1.008|  10:18   2.772|  14:18   1.512|  18:18    .756|  22:18    .504
00139>      2:24    .504|   6:24   1.008|  10:24   2.772|  14:24   1.512|  18:24    .756|  22:24    .504
00140>      2:30    .504|   6:30   1.008|  10:30   2.772|  14:30   1.512|  18:30    .756|  22:30    .756
00141>      2:36    .504|   6:36   1.008|  10:36   2.772|  14:36   1.512|  18:36    .756|  22:36    .756
00142>      2:42    .504|   6:42   1.008|  10:42   2.772|  14:42   1.512|  18:42   1.008|  22:42    .504
00143>      2:48    .504|   6:48   1.008|  10:48   2.772|  14:48   1.512|  18:48   1.008|  22:48    .504
00144>      2:54    .504|   6:54   1.008|  10:54   2.772|  14:54   1.512|  18:54    .756|  22:54    .756
00145>      3:00    .504|   7:00   1.008|  11:00   2.772|  15:00   1.512|  19:00    .756|  23:00    .756
00146>      3:06    .504|   7:06   1.008|  11:06   2.772|  15:06   1.512|  19:06    .756|  23:06    .504
00147>      3:12    .504|   7:12   1.008|  11:12   2.772|  15:12   1.512|  19:12    .756|  23:12    .504
00148>      3:18    .504|   7:18   1.008|  11:18   3.780|  15:18   1.260|  19:18   1.008|  23:18    .504
00149>      3:24    .504|   7:24   1.008|  11:24   3.780|  15:24   1.260|  19:24   1.008|  23:24    .504
00150>      3:30    .504|   7:30   1.008|  11:30   5.544|  15:30   1.260|  19:30    .756|  23:30    .504
00151>      3:36    .504|   7:36   1.008|  11:36   5.544|  15:36   1.260|  19:36    .756|  23:36    .504
00152>      3:42    .504|   7:42   1.008|  11:42  13.356|  15:42   1.260|  19:42   1.008|  23:42    .756
00153>      3:48    .504|   7:48   1.008|  11:48  13.356|  15:48   1.260|  19:48   1.008|  23:48    .756
00154>      3:54    .504|   7:54   1.008|  11:54  27.720|  15:54   1.260|  19:54    .756|  23:54   1.008
00155>      4:00    .504|   8:00   1.008|  12:00  27.720|  16:00   1.260|  20:00    .756|  24:00   1.008
00156>
00157> --------------------------------------------------------------------------------
00158> R0001:C00003------------------------------------------------------------------------------
00159> *#-----------------|-----------Area 2101 (West Developed Area)---------------|
00160> -------------------------
00161> | CALIB STANDHYD          |   Area    (ha)=   10.00
00162> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00163> -------------------------
00164>                             IMPERVIOUS    PERVIOUS (i)
00165>      Surface Area     (ha)=       5.00         5.00
00166>      Dep. Storage     (mm)=       2.00         5.00
00167>      Average Slope     (%)=        .50         2.00
00168>      Length            (m)=     100.00        35.00
00169>      Mannings n            =       .013         .150
00170>
00171>      Max.eff.Inten.(mm/hr)=      56.70        18.93
00172>                over (min)        4.00        13.00
00173>      Storage Coeff.  (min)=       3.95 (ii)   13.28 (ii)
00174>      Unit Hyd. Tpeak (min)=       4.00        13.00
00175>      Unit Hyd. peak  (cms)=        .28          .09
00176>                                                        *TOTALS*
00177>      PEAK FLOW       (cms)=        .45          .17          .579 (iii)
00178>      TIME TO PEAK    (hrs)=      12.20        12.33        12.200
00179>      RUNOFF VOLUME    (mm)=      48.40        10.89        22.143
00180>      TOTAL RAINFALL   (mm)=      50.40        50.40        50.400
00181>      RUNOFF COEFFICIENT   =        .96          .22          .439
00182>
00183>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00184>              CN* =  54.0    Ia = Dep. Storage    (Above)
00185>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00186>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00187>
00188> --------------------------------------------------------------------------------
00189> R0001:C00004------------------------------------------------------------------------------
00190> *#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00191> -------------------------
00192> | CALIB NASHYD            |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
00193> | 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
00194> -------------------------   U.H. Tp(hrs)=    1.020
00195>
00196>      Unit Hyd Qpeak  (cms)=      .258
00197>
00198>      PEAK FLOW       (cms)=      .036 (i)
00199>      TIME TO PEAK    (hrs)=   13.200
00200>      DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
00201>      AVERAGE FLOW    (cms)=     .004
00202>      RUNOFF VOLUME    (mm)=    7.113
00203>      TOTAL RAINFALL   (mm)=   50.400
00204>      RUNOFF COEFFICIENT   =     .141
00205>
00206>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00207>
00208> --------------------------------------------------------------------------------
00209> R0001:C00005------------------------------------------------------------------------------
00210> *#-----------------|-----------Area 2103 (East Developed Area)---------------|
00211> -------------------------
00212> | CALIB STANDHYD          |   Area    (ha)=    1.70
00213> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00214> -------------------------
00215>                             IMPERVIOUS    PERVIOUS (i)
00216>      Surface Area     (ha)=       1.10          .60
00217>      Dep. Storage     (mm)=       2.00         5.00
00218>      Average Slope     (%)=        .50         2.00
00219>      Length            (m)=     295.00        35.00
00220>      Mannings n            =       .013         .150
00221>
00222>      Max.eff.Inten.(mm/hr)=      56.70        47.86
00223>                over (min)        8.00        14.00
00224>      Storage Coeff.  (min)=       7.55 (ii)   13.99 (ii)
00225>      Unit Hyd. Tpeak (min)=       8.00        14.00
00226>      Unit Hyd. peak  (cms)=        .15          .08
00227>                                                        *TOTALS*
00228>      PEAK FLOW       (cms)=        .09          .05          .133 (iii)
00229>      TIME TO PEAK    (hrs)=      12.23        12.33        12.250
00230>      RUNOFF VOLUME    (mm)=      48.39        22.65        32.950
00231>      TOTAL RAINFALL   (mm)=      50.40        50.40        50.400
00232>      RUNOFF COEFFICIENT   =        .96          .45          .654
00233>
00234>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00235>              CN* =  74.0    Ia = Dep. Storage    (Above)
00236>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00237>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00238>
00239> --------------------------------------------------------------------------------
00240> R0001:C00006------------------------------------------------------------------------------
00241> *#-----------------|-----------Area 2104 (East Natural Area)-------------|
00242> -------------------------
00243> | CALIB NASHYD            |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
00244> | 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
00245> -------------------------   U.H. Tp(hrs)=     .740
00246>
00247>      Unit Hyd Qpeak  (cms)=      .563
00248>
00249>      PEAK FLOW       (cms)=      .082 (i)
00250>      TIME TO PEAK    (hrs)=   12.900
00251>      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
00252>      AVERAGE FLOW    (cms)=     .009
00253>      RUNOFF VOLUME    (mm)=    8.322
00254>      TOTAL RAINFALL   (mm)=   50.400
00255>      RUNOFF COEFFICIENT   =     .165
00256>
00257>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00258>
00259> --------------------------------------------------------------------------------
00260> R0001:C00007------------------------------------------------------------------------------
00261> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00262> -------------------------
00263> | CALIB NASHYD            |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
00264> | 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
00265> -------------------------   U.H. Tp(hrs)=    2.350
00266>
00267>      Unit Hyd Qpeak  (cms)=      .349
00268>
00269>      PEAK FLOW       (cms)=      .055 (i)
00270>      TIME TO PEAK    (hrs)=   15.000
00271>      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
00272>      AVERAGE FLOW    (cms)=     .010
00273>      RUNOFF VOLUME    (mm)=    6.715
00274>      TOTAL RAINFALL   (mm)=   50.400
00275>      RUNOFF COEFFICIENT   =     .133
00276>
00277>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00278>
00279> --------------------------------------------------------------------------------
00280> R0001:C00008------------------------------------------------------------------------------
00281> *#-----------------|-----------Post Development Uncontrolled Flow to Silver Creek-----|
00282> -------------------------
00283> | ADD HYD                 |
00284> | 06:UC-West              |   ID:NHYD            AREA    QPEAK    TPEAK      R.V.     DWF
00285> -------------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
00286>                           ID 1 01:2101          10.000     .579   12.200    22.143     .000
00287>                          +ID 2 02:2102           6.900     .036   13.200     7.113     .000
00288>                          ========================================================================
00289>                          SUM   06:UC-West       16.900     .587   12.200    16.006     .000
00290>
00291>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00292>
00293> --------------------------------------------------------------------------------
00294> R0001:C00009------------------------------------------------------------------------------
00295> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00296> -------------------------
00297> | ADD HYD                 |
00298> | 07:UC-East              |   ID:NHYD            AREA    QPEAK    TPEAK      R.V.     DWF
00299> -------------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
00300>                           ID 1 03:2103           1.700     .133   12.250    32.950     .000
00301>                          +ID 2 04:2104          10.900     .082   12.900     8.322     .000
00302>                          +ID 3 05:2105          21.500     .055   15.000     6.715     .000
00303>                          ========================================================================
00304>                          SUM   07:UC-East       34.100     .170   12.283     8.537     .000
00305>
00306>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00307>
00308> --------------------------------------------------------------------------------
```

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00309> R0001:C00010-----------------------------------------------------------------------------------------------
00310> *#-----------------|-------------------Route West Pond-------------------------|
00311> ----------------------
00312> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00313> |  IN>01:2101         |
00314> | OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
00315> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00316>                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
00317>                          .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
00318>                          .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
00319>                          .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00
00320>
00321>      ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
00322>      ----------------------      (ha)     (cms)     (hrs)      (mm)
00323>      INFLOW > 01:2101          10.000      .579    12.200    22.143
00324>     OUTFLOW < 06:W.Pond        10.000      .027    14.433    22.142
00325>    OVERFLOW < 07:W.Spill          .000      .000      .000      .000
00326>
00327>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
00328>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00329>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00330>
00331>
00332>                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    4.732
00333>                    TIME SHIFT OF PEAK FLOW          (min)=   134.00
00334>                    MAXIMUM  STORAGE   USED       (ha.m.)=.1380E+00
00335>
00336> ----------------------------------------------------------------------------------------------------------
00337> R0001:C00011-----------------------------------------------------------------------------------------------
00338> *#-----------------|-------------------Route East Storage----------------------|
00339> ----------------------
00340> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00341> |  IN>03:2103         |
00342> | OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
00343> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00344>                          (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
00345>                          .000 .0000E+00|    .008 .1900E-01|    .099 .2930E-01|    .166 .3600E-01
00346>                          .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00
00347>
00348>      ROUTING RESULTS            AREA     QPEAK     TPEAK      R.V.
00349>      ----------------------      (ha)     (cms)     (hrs)      (mm)
00350>      INFLOW > 03:2103          1.700      .133    12.250    32.950
00351>     OUTFLOW < 08:E.Storage     1.700      .050    12.600    32.950
00352>    OVERFLOW < 09:E.Spill          .000      .000      .000      .000
00353>
00354>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
00355>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00356>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00357>
00358>
00359>                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   37.592
00360>                    TIME SHIFT OF PEAK FLOW          (min)=    21.00
00361>                    MAXIMUM  STORAGE   USED       (ha.m.)=.2376E-01
00362>
00363> ----------------------------------------------------------------------------------------------------------
00364> R0001:C00012-----------------------------------------------------------------------------------------------
00365> *#-----------------|----Post Development Controlled Flow to Silver Creek-------|
00366> ----------------------
00367> | ADD HYD           |
00368> | 01:West           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00369> ----------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
00370>                          ID 1 02:2102        6.900      .036   13.200     7.113    .000
00371>                         +ID 2 06:W.Pond     10.000      .027   14.433    22.142    .000
00372>                         +ID 3 07:W.Spill      .000      .000     .000      .000    .000  **DRY**
00373>                          ========================================================
00374>                          SUM   01:West       16.900      .063   13.300    16.006    .000
00375>
00376>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00377>
00378> ----------------------------------------------------------------------------------------------------------
00379> R0001:C00013-----------------------------------------------------------------------------------------------
00380> ----------------------
00381> | SAVE HYD          |   AREA       (ha)=   16.900
00382> | ID=01:West        |   QPEAK     (cms)=     .063 (i)
00383> | DT= 1.00 PCYC=-1  |   TPEAK     (hrs)=   13.300
00384> ----------------------   VOLUME      (mm)=   16.006
00385>   Filename: West.0001
00386>   Comments: West
00387>
00388>       (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00389> ----------------------------------------------------------------------------------------------------------
00390> R0001:C00014-----------------------------------------------------------------------------------------------
00391> *#-----------------|----Post Development Controlled Flow to East---------------|
00392> ----------------------
00393> | ADD HYD           |
00394> | 02:East           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00395> ----------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
00396>                          ID 1 04:2104       10.900      .082   12.900     8.322    .000
00397>                         +ID 2 05:2105       21.500      .055   15.000     6.715    .000
00398>                         +ID 3 08:E.Storage      1.700      .050   12.600    32.950    .000
00399>                         +ID 4 09:E.Spill        .000      .000     .000      .000    .000  **DRY**
00400>                          ========================================================
00401>                          SUM   02:East       34.100      .142   12.800     8.537    .000
00402>
00403>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00404>
00405> ----------------------------------------------------------------------------------------------------------
00406> R0001:C00015-----------------------------------------------------------------------------------------------
00407> ----------------------
00408> | SAVE HYD          |   AREA       (ha)=   34.100
00409> | ID=02:East        |   QPEAK     (cms)=     .142 (i)
00410> | DT= 1.00 PCYC=-1  |   TPEAK     (hrs)=   12.800
00411> ----------------------   VOLUME      (mm)=    8.537
00412>   Filename: East.0001
00413>   Comments: East
00414>
00415>       (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00416> ----------------------------------------------------------------------------------------------------------
00417> R0001:C00016-----------------------------------------------------------------------------------------------
00418> *#*************************************************************************
00419> *#*******************POST-DEVELOPMENT CONTROLLED - 5 YEAR Event ******************
00420> *#*************************************************************************
00421> *
00422> *#   Rainfall Depths per MTO - Basins East of Collingwood
00423> *#              SCS Rainfall Distribution
00424> *
00425> *#*************************************************************************
00426> ----------------------
00427> | MASS STORM        |   Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
00428> | Ptotal= 64.80 mm  |   Comments: 24 hour SCS II storm mass curve
00429> ----------------------
00430>                          Duration of storm        =   24.00 hrs
00431>                          Mass curve time step     =   12.00 min
00432>                          Selected storm time step =    6.00 min
00433>                          Volume of derived storm  =   64.80 mm
00434>
00435>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00436>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00437>       0:06    .000|   4:06    .648|   8:06   1.296|  12:06  72.900|  16:06   1.620|  20:06   1.296
00438>       0:12    .000|   4:12    .648|   8:12   1.296|  12:12  72.900|  16:12   1.620|  20:12   1.296
00439>       0:18    .648|   4:18   1.296|   8:18   1.944|  12:18  12.960|  16:18   1.620|  20:18    .972
00440>       0:24    .648|   4:24   1.296|   8:24   1.944|  12:24  12.960|  16:24   1.620|  20:24    .972
00441>       0:30    .648|   4:30   1.296|   8:30   1.944|  12:30   8.100|  16:30   1.620|  20:30    .972
00442>       0:36    .648|   4:36   1.296|   8:36   1.944|  12:36   8.100|  16:36   1.620|  20:36    .972
00443>       0:42    .648|   4:42   1.296|   8:42   1.944|  12:42   5.832|  16:42   1.620|  20:42    .648
00444>       0:48    .648|   4:48   1.296|   8:48   1.944|  12:48   5.832|  16:48   1.620|  20:48    .648
00445>       0:54    .648|   4:54   1.296|   8:54   1.944|  12:54   5.508|  16:54   1.620|  20:54    .972
00446>       1:00    .648|   5:00   1.296|   9:00   1.944|  13:00   5.508|  17:00   1.620|  21:00    .972
00447>       1:06    .648|   5:06   1.296|   9:06   1.944|  13:06   3.888|  17:06    .972|  21:06    .972
00448>       1:12    .648|   5:12   1.296|   9:12   1.944|  13:12   3.888|  17:12    .972|  21:12    .972
00449>       1:18    .648|   5:18   1.296|   9:18   1.944|  13:18   3.240|  17:18    .972|  21:18    .648
00450>       1:24    .648|   5:24   1.296|   9:24   1.944|  13:24   3.240|  17:24    .972|  21:24    .648
00451>       1:30    .648|   5:30   1.296|   9:30   1.944|  13:30   3.240|  17:30   1.296|  21:30    .972
00452>       1:36    .648|   5:36   1.296|   9:36   1.944|  13:36   3.240|  17:36   1.296|  21:36    .972
00453>       1:42    .648|   5:42   1.296|   9:42   1.944|  13:42   3.240|  17:42    .972|  21:42    .648
00454>       1:48    .648|   5:48   1.296|   9:48   1.944|  13:48   3.240|  17:48    .972|  21:48    .648
00455>       1:54    .648|   5:54   1.296|   9:54   1.944|  13:54   3.240|  17:54   1.296|  21:54    .972
00456>       2:00    .648|   6:00   1.296|  10:00   1.944|  14:00   3.240|  18:00   1.296|  22:00    .972
00457>       2:06    .648|   6:06   1.296|  10:06   1.944|  14:06   3.240|  18:06    .972|  22:06    .648
00458>       2:12    .648|   6:12   1.296|  10:12   1.944|  14:12   3.240|  18:12    .972|  22:12    .648
00459>       2:18    .648|   6:18   1.296|  10:18   3.564|  14:18   1.944|  18:18    .972|  22:18    .648
00460>       2:24    .648|   6:24   1.296|  10:24   3.564|  14:24   1.944|  18:24    .972|  22:24    .648
00461>       2:30    .648|   6:30   1.296|  10:30   3.564|  14:30   1.944|  18:30    .972|  22:30    .972
00462>       2:36    .648|   6:36   1.296|  10:36   3.564|  14:36   1.944|  18:36    .972|  22:36    .972
00463>       2:42    .648|   6:42   1.296|  10:42   3.564|  14:42   1.944|  18:42   1.296|  22:42    .648
00464>       2:48    .648|   6:48   1.296|  10:48   3.564|  14:48   1.944|  18:48   1.296|  22:48    .648
00465>       2:54    .648|   6:54   1.296|  10:54   3.564|  14:54   1.944|  18:54    .972|  22:54    .972
00466>       3:00    .648|   7:00   1.296|  11:00   3.564|  15:00   1.944|  19:00    .972|  23:00    .972
00467>       3:06    .648|   7:06   1.296|  11:06   3.564|  15:06   1.944|  19:06    .972|  23:06    .648
00468>       3:12    .648|   7:12   1.296|  11:12   3.564|  15:12   1.944|  19:12    .972|  23:12    .648
00469>       3:18    .648|   7:18   1.296|  11:18   4.860|  15:18   1.620|  19:18   1.296|  23:18    .648
00470>       3:24    .648|   7:24   1.296|  11:24   4.860|  15:24   1.620|  19:24   1.296|  23:24    .648
00471>       3:30    .648|   7:30   1.296|  11:30   7.128|  15:30   1.620|  19:30    .972|  23:30    .648
00472>       3:36    .648|   7:36   1.296|  11:36   7.128|  15:36   1.620|  19:36    .972|  23:36    .648
00473>       3:42    .648|   7:42   1.296|  11:42  17.172|  15:42   1.620|  19:42   1.296|  23:42    .972
00474>       3:48    .648|   7:48   1.296|  11:48  17.172|  15:48   1.620|  19:48   1.296|  23:48    .972
00475>       3:54    .648|   7:54   1.296|  11:54  35.640|  15:54   1.620|  19:54    .972|  23:54   1.296
00476>       4:00    .648|   8:00   1.296|  12:00  35.640|  16:00   1.620|  20:00    .972|  24:00   1.296
00477>
00478> ----------------------------------------------------------------------------------------------------------
00479> R0001:C00017-----------------------------------------------------------------------------------------------
00480> *#-----------------|-----------Area 2101 (West Developed Area)----------------|
00481> ----------------------
00482> | CALIB STANDHYD          |   Area     (ha)=   10.00
00483> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00484> -------------------------
00485>                              IMPERVIOUS    PERVIOUS (i)
00486>      Surface Area     (ha)=       5.00         5.00
00487>      Dep. Storage     (mm)=       2.00         5.00
00488>      Average Slope     (%)=        .50         2.00
00489>      Length            (m)=     100.00        35.00
00490>      Mannings n            =       .013         .150
00491>
00492>      Max.eff.Inten.(mm/hr)=      72.90        32.31
00493>                 over (min)=       4.00        11.00
00494>      Storage Coeff.  (min)=       3.57 (ii)   11.10 (ii)
00495>      Unit Hyd. Tpeak (min)=       4.00        11.00
00496>      Unit Hyd. peak  (cms)=        .30          .10
00497>                                                          *TOTALS*
00498>      PEAK FLOW       (cms)=        .59          .30          .835 (iii)
00499>      TIME TO PEAK    (hrs)=      12.20        12.30        12.200
00500>      RUNOFF VOLUME    (mm)=      62.80        17.37        31.002
00501>      TOTAL RAINFALL   (mm)=      64.80        64.80        64.800
00502>      RUNOFF COEFFICIENT   =        .97          .27          .478
00503>
00504>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00505>                CN* =  54.0    Ia = Dep. Storage    (Above)
00506>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00507>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00508>
00509> ----------------------------------------------------------------------------------------------------------
00510> R0001:C00018-----------------------------------------------------------------------------------------------
00511> *#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00512> ----------------------
00513> | CALIB NASHYD            |   Area     (ha)=    6.900   Curve Number    (CN)= 52.80
00514> | 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
00515> -------------------------   U.H. Tp(hrs)=    1.020
00516>
00517>      Unit Hyd Qpeak  (cms)=     .258
00518>
00519>      PEAK FLOW       (cms)=     .061 (i)
00520>      TIME TO PEAK    (hrs)=   13.200
00521>      DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
00522>      AVERAGE FLOW    (cms)=     .007
00523>      RUNOFF VOLUME    (mm)=   11.911
00524>      TOTAL RAINFALL   (mm)=   64.800
00525>      RUNOFF COEFFICIENT   =     .184
00526>
00527>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00528>
00529> ----------------------------------------------------------------------------------------------------------
00530> R0001:C00019-----------------------------------------------------------------------------------------------
00531> *#-----------------|-----------Area 2103 (East Developed Area)---------------|
00532> ----------------------
00533> | CALIB STANDHYD          |   Area     (ha)=    1.70
00534> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00535> -------------------------
00536>                              IMPERVIOUS    PERVIOUS (i)
00537>      Surface Area     (ha)=       1.10          .60
00538>      Dep. Storage     (mm)=       2.00         5.00
00539>      Average Slope     (%)=        .50         2.00
00540>      Length            (m)=     295.00        35.00
00541>      Mannings n            =       .013         .150
00542>
00543>      Max.eff.Inten.(mm/hr)=      72.90        77.32
00544>                 over (min)=       7.00        12.00
00545>      Storage Coeff.  (min)=       6.83 (ii)   12.14 (ii)
00546>      Unit Hyd. Tpeak (min)=       7.00        12.00
00547>      Unit Hyd. peak  (cms)=        .16          .09
00548>                                                          *TOTALS*
00549>      PEAK FLOW       (cms)=        .12          .08          .193 (iii)
00550>      TIME TO PEAK    (hrs)=      12.22        12.30        12.250
00551>      RUNOFF VOLUME    (mm)=      62.80        33.61        45.286
00552>      TOTAL RAINFALL   (mm)=      64.80        64.80        64.800
00553>      RUNOFF COEFFICIENT   =        .97          .52          .699
00554>
00555>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00556>                CN* =  74.0    Ia = Dep. Storage    (Above)
00557>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00558>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00559>
00560> ----------------------------------------------------------------------------------------------------------
00561> R0001:C00020-----------------------------------------------------------------------------------------------
00562> *#-----------------|-----------Area 2104 (East Natural Area)------------|
00563> ----------------------
00564> | CALIB NASHYD            |   Area     (ha)=   10.900   Curve Number    (CN)= 61.60
00565> | 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
00566> -------------------------   U.H. Tp(hrs)=     .740
00567>
00568>      Unit Hyd Qpeak  (cms)=     .563
00569>
00570>      PEAK FLOW       (cms)=     .146 (i)
00571>      TIME TO PEAK    (hrs)=   12.900
00572>      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
00573>      AVERAGE FLOW    (cms)=     .015
00574>      RUNOFF VOLUME    (mm)=   14.224
00575>      TOTAL RAINFALL   (mm)=   64.800
00576>      RUNOFF COEFFICIENT   =     .220
00577>
00578>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00579>
00580> ----------------------------------------------------------------------------------------------------------
00581> R0001:C00021-----------------------------------------------------------------------------------------------
00582> *#-----------------|-----------Area 2105 (Central Natural Area)------------|
00583> ----------------------
00584> | CALIB NASHYD            |   Area     (ha)=   21.500   Curve Number    (CN)= 53.90
00585> | 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
00586> -------------------------   U.H. Tp(hrs)=    2.350
00587>
00588>      Unit Hyd Qpeak  (cms)=     .349
00589>
00590>      PEAK FLOW       (cms)=     .097 (i)
00591>      TIME TO PEAK    (hrs)=   14.900
00592>      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
00593>      AVERAGE FLOW    (cms)=     .017
00594>      RUNOFF VOLUME    (mm)=   11.514
00595>      TOTAL RAINFALL   (mm)=   64.800
00596>      RUNOFF COEFFICIENT   =     .178
00597>
00598>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00599>
00600> ----------------------------------------------------------------------------------------------------------
00601> R0001:C00022-----------------------------------------------------------------------------------------------
00602> *#-----------------|-----Post Development Uncontrolled Flow to Silver Creek-----|
00603> ----------------------
00604> | ADD HYD           |
00605> | 06:UC-West        |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00606> ----------------------                       (ha)     (cms)    (hrs)      (mm)    (cms)
00607>                          ID 1 01:2101       10.000      .835   12.200    31.002    .000
00608>                         +ID 2 02:2102        6.900      .061   13.200    11.911    .000
00609>                          ========================================================
00610>                          SUM   06:UC-West   16.900      .849   12.200    23.207    .000
00611>
00612>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00613>
00614> ----------------------------------------------------------------------------------------------------------
00615> R0001:C00023-----------------------------------------------------------------------------------------------
00616> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
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00617> ------------------------
00618> | ADD HYD              |
00619> | 07:UC-East           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00620> ------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
00621>                        ID 1 03:2103          1.700      .193   12.250    45.286    .000
00622>                       +ID 2 04:2104         10.900      .146   12.900    14.224    .000
00623>                       +ID 3 05:2105         21.500      .097   14.900    11.514    .000
00624>                       ========================================================
00625>                       SUM   07:UC-East      34.100      .262   12.267    14.064    .000
00626>
00627>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00628>
00629> ------------------------------------------------------------------------------------------------
00630> R0001:C00024-----------------------------------------------------------------------------------
00631> *#----------------|--------------------Route West Pond--------------------------|
00632> ------------------------
00633> |  ROUTE RESERVOIR -> |     Requested routing time step =  1.0 min.
00634> |  IN>01:2101         |
00635> | OUT<06:W.Pond       | ========================  OUTLFW STORAGE TABLE  ========================
00636> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00637>                         (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)
00638>                          .000 .0000E+00|   .030 .1670E+00|   .038 .3010E+00|   .603 .4620E+00
00639>                          .018 .6100E-01|   .034 .2300E+00|   .042 .3780E+00|  3.086 .6010E+00
00640>                          .025 .1110E+00|   .038 .3010E+00|   .603 .4620E+00|   .000 .0000E+00
00641>
00642>      ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
00643>      ----------------------      (ha)     (cms)     (hrs)       (mm)
00644>       INFLOW > 01:2101         10.000      .835    12.200     31.002
00645>     OUTFLOW < 06:W.Pond        10.000      .032    15.250     31.001
00646>    OVERFLOW < 07:W.Spill         .000      .000      .000      .000
00647>
00648>                        TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
00649>                        CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00650>                        PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00651>
00652>
00653>                        PEAK   FLOW   REDUCTION [Qout/Qin](%)=    3.836
00654>                        TIME SHIFT OF PEAK FLOW          (min)=   183.00
00655>                        MAXIMUM  STORAGE   USED       (ha.m.)=.1987E+00
00656>
00657> ------------------------------------------------------------------------------------------------
00658> R0001:C00025-----------------------------------------------------------------------------------
00659> *#----------------|--------------------Route East Storage----------------------|
00660> ------------------------
00661> |  ROUTE RESERVOIR -> |     Requested routing time step =  1.0 min.
00662> |  IN>03:2103         |
00663> | OUT<08:E.Storage    | ========================  OUTLFW STORAGE TABLE  ========================
00664> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00665>                         (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)
00666>                          .000 .0000E+00|   .008 .1900E-01|   .099 .2930E-01|   .166 .3600E-01
00667>                          .006 .8500E-02|   .099 .2930E-01|   .144 .3600E-01|   .000 .0000E+00
00668>
00669>      ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
00670>      ----------------------      (ha)     (cms)     (hrs)       (mm)
00671>       INFLOW > 03:2103         1.700      .193    12.250     45.286
00672>     OUTFLOW < 08:E.Storage     1.700      .096    12.467     45.286
00673>    OVERFLOW < 09:E.Spill         .000      .000      .000      .000
00674>
00675>                        TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
00676>                        CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00677>                        PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00678>
00679>
00680>                        PEAK   FLOW   REDUCTION [Qout/Qin](%)=   49.650
00681>                        TIME SHIFT OF PEAK FLOW          (min)=    13.00
00682>                        MAXIMUM  STORAGE   USED       (ha.m.)=.2894E-01
00683>
00684> ------------------------------------------------------------------------------------------------
00685> R0001:C00026-----------------------------------------------------------------------------------
00686> *#----------------|----Post Development Controlled Flow to Silver Creek-------|
00687> ------------------------
00688> | ADD HYD              |
00689> | 01:West              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00690> ------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
00691>                        ID 1 02:2102          6.900      .061   13.200    11.911    .000
00692>                       +ID 2 06:W.Pond       10.000      .032   15.250    31.001    .000
00693>                       +ID 3 07:W.Spill        .000      .000     .000      .000    .000  **DRY**
00694>                       ========================================================
00695>                       SUM   01:West         16.900      .092   13.200    23.207    .000
00696>
00697>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00698>
00699> ------------------------------------------------------------------------------------------------
00700> R0001:C00027-----------------------------------------------------------------------------------
00701> ------------------------
00702> | SAVE HYD         |   AREA       (ha)=   16.900
00703> | ID=01:West       |   QPEAK      (cms)=    .092 (i)
00704> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=  13.200
00705> ------------------------   VOLUME     (mm)=  23.207
00706>   Filename: West.0001
00707>   Comments: West
00708>
00709>       (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00710> ------------------------------------------------------------------------------------------------
00711> R0001:C00028-----------------------------------------------------------------------------------
00712> *#----------------|----Post Development Controlled Flow to East---------------|
00713> ------------------------
00714> | ADD HYD              |
00715> | 02:East              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
00716> ------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
00717>                        ID 1 04:2104         10.900      .146   12.900    14.224    .000
00718>                       +ID 2 05:2105         21.500      .097   14.900    11.514    .000
00719>                       +ID 3 08:E.Storage     1.700      .096   12.467    45.286    .000
00720>                       +ID 4 09:E.Spill         .000      .000     .000      .000    .000  **DRY**
00721>                       ========================================================
00722>                       SUM   02:East         34.100      .247   12.800    14.064    .000
00723>
00724>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00725>
00726> ------------------------------------------------------------------------------------------------
00727> R0001:C00029-----------------------------------------------------------------------------------
00728> ------------------------
00729> | SAVE HYD         |   AREA       (ha)=   34.100
00730> | ID=02:East       |   QPEAK      (cms)=    .247 (i)
00731> | DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=  12.800
00732> ------------------------   VOLUME     (mm)=  14.064
00733>   Filename: East.0001
00734>   Comments: East
00735>
00736>       (i)  PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00737> ------------------------------------------------------------------------------------------------
00738> R0001:C00030-----------------------------------------------------------------------------------
00739> *#**************************************************************************
00740> *#*****************POST-DEVELOPMENT CONTROLLED - 10 YEAR Event *****************
00741> *#**************************************************************************
00742> *
00743> *#   Rainfall Depths per MTO - Basins East of Collingwood
00744> *#                SCS Rainfall Distribution
00745> *
00746> *#**************************************************************************
00747> --------------------
00748> | MASS STORM     |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
00749> | Ptotal= 74.40 mm |   Comments: 24 hour SCS II storm mass curve
00750> --------------------
00751>                         Duration of storm        =   24.00 hrs
00752>                         Mass curve time step     =   12.00 min
00753>                         Selected storm time step =    6.00 min
00754>                         Volume of derived storm  =   74.40 mm
00755>
00756>      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00757>      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00758>       0:06    .000|   4:06    .744|   8:06   1.488|  12:06  83.700|  16:06   1.860|  20:06   1.488
00759>       0:12    .000|   4:12    .744|   8:12   1.488|  12:12  83.700|  16:12   1.860|  20:12   1.488
00760>       0:18    .744|   4:18   1.488|   8:18   2.232|  12:18  14.880|  16:18   1.860|  20:18   1.116
00761>       0:24    .744|   4:24   1.488|   8:24   2.232|  12:24  14.880|  16:24   1.860|  20:24   1.116
00762>       0:30    .744|   4:30   1.488|   8:30   2.232|  12:30   9.300|  16:30   1.860|  20:30   1.116
00763>       0:36    .744|   4:36   1.488|   8:36   2.232|  12:36   9.300|  16:36   1.860|  20:36   1.116
00764>       0:42    .744|   4:42   1.488|   8:42   2.232|  12:42   6.696|  16:42   1.860|  20:42    .744
00765>       0:48    .744|   4:48   1.488|   8:48   2.232|  12:48   6.696|  16:48   1.860|  20:48    .744
00766>       0:54    .744|   4:54   1.488|   8:54   2.232|  12:54   6.324|  16:54   1.860|  20:54   1.116
00767>       1:00    .744|   5:00   1.488|   9:00   2.232|  13:00   6.324|  17:00   1.860|  21:00   1.116
00768>       1:06    .744|   5:06   1.488|   9:06   2.232|  13:06   4.464|  17:06   1.116|  21:06   1.116
00769>       1:12    .744|   5:12   1.488|   9:12   2.232|  13:12   4.464|  17:12   1.116|  21:12   1.116
00770>       1:18    .744|   5:18   1.488|   9:18   2.232|  13:18   3.720|  17:18   1.116|  21:18    .744
00771>       1:24    .744|   5:24   1.488|   9:24   2.232|  13:24   3.720|  17:24   1.116|  21:24    .744
00772>       1:30    .744|   5:30   1.488|   9:30   2.232|  13:30   3.720|  17:30   1.488|  21:30   1.116
00773>       1:36    .744|   5:36   1.488|   9:36   2.232|  13:36   3.720|  17:36   1.488|  21:36   1.116
00774>       1:42    .744|   5:42   1.488|   9:42   2.232|  13:42   3.720|  17:42   1.116|  21:42    .744
00775>       1:48    .744|   5:48   1.488|   9:48   2.232|  13:48   3.720|  17:48   1.116|  21:48    .744
00776>       1:54    .744|   5:54   1.488|   9:54   2.232|  13:54   3.720|  17:54   1.488|  21:54   1.116
00777>       2:00    .744|   6:00   1.488|  10:00   2.232|  14:00   3.720|  18:00   1.488|  22:00   1.116
00778>       2:06    .744|   6:06   1.488|  10:06   2.232|  14:06   3.720|  18:06   1.116|  22:06    .744
00779>       2:12    .744|   6:12   1.488|  10:12   2.232|  14:12   3.720|  18:12   1.116|  22:12    .744
00780>       2:18    .744|   6:18   1.488|  10:18   4.092|  14:18   2.232|  18:18   1.116|  22:18    .744
00781>       2:24    .744|   6:24   1.488|  10:24   4.092|  14:24   2.232|  18:24   1.116|  22:24    .744
00782>       2:30    .744|   6:30   1.488|  10:30   4.092|  14:30   2.232|  18:30   1.116|  22:30   1.116
00783>       2:36    .744|   6:36   1.488|  10:36   4.092|  14:36   2.232|  18:36   1.116|  22:36   1.116
00784>       2:42    .744|   6:42   1.488|  10:42   4.092|  14:42   2.232|  18:42   1.488|  22:42    .744
00785>       2:48    .744|   6:48   1.488|  10:48   4.092|  14:48   2.232|  18:48   1.488|  22:48    .744
00786>       2:54    .744|   6:54   1.488|  10:54   4.092|  14:54   2.232|  18:54   1.116|  22:54   1.116
00787>       3:00    .744|   7:00   1.488|  11:00   4.092|  15:00   2.232|  19:00   1.116|  23:00   1.116
00788>       3:06    .744|   7:06   1.488|  11:06   4.092|  15:06   2.232|  19:06   1.116|  23:06    .744
00789>       3:12    .744|   7:12   1.488|  11:12   4.092|  15:12   2.232|  19:12   1.116|  23:12    .744
00790>       3:18    .744|   7:18   1.488|  11:18   5.580|  15:18   1.860|  19:18   1.488|  23:18    .744
00791>       3:24    .744|   7:24   1.488|  11:24   5.580|  15:24   1.860|  19:24   1.488|  23:24    .744
00792>       3:30    .744|   7:30   1.488|  11:30   8.184|  15:30   1.860|  19:30   1.116|  23:30    .744
00793>       3:36    .744|   7:36   1.488|  11:36   8.184|  15:36   1.860|  19:36   1.116|  23:36    .744
00794>       3:42    .744|   7:42   1.488|  11:42  19.716|  15:42   1.860|  19:42   1.488|  23:42   1.116
00795>       3:48    .744|   7:48   1.488|  11:48  19.716|  15:48   1.860|  19:48   1.488|  23:48   1.116
00796>       3:54    .744|   7:54   1.488|  11:54  40.920|  15:54   1.860|  19:54   1.116|  23:54   1.488
00797>       4:00    .744|   8:00   1.488|  12:00  40.920|  16:00   1.860|  20:00   1.116|  24:00   1.488
00798>
00799> ------------------------------------------------------------------------------------------------
00800> R0001:C00031-----------------------------------------------------------------------------------
00801> *#----------------|-----------Area 2101 (West Developed Area)---------------|
00802> ------------------------
00803> | CALIB STANDHYD         |   Area     (ha)=   10.00
00804> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00805> ------------------------
00806>                             IMPERVIOUS    PERVIOUS (i)
00807>      Surface Area     (ha)=       5.00         5.00
00808>      Dep. Storage     (mm)=       2.00         5.00
00809>      Average Slope     (%)=        .50         2.00
00810>      Length            (m)=     100.00        35.00
00811>      Mannings n             =       .013         .150
00812>
00813>      Max.eff.Inten.(mm/hr)=      83.70        42.02
00814>                 over (min)=       3.00        10.00
00815>      Storage Coeff.  (min)=       3.38 (ii)   10.16 (ii)
00816>      Unit Hyd. Tpeak (min)=       3.00        10.00
00817>      Unit Hyd. peak  (cms)=        .35          .11
00818>                                                          *TOTALS*
00819>      PEAK FLOW       (cms)=        .68          .40         1.028 (iii)
00820>      TIME TO PEAK    (hrs)=      12.20        12.28        12.200
00821>      RUNOFF VOLUME    (mm)=      72.39        22.26        37.301
00822>      TOTAL RAINFALL   (mm)=      74.40        74.40        74.400
00823>      RUNOFF COEFFICIENT   =        .97          .30          .501
00824>
00825>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00826>            CN* = 54.0    Ia = Dep. Storage    (Above)
00827>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00828>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00829>
00830> ------------------------------------------------------------------------------------------------
00831> R0001:C00032-----------------------------------------------------------------------------------
00832> *#----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
00833> ------------------------
00834> | CALIB NASHYD           |   Area     (ha)=    6.900   Curve Number    (CN)= 52.80
00835> | 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
00836> ------------------------   U.H. Tp(hrs)=    1.020
00837>
00838>      Unit Hyd Qpeak  (cms)=     .258
00839>
00840>      PEAK FLOW       (cms)=     .081 (i)
00841>      TIME TO PEAK    (hrs)=   13.200
00842>      DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
00843>      AVERAGE FLOW    (cms)=     .010
00844>      RUNOFF VOLUME    (mm)=   15.631
00845>      TOTAL RAINFALL   (mm)=   74.400
00846>      RUNOFF COEFFICIENT   =     .210
00847>
00848>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00849>
00850> ------------------------------------------------------------------------------------------------
00851> R0001:C00033-----------------------------------------------------------------------------------
00852> *#----------------|-----------Area 2103 (East Developed Area)---------------|
00853> ------------------------
00854> | CALIB STANDHYD         |   Area     (ha)=    1.70
00855> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00856> ------------------------
00857>                             IMPERVIOUS    PERVIOUS (i)
00858>      Surface Area     (ha)=       1.10          .60
00859>      Dep. Storage     (mm)=       2.00         5.00
00860>      Average Slope     (%)=        .50         2.00
00861>      Length            (m)=     295.00        35.00
00862>      Mannings n             =       .013         .150
00863>
00864>      Max.eff.Inten.(mm/hr)=      83.70        95.74
00865>                 over (min)=       6.00        11.00
00866>      Storage Coeff.  (min)=       6.46 (ii)   11.34 (ii)
00867>      Unit Hyd. Tpeak (min)=       6.00        11.00
00868>      Unit Hyd. peak  (cms)=        .18          .10
00869>                                                          *TOTALS*
00870>      PEAK FLOW       (cms)=        .14          .11          .236 (iii)
00871>      TIME TO PEAK    (hrs)=      12.22        12.28        12.233
00872>      RUNOFF VOLUME    (mm)=      72.40        41.36        53.777
00873>      TOTAL RAINFALL   (mm)=      74.40        74.40        74.400
00874>      RUNOFF COEFFICIENT   =        .97          .56          .723
00875>
00876>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00877>            CN* = 74.0    Ia = Dep. Storage    (Above)
00878>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00879>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00880>
00881> ------------------------------------------------------------------------------------------------
00882> R0001:C00034-----------------------------------------------------------------------------------
00883> *#----------------|-----------Area 2104 (East Natural Area)-------------|
00884> ------------------------
00885> | CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number    (CN)= 61.60
00886> | 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
00887> ------------------------   U.H. Tp(hrs)=     .740
00888>
00889>      Unit Hyd Qpeak  (cms)=     .563
00890>
00891>      PEAK FLOW       (cms)=     .196 (i)
00892>      TIME TO PEAK    (hrs)=   12.900
00893>      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
00894>      AVERAGE FLOW    (cms)=     .019
00895>      RUNOFF VOLUME    (mm)=   18.769
00896>      TOTAL RAINFALL   (mm)=   74.400
00897>      RUNOFF COEFFICIENT   =     .252
00898>
00899>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00900>
00901> ------------------------------------------------------------------------------------------------
00902> R0001:C00035-----------------------------------------------------------------------------------
00903> *#----------------|-----------Area 2105 (Central Natural Area)-------------|
00904> ------------------------
00905> | CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number    (CN)= 53.90
00906> | 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
00907> ------------------------   U.H. Tp(hrs)=    2.350
00908>
00909>      Unit Hyd Qpeak  (cms)=     .349
00910>
00911>      PEAK FLOW       (cms)=     .129 (i)
00912>      TIME TO PEAK    (hrs)=   14.900
00913>      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
00914>      AVERAGE FLOW    (cms)=     .023
00915>      RUNOFF VOLUME    (mm)=   15.256
00916>      TOTAL RAINFALL   (mm)=   74.400
00917>      RUNOFF COEFFICIENT   =     .205
00918>
00919>      (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00920>
00921> ------------------------------------------------------------------------------------------------
00922> R0001:C00036-----------------------------------------------------------------------------------
00923> *#----------------|-----Post Development Uncontrolled Flow to Silver Creek-----|
00924> ------------------------
```

```
| ADD HYD              |
| 06:UC-West           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-----------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 01:2101          10.000    1.028   12.200    37.301    .000
                       +ID 2 02:2102           6.900     .081   13.200    15.631    .000
                        ==========================================================
                        SUM   06:UC-West      16.900    1.048   12.200    28.454    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00037-----------------------------------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
-----------------------
| ADD HYD              |
| 07:UC-East           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-----------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 03:2103           1.700     .236   12.233    53.777    .000
                       +ID 2 04:2104          10.900     .196   12.900    18.769    .000
                       +ID 3 05:2105          21.500     .129   14.900    15.256    .000
                        ==========================================================
                        SUM   07:UC-East      34.100     .329   12.267    18.299    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00038-----------------------------------------------------------------------------------------------------
*#-----------------|-------------------Route West Pond-----------------------|
-----------------------
|  ROUTE RESERVOIR ->  |    Requested routing time step =  1.0 min.
|  IN>01:2101          |
| OUT<06:W.Pond        | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                         .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
                         .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
                         .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     -----------------------     (ha)     (cms)     (hrs)       (mm)
      INFLOW > 01:2101         10.000    1.028    12.200     37.301
     OUTFLOW < 06:W.Pond       10.000     .035    15.400     37.300
    OVERFLOW < 07:W.Spill        .000     .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    3.382
                    TIME SHIFT OF PEAK FLOW          (min)=   192.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.2435E+00

R0001:C00039-----------------------------------------------------------------------------------------------------
*#-----------------|-------------------Route East Storage--------------------|
-----------------------
|  ROUTE RESERVOIR ->  |    Requested routing time step =  1.0 min.
|  IN>03:2103          |
| OUT<08:E.Storage     | ========================  OUTLFOW STORAGE TABLE  ========================
---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                         .000 .0000E+00|    .008 .1900E-01|    .099 .2930E-01|    .166 .3600E-01
                         .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     -----------------------     (ha)     (cms)     (hrs)       (mm)
      INFLOW > 03:2103          1.700     .236    12.233     53.777
     OUTFLOW < 08:E.Spill       1.700     .122    12.433     53.776
    OVERFLOW < 09:E.Spill        .000     .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   51.668
                    TIME SHIFT OF PEAK FLOW          (min)=    12.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3270E-01

R0001:C00040-----------------------------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
-----------------------
| ADD HYD              |
| 01:West              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-----------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 02:2102           6.900     .081   13.200    15.631    .000
                       +ID 2 06:W.Pond        10.000     .035   15.400    37.300    .000
                       +ID 3 07:W.Spill         .000     .000     .000      .000    .000  **DRY**
                        ==========================================================
                        SUM   01:West         16.900     .114   13.200    28.453    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00041-----------------------------------------------------------------------------------------------------
*#-----------------|
-----------------------
| SAVE HYD             |   AREA       (ha)=   16.900
| ID=01:West           |   QPEAK      (cms)=    .114 (i)
| DT= 1.00 PCYC=-1     |   TPEAK      (hrs)=  13.200
-----------------------   VOLUME       (mm)=  28.453
  Filename: West.0001
  Comments: West

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

R0001:C00042-----------------------------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to East---------------|
-----------------------
| ADD HYD              |
| 02:East              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-----------------------                          (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 04:2104          10.900     .196   12.900    18.769    .000
                       +ID 2 05:2105          21.500     .129   14.900    15.256    .000
                       +ID 3 08:E.Storage      1.700     .122   12.433    53.776    .000
                       +ID 4 09:E.Spill         .000     .000     .000      .000    .000  **DRY**
                        ==========================================================
                        SUM   02:East         34.100     .327   12.717    18.299    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00043-----------------------------------------------------------------------------------------------------
-----------------------
| SAVE HYD             |   AREA       (ha)=   34.100
| ID=02:East           |   QPEAK      (cms)=    .327 (i)
| DT= 1.00 PCYC=-1     |   TPEAK      (hrs)=  12.717
-----------------------   VOLUME       (mm)=  18.299
  Filename: East.0001
  Comments: East

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

R0001:C00044-----------------------------------------------------------------------------------------------------
*#*************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 25 YEAR Event *****************
*#*************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#              SCS Rainfall Distribution
*
*#*************************************************************************
-----------------------
| MASS STORM           |   Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
| Ptotal= 86.40 mm     |   Comments: 24 hour SCS II storm mass curve
-----------------------

                        Duration of storm        =  24.00 hrs
                        Mass curve time step     =  12.00 min
                        Selected storm time step =   6.00 min
                        Volume of derived storm  =  86.40 mm

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
      hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:06    .000|  4:06    .864|  8:06   1.728|  12:06  97.200|  16:06   2.160|  20:06   1.728
      0:12    .000|  4:12    .864|  8:12   1.728|  12:12  97.200|  16:12   2.160|  20:12   1.728
      0:18    .864|  4:18   1.728|  8:18   2.592|  12:18  17.280|  16:18   2.160|  20:18   1.296
      0:24    .864|  4:24   1.728|  8:24   2.592|  12:24  17.280|  16:24   2.160|  20:24   1.296
      0:30    .864|  4:30   1.728|  8:30   2.592|  12:30  10.800|  16:30   2.160|  20:30   1.296
      0:36    .864|  4:36   1.728|  8:36   2.592|  12:36  10.800|  16:36   2.160|  20:36   1.296
      0:42    .864|  4:42   1.728|  8:42   2.592|  12:42   7.776|  16:42   2.160|  20:42    .864
      0:48    .864|  4:48   1.728|  8:48   2.592|  12:48   7.776|  16:48   2.160|  20:48    .864
      0:54    .864|  4:54   1.728|  8:54   2.592|  12:54   7.344|  16:54   2.160|  20:54   1.296
      1:00    .864|  5:00   1.728|  9:00   2.592|  13:00   7.344|  17:00   2.160|  21:00   1.296
      1:06    .864|  5:06   1.728|  9:06   2.592|  13:06   5.184|  17:06   1.296|  21:06   1.296
      1:12    .864|  5:12   1.728|  9:12   2.592|  13:12   5.184|  17:12   1.296|  21:12   1.296
      1:18    .864|  5:18   1.728|  9:18   2.592|  13:18   4.320|  17:18   1.296|  21:18    .864
      1:24    .864|  5:24   1.728|  9:24   2.592|  13:24   4.320|  17:24   1.296|  21:24    .864
      1:30    .864|  5:30   1.728|  9:30   2.592|  13:30   4.320|  17:30   1.728|  21:30   1.296
      1:36    .864|  5:36   1.728|  9:36   2.592|  13:36   4.320|  17:36   1.728|  21:36   1.296
      1:42    .864|  5:42   1.728|  9:42   2.592|  13:42   4.320|  17:42   1.296|  21:42    .864
      1:48    .864|  5:48   1.728|  9:48   2.592|  13:48   4.320|  17:48   1.296|  21:48    .864
      1:54    .864|  5:54   1.728|  9:54   2.592|  13:54   4.320|  17:54   1.728|  21:54   1.296
      2:00    .864|  6:00   1.728| 10:00   2.592|  14:00   4.320|  18:00   1.728|  22:00   1.296
      2:06    .864|  6:06   1.728| 10:06   2.592|  14:06   4.320|  18:06   1.296|  22:06    .864
      2:12    .864|  6:12   1.728| 10:12   2.592|  14:12   4.320|  18:12   1.296|  22:12    .864
      2:18    .864|  6:18   1.728| 10:18   4.752|  14:18   2.592|  18:18   1.296|  22:18    .864
      2:24    .864|  6:24   1.728| 10:24   4.752|  14:24   2.592|  18:24   1.296|  22:24    .864
      2:30    .864|  6:30   1.728| 10:30   4.752|  14:30   2.592|  18:30   1.296|  22:30   1.296
      2:36    .864|  6:36   1.728| 10:36   4.752|  14:36   2.592|  18:36   1.296|  22:36   1.296
      2:42    .864|  6:42   1.728| 10:42   4.752|  14:42   2.592|  18:42   1.728|  22:42    .864
      2:48    .864|  6:48   1.728| 10:48   4.752|  14:48   2.592|  18:48   1.728|  22:48    .864
      2:54    .864|  6:54   1.728| 10:54   4.752|  14:54   2.592|  18:54   1.296|  22:54   1.296
      3:00    .864|  7:00   1.728| 11:00   4.752|  15:00   2.592|  19:00   1.296|  23:00   1.296
      3:06    .864|  7:06   1.728| 11:06   4.752|  15:06   2.592|  19:06   1.296|  23:06    .864
      3:12    .864|  7:12   1.728| 11:12   4.752|  15:12   2.592|  19:12   1.296|  23:12    .864
      3:18    .864|  7:18   1.728| 11:18   6.480|  15:18   2.160|  19:18   1.728|  23:18    .864
      3:24    .864|  7:24   1.728| 11:24   6.480|  15:24   2.160|  19:24   1.728|  23:24    .864
      3:30    .864|  7:30   1.728| 11:30   9.504|  15:30   2.160|  19:30   1.296|  23:30    .864
      3:36    .864|  7:36   1.728| 11:36   9.504|  15:36   2.160|  19:36   1.296|  23:36    .864
      3:42    .864|  7:42   1.728| 11:42  22.896|  15:42   2.160|  19:42   1.728|  23:42   1.296
      3:48    .864|  7:48   1.728| 11:48  22.896|  15:48   2.160|  19:48   1.728|  23:48   1.296
      3:54    .864|  7:54   1.728| 11:54  47.520|  15:54   2.160|  19:54   1.296|  23:54   1.728
      4:00    .864|  8:00   1.728| 12:00  47.520|  16:00   2.160|  20:00   1.296|  24:00   1.728

-----------------------------------------------------------------------------------------------------
R0001:C00045-----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)----------------|
-----------------------
| CALIB STANDHYD       |   Area    (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
-----------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      5.00         5.00
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=       .50         2.00
     Length            (m)=    100.00        35.00
     Mannings n            =      .013         .150

     Max.eff.Inten.(mm/hr)=     97.20        55.29
                 over (min)=      3.00         9.00
     Storage Coeff.  (min)=      3.18 (ii)    9.26 (ii)
     Unit Hyd. Tpeak (min)=      3.00         9.00
     Unit Hyd. peak  (cms)=       .36          .12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .80          .54      1.285 (iii)
     TIME TO PEAK    (hrs)=     12.20        12.27     12.200
     RUNOFF VOLUME    (mm)=     84.40        28.90     45.551
     TOTAL RAINFALL   (mm)=     86.40        86.40     86.401
     RUNOFF COEFFICIENT   =       .98          .33       .527

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

-----------------------------------------------------------------------------------------------------
R0001:C00046-----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
-----------------------
| CALIB NASHYD         |   Area    (ha)=    6.900   Curve Number    (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
-----------------------   U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=     .258

     PEAK FLOW       (cms)=     .108 (i)
     TIME TO PEAK    (hrs)=   13.200
     DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
     AVERAGE FLOW    (cms)=     .013
     RUNOFF VOLUME   (mm)=   20.798
     TOTAL RAINFALL  (mm)=   86.400
     RUNOFF COEFFICIENT   =     .241

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

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R0001:C00047-----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2103 (East Developed Area)---------------|
-----------------------
| CALIB STANDHYD       |   Area    (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
-----------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.10          .60
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=       .50         2.00
     Length            (m)=    295.00        35.00
     Mannings n            =      .013         .150

     Max.eff.Inten.(mm/hr)=     97.20       118.48
                 over (min)=      6.00        11.00
     Storage Coeff.  (min)=      6.09 (ii)   10.57 (ii)
     Unit Hyd. Tpeak (min)=      6.00        11.00
     Unit Hyd. peak  (cms)=       .19          .11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .16          .13       .287 (iii)
     TIME TO PEAK    (hrs)=     12.22        12.28     12.233
     RUNOFF VOLUME    (mm)=     84.39        51.42     64.611
     TOTAL RAINFALL   (mm)=     86.40        86.40     86.401
     RUNOFF COEFFICIENT   =       .98          .60       .748

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.

-----------------------------------------------------------------------------------------------------
R0001:C00048-----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2104 (East Natural Area)------------|
-----------------------
| CALIB NASHYD         |   Area    (ha)=   10.900   Curve Number    (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
-----------------------   U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=     .563

     PEAK FLOW       (cms)=     .264 (i)
     TIME TO PEAK    (hrs)=   12.900
     DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
     AVERAGE FLOW    (cms)=     .026
     RUNOFF VOLUME    (mm)=   25.030
     TOTAL RAINFALL   (mm)=   86.400
     RUNOFF COEFFICIENT   =     .290

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

-----------------------------------------------------------------------------------------------------
R0001:C00049-----------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2105 (Central Natural Area)------------|
-----------------------
| CALIB NASHYD         |   Area    (ha)=   21.500   Curve Number    (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
-----------------------   U.H. Tp(hrs)=    2.350

     Unit Hyd Qpeak  (cms)=     .349

     PEAK FLOW       (cms)=     .175 (i)
```

```
      TIME TO PEAK    (hrs)=   14.900
      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
      AVERAGE FLOW    (cms)=     .031
      RUNOFF VOLUME    (mm)=   20.469
      TOTAL RAINFALL   (mm)=   86.400
      RUNOFF COEFFICIENT  =     .237

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

R0001:C00050
*#----------------|----Post Development Uncontrolled Flow to Silver Creek----|
| ADD HYD              |
| 06:UC-West           |   ID:NHYD          AREA     QPEAK    TPEAK      R.V.     DWF
                       |                     (ha)     (cms)    (hrs)      (mm)    (cms)
                       |  ID 1 01:2101       10.000    1.285   12.200    45.551    .000
                       | +ID 2 02:2102        6.900     .108   13.200    20.798    .000
                       |  ==========================================================
                       |  SUM   06:UC-West   16.900    1.313   12.200    35.445    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00051
*#----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
| ADD HYD              |
| 07:UC-East           |   ID:NHYD          AREA     QPEAK    TPEAK      R.V.     DWF
                       |                     (ha)     (cms)    (hrs)      (mm)    (cms)
                       |  ID 1 03:2103        1.700     .287   12.233    64.611    .000
                       | +ID 2 04:2104       10.900     .264   12.900    25.030    .000
                       | +ID 3 05:2105       21.500     .175   14.900    20.469    .000
                       |  ==========================================================
                       |  SUM   07:UC-East   34.100     .419   12.267    24.128    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00052
*#----------------|--------------------Route West Pond--------------------------|
| ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
| IN>01:2101         |
| OUT<06:W.Pond      | ========================  OUTLFW STORAGE TABLE  ========================
                       OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                          .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
                          .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
                          .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     ---------------           (ha)     (cms)     (hrs)       (mm)
    INFLOW > 01:2101          10.000    1.285    12.200     45.551
   OUTFLOW < 06:W.Pond        10.000     .038    17.033     45.550
  OVERFLOW < 07:W.Spill         .000     .000      .000      .000

                      TOTAL NUMBER OF SIMULATED OVERFLOWS  =       0
                      CUMULATIVE TIME OF OVERFLOWS  (hours)=     .00
                      PERCENTAGE OF TIME OVERFLOWING    (%)=     .00

                      PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.971
                      TIME SHIFT OF PEAK FLOW          (min)=  290.00
                      MAXIMUM  STORAGE   USED       (ha.m.)=.3044E+00

R0001:C00053
*#----------------|--------------------Route East Storage-----------------------|
| ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
| IN>03:2103         |
| OUT<08:E.Storage   | ========================  OUTLFW STORAGE TABLE  ========================
                       OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                         (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)|   (cms)   (ha.m.)
                          .000 .0000E+00|    .008 .1900E-01|    .099 .2930E-01|    .166 .3600E-01
                          .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     ---------------           (ha)     (cms)     (hrs)       (mm)
    INFLOW > 03:2103          1.700     .287    12.233     64.611
   OUTFLOW < 08:E.Storage     1.684     .166    12.333     64.611
  OVERFLOW < 09:E.Spill         .016     .063    12.333     64.611

                      TOTAL NUMBER OF SIMULATED OVERFLOWS  =       1
                      CUMULATIVE TIME OF OVERFLOWS  (hours)=     .08
                      PERCENTAGE OF TIME OVERFLOWING    (%)=     .09

                      PEAK   FLOW   REDUCTION [Qout/Qin](%)=   57.741
                      TIME SHIFT OF PEAK FLOW          (min)=    6.00
                      MAXIMUM  STORAGE   USED       (ha.m.)=.3600E-01

R0001:C00054
*#----------------|----Post Development Controlled Flow to Silver Creek-------|
| ADD HYD              |
| 01:West              |   ID:NHYD          AREA     QPEAK    TPEAK      R.V.     DWF
                       |                     (ha)     (cms)    (hrs)      (mm)    (cms)
                       |  ID 1 02:2102        6.900     .108   13.200    20.798    .000
                       | +ID 2 06:W.Pond     10.000     .038   17.033    45.550    .000
                       | +ID 3 07:W.Spill      .000     .000     .000      .000    .000  **DRY**
                       |  ==========================================================
                       |  SUM   01:West      16.900     .145   13.200    35.444    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00055
*#----------------|----Post Development Controlled Flow to East----------------|
| ADD HYD              |
| 02:East              |   ID:NHYD          AREA     QPEAK    TPEAK      R.V.     DWF
                       |                     (ha)     (cms)    (hrs)      (mm)    (cms)
                       |  ID 1 04:2104       10.900     .264   12.900    25.030    .000
                       | +ID 2 05:2105       21.500     .175   14.900    20.469    .000
                       | +ID 3 08:E.Storage   1.684     .166   12.333    64.611    .000
                       | +ID 4 09:E.Spill      .016     .063   12.333    64.611    .000
                       |  ==========================================================
                       |  SUM   02:East      34.100     .433   12.800    24.128    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00056
*#----------------|----Post Development Controlled Flow to Northeast Outlet----|
| SAVE HYD             |   AREA       (ha)=   16.900
| ID=01:West           |   QPEAK      (cms)=    .145 (i)
| DT= 1.00 PCYC=-1     |   TPEAK      (hrs)=  13.200
                       |   VOLUME      (mm)=  35.444
  Filename: West.0001
  Comments: West

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

R0001:C00057
*#----------------|----Post Development Controlled Flow to East----------------|
| SAVE HYD             |   AREA       (ha)=   34.100
| ID=02:East           |   QPEAK      (cms)=    .433 (i)
| DT= 1.00 PCYC=-1     |   TPEAK      (hrs)=  12.800
                       |   VOLUME      (mm)=  24.128
  Filename: East.0001
  Comments: East

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

R0001:C00058
*#*********************************************************************************
*#*****************POST-DEVELOPMENT CONTROLLED - 50 YEAR Event *****************
*#*********************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#             SCS Rainfall Distribution

*
*#*********************************************************************************
----------------------
| MASS STORM         |   Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
| Ptotal= 96.00 mm   |   Comments: 24 hour SCS II storm mass curve
----------------------
                         Duration of storm        =  24.00 hrs
                         Mass curve time step     =  12.00 min
                         Selected storm time step =   6.00 min
                         Volume of derived storm  =  96.00 mm

      TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN|  TIME    RAIN
    hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:06    .000|  4:06    .960|  8:06   1.920|  12:06 108.000|  16:06   2.400|  20:06   1.920
      0:12    .000|  4:12    .960|  8:12   1.920|  12:12 108.000|  16:12   2.400|  20:12   1.920
      0:18    .960|  4:18   1.920|  8:18   2.880|  12:18  19.200|  16:18   2.400|  20:18   1.440
      0:24    .960|  4:24   1.920|  8:24   2.880|  12:24  19.200|  16:24   2.400|  20:24   1.440
      0:30    .960|  4:30   1.920|  8:30   2.880|  12:30  12.000|  16:30   2.400|  20:30   1.440
      0:36    .960|  4:36   1.920|  8:36   2.880|  12:36  12.000|  16:36   2.400|  20:36   1.440
      0:42    .960|  4:42   1.920|  8:42   2.880|  12:42   8.640|  16:42   2.400|  20:42    .960
      0:48    .960|  4:48   1.920|  8:48   2.880|  12:48   8.640|  16:48   2.400|  20:48    .960
      0:54    .960|  4:54   1.920|  8:54   2.880|  12:54   8.160|  16:54   2.400|  20:54   1.440
      1:00    .960|  5:00   1.920|  9:00   2.880|  13:00   8.160|  17:00   2.400|  21:00   1.440
      1:06    .960|  5:06   1.920|  9:06   2.880|  13:06   5.760|  17:06   1.440|  21:06   1.440
      1:12    .960|  5:12   1.920|  9:12   2.880|  13:12   5.760|  17:12   1.440|  21:12   1.440
      1:18    .960|  5:18   1.920|  9:18   2.880|  13:18   4.800|  17:18   1.440|  21:18    .960
      1:24    .960|  5:24   1.920|  9:24   2.880|  13:24   4.800|  17:24   1.440|  21:24    .960
      1:30    .960|  5:30   1.920|  9:30   2.880|  13:30   4.800|  17:30   1.920|  21:30   1.440
      1:36    .960|  5:36   1.920|  9:36   2.880|  13:36   4.800|  17:36   1.920|  21:36   1.440
      1:42    .960|  5:42   1.920|  9:42   2.880|  13:42   4.800|  17:42   1.440|  21:42    .960
      1:48    .960|  5:48   1.920|  9:48   2.880|  13:48   4.800|  17:48   1.440|  21:48    .960
      1:54    .960|  5:54   1.920|  9:54   2.880|  13:54   4.800|  17:54   1.920|  21:54   1.440
      2:00    .960|  6:00   1.920|  10:00  2.880|  14:00   4.800|  18:00   1.920|  22:00   1.440
      2:06    .960|  6:06   1.920|  10:06  2.880|  14:06   4.800|  18:06   1.440|  22:06    .960
      2:12    .960|  6:12   1.920|  10:12  2.880|  14:12   4.800|  18:12   1.440|  22:12    .960
      2:18    .960|  6:18   1.920|  10:18  5.280|  14:18   2.880|  18:18   1.440|  22:18    .960
      2:24    .960|  6:24   1.920|  10:24  5.280|  14:24   2.880|  18:24   1.440|  22:24    .960
      2:30    .960|  6:30   1.920|  10:30  5.280|  14:30   2.880|  18:30   1.440|  22:30   1.440
      2:36    .960|  6:36   1.920|  10:36  5.280|  14:36   2.880|  18:36   1.440|  22:36   1.440
      2:42    .960|  6:42   1.920|  10:42  5.280|  14:42   2.880|  18:42   1.920|  22:42    .960
      2:48    .960|  6:48   1.920|  10:48  5.280|  14:48   2.880|  18:48   1.920|  22:48    .960
      2:54    .960|  6:54   1.920|  10:54  5.280|  14:54   2.880|  18:54   1.440|  22:54   1.440
      3:00    .960|  7:00   1.920|  11:00  5.280|  15:00   2.880|  19:00   1.440|  23:00   1.440
      3:06    .960|  7:06   1.920|  11:06  5.280|  15:06   2.880|  19:06   1.440|  23:06    .960
      3:12    .960|  7:12   1.920|  11:12  5.280|  15:12   2.880|  19:12   1.440|  23:12    .960
      3:18    .960|  7:18   1.920|  11:18  7.200|  15:18   2.400|  19:18   1.920|  23:18    .960
      3:24    .960|  7:24   1.920|  11:24  7.200|  15:24   2.400|  19:24   1.920|  23:24    .960
      3:30    .960|  7:30   1.920|  11:30 10.560|  15:30   2.400|  19:30   1.440|  23:30    .960
      3:36    .960|  7:36   1.920|  11:36 10.560|  15:36   2.400|  19:36   1.440|  23:36    .960
      3:42    .960|  7:42   1.920|  11:42 25.440|  15:42   2.400|  19:42   1.920|  23:42   1.440
      3:48    .960|  7:48   1.920|  11:48 25.440|  15:48   2.400|  19:48   1.920|  23:48   1.440
      3:54    .960|  7:54   1.920|  11:54 52.800|  15:54   2.400|  19:54   1.440|  23:54   1.920
      4:00    .960|  8:00   1.920|  12:00 52.800|  16:00   2.400|  20:00   1.440|  24:00   1.920

R0001:C00059
*#----------------|-----------Area 2101 (West Developed Area)---------------|
| CALIB STANDHYD       |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
-------------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      5.00         5.00
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=       .50         2.00
     Length            (m)=    100.00        35.00
     Mannings n             =     .013         .150

     Max.eff.Inten.(mm/hr)=    108.00        66.16
                 over (min)=      3.00         9.00
     Storage Coeff.  (min)=      3.05 (ii)    8.71 (ii)
     Unit Hyd. Tpeak (min)=      3.00         9.00
     Unit Hyd. peak  (cms)=       .37          .13
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .89          .66        1.490 (iii)
     TIME TO PEAK    (hrs)=     12.20        12.27       12.200
     RUNOFF VOLUME    (mm)=     94.00        34.58       52.413
     TOTAL RAINFALL   (mm)=     96.00        96.00       95.999
     RUNOFF COEFFICIENT  =       .98          .36         .546

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  54.0    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.

R0001:C00060
*#----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
| CALIB NASHYD         |   Area     (ha)=    6.900   Curve Number    (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    1.020

     Unit Hyd Qpeak  (cms)=     .258

     PEAK FLOW       (cms)=     .132 (i)
     TIME TO PEAK    (hrs)=   13.200
     DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
     AVERAGE FLOW    (cms)=     .016
     RUNOFF VOLUME    (mm)=   25.304
     TOTAL RAINFALL   (mm)=   96.000
     RUNOFF COEFFICIENT  =     .264

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

R0001:C00061
*#----------------|-----------Area 2103 (East Developed Area)---------------|
| CALIB STANDHYD       |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
-------------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      1.10          .60
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=       .50         2.00
     Length            (m)=    295.00        35.00
     Mannings n             =     .013         .150

     Max.eff.Inten.(mm/hr)=    108.00       137.95
                 over (min)=      6.00        10.00
     Storage Coeff.  (min)=      5.84 (ii)   10.05 (ii)
     Unit Hyd. Tpeak (min)=      6.00        10.00
     Unit Hyd. peak  (cms)=       .19          .11
                                                      *TOTALS*
     PEAK FLOW       (cms)=       .18          .16         .334 (iii)
     TIME TO PEAK    (hrs)=     12.22        12.27       12.233
     RUNOFF VOLUME    (mm)=     93.99        59.69       73.418
     TOTAL RAINFALL   (mm)=     96.00        96.00       95.999
     RUNOFF COEFFICIENT  =       .98          .62         .765

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    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.

R0001:C00062
*#----------------|-----------Area 2104 (East Natural Area)-----------|
| CALIB NASHYD         |   Area     (ha)=   10.900   Curve Number    (CN)= 61.60
| 04:2104       DT= 5.00 |   Ia       (mm)=    9.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=     .740

     Unit Hyd Qpeak  (cms)=     .563

     PEAK FLOW       (cms)=     .324 (i)
     TIME TO PEAK    (hrs)=   12.900
     DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
     AVERAGE FLOW    (cms)=     .031
     RUNOFF VOLUME    (mm)=   30.444
     TOTAL RAINFALL   (mm)=   96.000
     RUNOFF COEFFICIENT  =     .317
```

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

*#-----------------|-----------Area 2105 (Central Natural Area)-------------|
| CALIB NASHYD           |   Area     (ha)=   21.500   Curve Number    (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia       (mm)=    8.700   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .215 (i)
      TIME TO PEAK    (hrs)=   14.800
      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
      AVERAGE FLOW    (cms)=     .037
      RUNOFF VOLUME    (mm)=   25.025
      TOTAL RAINFALL   (mm)=   96.000
      RUNOFF COEFFICIENT   =     .261

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

R0001:C00064-----------------------------------------------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
-------------------------
| ADD HYD              |
| 06:UC-West           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 01:2101          10.000    1.490   12.200    52.413    .000
                      +ID 2 02:2102            6.900     .132   13.200    25.304    .000
                      ================================================================
                        SUM   06:UC-West      16.900    1.525   12.200    41.345    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00065-----------------------------------------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
-------------------------
| ADD HYD              |
| 07:UC-East           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 03:2103          1.700     .334   12.233    73.418    .000
                      +ID 2 04:2104          10.900     .324   12.900    30.444    .000
                      +ID 3 05:2105          21.500     .215   14.800    25.025    .000
                      ================================================================
                        SUM   07:UC-East      34.100     .499   12.267    29.170    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00066-----------------------------------------------------------------------------------------------------------
*#-----------------|-----------------Route West Pond-------------------------|
-------------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>01:2101         |
| OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
------------------------ OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m.)
                         .000 .0000E+00|    .030 .1670E+00|    .038 .3010E+00|    .603 .4620E+00
                         .018 .6100E-01|    .034 .2300E+00|    .042 .3780E+00|   3.086 .6010E+00
                         .025 .1110E+00|    .038 .3010E+00|    .603 .4620E+00|    .000 .0000E+00

      ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
      -----------------------      (ha)     (cms)     (hrs)       (mm)
       INFLOW > 01:2101          10.000    1.490    12.200     52.413
      OUTFLOW < 06:W.Pond        10.000     .041    17.067     52.412
     OVERFLOW < 07:W.Spill         .000     .000      .000       .000

                      TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                      CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                      PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                      PEAK   FLOW   REDUCTION [Qout/Qin](%)=    2.744
                      TIME SHIFT OF PEAK FLOW          (min)=   292.00
                      MAXIMUM  STORAGE   USED       (ha.m.)=.3562E+00

R0001:C00067-----------------------------------------------------------------------------------------------------------
*#-----------------|-----------------Route East Storage----------------------|
-------------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|  IN>03:2103         |
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
------------------------ OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m.)|   (cms)    (ha.m.)
                         .000 .0000E+00|    .008 .1900E-01|    .099 .2930E-01|    .166 .3600E-01
                         .006 .8500E-02|    .099 .2930E-01|    .144 .3600E-01|    .000 .0000E+00

      ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
      -----------------------      (ha)     (cms)     (hrs)       (mm)
       INFLOW > 03:2103           1.700     .334    12.233     73.418
      OUTFLOW < 08:E.Storage      1.621     .166    12.250     73.418
     OVERFLOW < 09:E.Spill         .079     .166    12.250     73.418

                      TOTAL NUMBER OF SIMULATED OVERFLOWS  =        2
                      CUMULATIVE TIME OF OVERFLOWS  (hours)=      .18
                      PERCENTAGE OF TIME OVERFLOWING    (%)=      .21

                      PEAK   FLOW   REDUCTION [Qout/Qin](%)=   49.648
                      TIME SHIFT OF PEAK FLOW          (min)=    1.00
                      MAXIMUM  STORAGE   USED       (ha.m.)=.3601E-01

R0001:C00068-----------------------------------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
-------------------------
| ADD HYD              |
| 01:West              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 02:2102          6.900     .132   13.200    25.304    .000
                      +ID 2 06:W.Pond        10.000     .041   17.067    52.412    .000
                      +ID 3 07:W.Spill         .000     .000     .000      .000    .000  **DRY**
                      ================================================================
                        SUM   01:West        16.900     .172   13.200    41.344    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00069-----------------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)----------------|
-------------------------
| CALIB STANDHYD         |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
-------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       5.00         5.00
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=        .50         2.00
      Length            (m)=     100.00        35.00
      Mannings n            =       .013         .150

      Max.eff.Inten.(mm/hr)=     118.80        78.43
                  over (min)        3.00         8.00
      Storage Coeff.  (min)=       2.94 (ii)    8.22 (ii)
      Unit Hyd. Tpeak (min)=       3.00         8.00
      Unit Hyd. peak  (cms)=        .38          .14
                                                          *TOTALS*
      PEAK FLOW       (cms)=        .98          .81         1.730 (iii)
      TIME TO PEAK    (hrs)=      12.20        12.25        12.200
      RUNOFF VOLUME    (mm)=     103.59        40.57        59.480
      TOTAL RAINFALL   (mm)=     105.60       105.60       105.600
      RUNOFF COEFFICIENT   =        .98          .38          .563

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  54.0     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.

R0001:C00070-----------------------------------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to East---------------|
-------------------------
| ADD HYD              |
| 02:East              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
-------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 04:2104          10.900     .324   12.900    30.444    .000
                      +ID 2 05:2105          21.500     .215   14.800    25.025    .000
                      +ID 3 08:E.Storage      1.621     .166   12.250    73.418    .000
                      +ID 4 09:E.Spill         .079     .166   12.250    73.418    .000
                      ================================================================
                        SUM   02:East        34.100     .513   12.800    29.170    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

R0001:C00071-----------------------------------------------------------------------------------------------------------
-------------------------
| SAVE HYD             |   AREA       (ha)=   34.100
| ID=02:East           |   QPEAK     (cms)=     .513 (i)
| DT= 1.00 PCYC=-1 |   TPEAK     (hrs)=   12.800
-------------------------   VOLUME     (mm)=   29.170
  Filename: East.0001
  Comments: East

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

R0001:C00072-----------------------------------------------------------------------------------------------------------
*#**************************************************************************
*#****************POST-DEVELOPMENT CONTROLLED - 100 YEAR Event ****************
*#**************************************************************************
*
*#   Rainfall Depths per MTO - Basins East of Collingwood
*#              SCS Rainfall Distribution
*
*#**************************************************************************
-------------------
| MASS STORM       |    Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Upd
| Ptotal=105.60 mm |    Comments: 24 hour SCS II storm mass curve
-------------------

                          Duration of storm        =   24.00 hrs
                          Mass curve time step     =   12.00 min
                          Selected storm time step =    6.00 min
                          Volume of derived storm  =  105.60 mm

      TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
     hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
      0:06    .000|   4:06   1.056|   8:06   2.112|  12:06 118.800|  16:06   2.640|  20:06   2.112
      0:12    .000|   4:12   1.056|   8:12   2.112|  12:12 118.800|  16:12   2.640|  20:12   2.112
      0:18   1.056|   4:18   2.112|   8:18   3.168|  12:18  21.120|  16:18   2.640|  20:18   1.584
      0:24   1.056|   4:24   2.112|   8:24   3.168|  12:24  21.120|  16:24   2.640|  20:24   1.584
      0:30   1.056|   4:30   2.112|   8:30   3.168|  12:30  13.200|  16:30   2.640|  20:30   1.584
      0:36   1.056|   4:36   2.112|   8:36   3.168|  12:36  13.200|  16:36   2.640|  20:36   1.584
      0:42   1.056|   4:42   2.112|   8:42   3.168|  12:42   9.504|  16:42   2.640|  20:42   1.056
      0:48   1.056|   4:48   2.112|   8:48   3.168|  12:48   9.504|  16:48   2.640|  20:48   1.056
      0:54   1.056|   4:54   2.112|   8:54   3.168|  12:54   8.976|  16:54   2.640|  20:54   1.584
      1:00   1.056|   5:00   2.112|   9:00   3.168|  13:00   8.976|  17:00   2.640|  21:00   1.584
      1:06   1.056|   5:06   2.112|   9:06   3.168|  13:06   6.336|  17:06   1.584|  21:06   1.584
      1:12   1.056|   5:12   2.112|   9:12   3.168|  13:12   6.336|  17:12   1.584|  21:12   1.584
      1:18   1.056|   5:18   2.112|   9:18   3.168|  13:18   5.280|  17:18   1.584|  21:18   1.056
      1:24   1.056|   5:24   2.112|   9:24   3.168|  13:24   5.280|  17:24   1.584|  21:24   1.056
      1:30   1.056|   5:30   2.112|   9:30   3.168|  13:30   5.280|  17:30   2.112|  21:30   1.584
      1:36   1.056|   5:36   2.112|   9:36   3.168|  13:36   5.280|  17:36   2.112|  21:36   1.584
      1:42   1.056|   5:42   2.112|   9:42   3.168|  13:42   5.280|  17:42   1.584|  21:42   1.056
      1:48   1.056|   5:48   2.112|   9:48   3.168|  13:48   5.280|  17:48   1.584|  21:48   1.056
      1:54   1.056|   5:54   2.112|   9:54   3.168|  13:54   5.280|  17:54   2.112|  21:54   1.584
      2:00   1.056|   6:00   2.112|  10:00   3.168|  14:00   5.280|  18:00   2.112|  22:00   1.584
      2:06   1.056|   6:06   2.112|  10:06   3.168|  14:06   5.280|  18:06   1.584|  22:06   1.056
      2:12   1.056|   6:12   2.112|  10:12   3.168|  14:12   5.280|  18:12   1.584|  22:12   1.056
      2:18   1.056|   6:18   2.112|  10:18   5.808|  14:18   3.168|  18:18   1.584|  22:18   1.056
      2:24   1.056|   6:24   2.112|  10:24   5.808|  14:24   3.168|  18:24   1.584|  22:24   1.056
      2:30   1.056|   6:30   2.112|  10:30   5.808|  14:30   3.168|  18:30   1.584|  22:30   1.584
      2:36   1.056|   6:36   2.112|  10:36   5.808|  14:36   3.168|  18:36   1.584|  22:36   1.584
      2:42   1.056|   6:42   2.112|  10:42   5.808|  14:42   3.168|  18:42   2.112|  22:42   1.056
      2:48   1.056|   6:48   2.112|  10:48   5.808|  14:48   3.168|  18:48   2.112|  22:48   1.056
      2:54   1.056|   6:54   2.112|  10:54   5.808|  14:54   3.168|  18:54   1.584|  22:54   1.584
      3:00   1.056|   7:00   2.112|  11:00   5.808|  15:00   3.168|  19:00   1.584|  23:00   1.584
      3:06   1.056|   7:06   2.112|  11:06   5.808|  15:06   3.168|  19:06   1.584|  23:06   1.056
      3:12   1.056|   7:12   2.112|  11:12   5.808|  15:12   3.168|  19:12   1.584|  23:12   1.056
      3:18   1.056|   7:18   2.112|  11:18   7.920|  15:18   2.640|  19:18   2.112|  23:18   1.056
      3:24   1.056|   7:24   2.112|  11:24   7.920|  15:24   2.640|  19:24   2.112|  23:24   1.056
      3:30   1.056|   7:30   2.112|  11:30  11.616|  15:30   2.640|  19:30   1.584|  23:30   1.056
      3:36   1.056|   7:36   2.112|  11:36  11.616|  15:36   2.640|  19:36   1.584|  23:36   1.056
      3:42   1.056|   7:42   2.112|  11:42  27.984|  15:42   2.640|  19:42   2.112|  23:42   1.584
      3:48   1.056|   7:48   2.112|  11:48  27.984|  15:48   2.640|  19:48   2.112|  23:48   1.584
      3:54   1.056|   7:54   2.112|  11:54  58.080|  15:54   2.640|  19:54   1.584|  23:54   2.112
      4:00   1.056|   8:00   2.112|  12:00  58.080|  16:00   2.640|  20:00   1.584|  24:00   2.112

R0001:C00073-----------------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2101 (West Developed Area)----------------|
-------------------------
| CALIB STANDHYD         |   Area     (ha)=   10.00
| 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
-------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       5.00         5.00
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=        .50         2.00
      Length            (m)=     100.00        35.00
      Mannings n            =       .013         .150

      Max.eff.Inten.(mm/hr)=     118.80        78.43
                  over (min)        3.00         8.00
      Storage Coeff.  (min)=       2.94 (ii)    8.22 (ii)
      Unit Hyd. Tpeak (min)=       3.00         8.00
      Unit Hyd. peak  (cms)=        .38          .14
                                                          *TOTALS*
      PEAK FLOW       (cms)=        .98          .81         1.730 (iii)
      TIME TO PEAK    (hrs)=      12.20        12.25        12.200
      RUNOFF VOLUME    (mm)=     103.59        40.57        59.480
      TOTAL RAINFALL   (mm)=     105.60       105.60       105.600
      RUNOFF COEFFICIENT   =        .98          .38          .563

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  54.0     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.

R0001:C00074-----------------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2102 (Silver Creek Buffer)---------------|
-------------------------
| CALIB NASHYD           |   Area     (ha)=    6.900   Curve Number    (CN)= 52.80
| 02:2102       DT= 5.00 |   Ia       (mm)=    6.500   # of Linear Res.(N)=  3.00
-------------------------   U.H. Tp(hrs)=    1.020

      Unit Hyd Qpeak  (cms)=     .258

      PEAK FLOW       (cms)=     .158 (i)
      TIME TO PEAK    (hrs)=   13.200
      DURATION        (hrs)=   31.100, (dddd|hh:mm:)=   1|07:06
      AVERAGE FLOW    (cms)=     .019
      RUNOFF VOLUME    (mm)=   30.110
      TOTAL RAINFALL   (mm)=  105.600
      RUNOFF COEFFICIENT   =     .285

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

R0001:C00075-----------------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2103 (East Developed Area)---------------|
-------------------------
| CALIB STANDHYD         |   Area     (ha)=    1.70
| 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
-------------------------
                            IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       1.10          .60
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=        .50         2.00
      Length            (m)=     295.00        35.00
      Mannings n            =       .013         .150

      Max.eff.Inten.(mm/hr)=     118.80       156.76
                  over (min)        6.00        10.00
      Storage Coeff.  (min)=       5.62 (ii)    9.62 (ii)
      Unit Hyd. Tpeak (min)=       6.00        10.00
      Unit Hyd. peak  (cms)=        .20          .12
                                                          *TOTALS*
      PEAK FLOW       (cms)=        .20          .19          .378 (iii)
      TIME TO PEAK    (hrs)=      12.22        12.27        12.233
      RUNOFF VOLUME    (mm)=     103.60        68.13        82.323
      TOTAL RAINFALL   (mm)=     105.60       105.60       105.600
      RUNOFF COEFFICIENT   =        .98          .65          .780

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0     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.

R0001:C00076-----------------------------------------------------------------------------------------------------------
*#-----------------|-----------Area 2104 (East Natural Area)-------------|
-------------------------
| CALIB NASHYD           |   Area     (ha)=   10.900   Curve Number    (CN)= 61.60
```

```
| 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
 -------------------------   U.H. Tp(hrs)=     .740

      Unit Hyd Qpeak  (cms)=     .563

      PEAK FLOW       (cms)=     .387 (i)
      TIME TO PEAK    (hrs)=   12.900
      DURATION        (hrs)=   29.300, (dddd|hh:mm:)=   1|05:18
      AVERAGE FLOW    (cms)=     .037
      RUNOFF VOLUME    (mm)=   36.174
      TOTAL RAINFALL   (mm)=  105.600
      RUNOFF COEFFICIENT   =     .343

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

--------------------------------------------------------------------------------------------
R0001:C00077-----------------------------------------------------------------------------------
*#-----------------|-----------Area 2105 (Central Natural Area)-------------|
-------------------------
| CALIB NASHYD           |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
| 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
 -------------------------   U.H. Tp(hrs)=    2.350

      Unit Hyd Qpeak  (cms)=     .349

      PEAK FLOW       (cms)=     .259 (i)
      TIME TO PEAK    (hrs)=   14.800
      DURATION        (hrs)=   40.000, (dddd|hh:mm:)=   1|16:00
      AVERAGE FLOW    (cms)=     .045
      RUNOFF VOLUME    (mm)=   29.890
      TOTAL RAINFALL   (mm)=  105.600
      RUNOFF COEFFICIENT   =     .283

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

--------------------------------------------------------------------------------------------
R0001:C00078-----------------------------------------------------------------------------------
*#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
-------------------------
| ADD HYD              |
| 06:UC-West           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 01:2101          10.000    1.730   12.200    59.480    .000
                       +ID 2 02:2102           6.900     .158   13.200    30.110    .000
                       ================================================================
                       SUM   06:UC-West       16.900    1.773   12.200    47.489    .000

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------
R0001:C00079-----------------------------------------------------------------------------------
*#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
-------------------------
| ADD HYD              |
| 07:UC-East           |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 03:2103           1.700     .378   12.233    82.323    .000
                       +ID 2 04:2104          10.900     .387   12.900    36.174    .000
                       +ID 3 05:2105          21.500     .259   14.800    29.890    .000
                       ================================================================
                       SUM   07:UC-East       34.100     .580   12.267    34.513    .000

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------
R0001:C00080-----------------------------------------------------------------------------------
*#-----------------|--------------------Route West Pond--------------------------|
-------------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|   IN>01:2101        |
| OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
 ------------------------ OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)
                           .000 .0000E+00|   .030 .1670E+00|   .038 .3010E+00|   .603 .4620E+00
                           .018 .6100E-01|   .034 .2300E+00|   .042 .3780E+00|  3.086 .6010E+00
                           .025 .1110E+00|   .038 .3010E+00|   .603 .4620E+00|   .000 .0000E+00

     ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
     -----------------------      (ha)     (cms)     (hrs)       (mm)
      INFLOW > 01:2101          10.000    1.730    12.200     59.480
     OUTFLOW < 06:W.Pond        10.000     .094    14.250     59.479
    OVERFLOW < 07:W.Spill         .000     .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    5.410
                    TIME SHIFT OF PEAK FLOW          (min)=   123.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3857E+00

--------------------------------------------------------------------------------------------
R0001:C00081-----------------------------------------------------------------------------------
*#-----------------|--------------------Route East Storage-----------------------|
-------------------------
|  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
|   IN>03:2103        |
| OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
 ------------------------ OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
                          (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)
                           .000 .0000E+00|   .008 .1900E-01|   .099 .2930E-01|   .166 .3600E-01
                           .006 .8500E-02|   .099 .2930E-01|   .144 .3600E-01|   .000 .0000E+00

     ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
     -----------------------      (ha)     (cms)     (hrs)       (mm)
      INFLOW > 03:2103           1.700     .378    12.233     82.323
     OUTFLOW < 08:E.Storage      1.563     .166    12.200     82.341
    OVERFLOW < 09:E.Spill         .137     .211    12.233     82.323

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        2
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .25
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .28

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   43.890
                    TIME SHIFT OF PEAK FLOW          (min)=   -2.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3600E-01

--------------------------------------------------------------------------------------------
R0001:C00082-----------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
-------------------------
| ADD HYD              |
| 01:West              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 02:2102           6.900     .158   13.200    30.110    .000
                       +ID 2 06:W.Pond        10.000     .094   14.250    59.479    .000
                       +ID 3 07:W.Spill         .000     .000     .000      .000    .000  **DRY**
                       ================================================================
                       SUM   01:West          16.900     .211   13.800    47.488    .000

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------
R0001:C00083-----------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to East---------------|
-------------------------
| ADD HYD              |
| 02:East              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
 ------------------------                      (ha)     (cms)    (hrs)      (mm)    (cms)
                        ID 1 04:2104          10.900     .387   12.900    36.174    .000
                       +ID 2 05:2105          21.500     .259   14.800    29.890    .000
                       +ID 3 08:E.Storage      1.563     .166   12.200    82.341    .000
                       +ID 4 09:E.Spill         .137     .211   12.233    82.323    .000
                       ================================================================
                       SUM   02:East          34.100     .601   12.900    34.514    .000

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------
R0001:C00085-----------------------------------------------------------------------------------
--------------------
| SAVE HYD           |   AREA       (ha)=   34.100
| ID=02:East         |   QPEAK      (cms)=    .601 (i)
| DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=   12.900
 --------------------   VOLUME       (mm)=   34.514
  Filename: East.0001
  Comments: East

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

--------------------------------------------------------------------------------------------
R0001:C00086-----------------------------------------------------------------------------------
--------------------
| FINISH             |
 --------------------
--------------------------------------------------------------------------------------------
********************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
   Simulation ended on 2019-07-25     at 23:01:25
============================================================================================
```

```
00001> 2     Metric units
00002> *#*************************************************************************
00003> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00004> *#  Date        : 01-17-2011
00005> *#  Updated     : 07-25-2019
00006> *#  Modeller    : [J.Proctor/R.Alexander]
00007> *#  Company     : C.F. Crozier & Associates Inc.
00008> *#  License #   :  3737016
00009> *#*************************************************************************
00010> *#J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\Tim.dat
00011> *#*************************************************************************
00012> START               TZERO=[0.0],  METOUT=[2],  NSTORM=[0],  NRUN=[0]
00013> *%                   [  ] <--storm filename, one per line for NSTORM time
00014> *%------------------|-------------------------------------------------------|
00015> *#*************************************************************************
00016> *#*******************POST-DEVELOPMENT CONTROLLED - Timmins Event *******************
00017> *#*************************************************************************
00018> *%------------------|-------------------------------------------------------|
00019> READ STORM          STORM_FILENAME=["tim.stm"]
00020> *%------------------|-------------------------------------------------------|
00021> *#------------------|-----------Area 2101 (West Developed Area)---------------|
00022> *%------------------|-------------------------------------------------------|
00023> CALIB STANDHYD      ID=[1], NHYD=["2101"], DT=[1](min), AREA=[10.0](ha),
00024>                     XIMP=[0.30], TIMP=[0.50], DWF=[0.0](cms), LOSS=[2],
00025>                     SCS curve number CN=[54],
00026>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00027>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00028>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00029>                                          LGI=[100](m), MNI=[0.013], SCI=[0](min),
00030>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00031> *%------------------|-------------------------------------------------------|
00032> *#------------------|------------Area 2102 (Silver Creek Buffer)--------------|
00033> *%------------------|-------------------------------------------------------|
00034> CALIB NASHYD        ID=[2], NHYD=["2102"], DT=[5]min, AREA=[6.9](ha),
00035>                     DWF=[0](cms),  CN/C=[52.8], IA=[6.50](mm),
00036>                     N=[3], TP=[1.02]hrs,
00037>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00038> *%------------------|-------------------------------------------------------|
00039> *#------------------|------------Area 2103 (East Developed Area)--------------|
00040> *%------------------|-------------------------------------------------------|
00041> CALIB STANDHYD      ID=[3], NHYD=["2103"], DT=[1](min), AREA=[1.7](ha),
00042>                     XIMP=[0.40], TIMP=[.65], DWF=[0.0](cms), LOSS=[2],
00043>                     SCS curve number CN=[74],
00044>                     Pervious   surfaces: IAper=[5.00](mm), SLPP=[2.0](%),
00045>                                          LGP=[35](m), MNP=[0.15], SCP=[0](min),
00046>                     Impervious surfaces: IAimp=[2.0](mm), SLPI=[0.5](%),
00047>                                          LGI=[295](m), MNI=[0.013], SCI=[0](min),
00048>                     RAINFALL=[ ,  ,  ,  , ](mm/hr) ,  END=-1
00049> *%------------------|-------------------------------------------------------|
00050> *#------------------|-------------Area 2104 (East Natural Area)------------|
00051> *%------------------|-------------------------------------------------------|
00052> CALIB NASHYD        ID=[4], NHYD=["2104"], DT=[5]min, AREA=[10.9](ha),
00053>                     DWF=[0](cms),  CN/C=[61.6], IA=[9.7](mm),
00054>                     N=[3], TP=[0.74]hrs,
00055>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00056> *%------------------|-------------------------------------------------------|
00057> *#------------------|-----------Area 2105 (Central Natural Area)------------|
00058> *%------------------|-------------------------------------------------------|
00059> CALIB NASHYD        ID=[5], NHYD=["2105"], DT=[5]min, AREA=[21.5](ha),
00060>                     DWF=[0](cms),  CN/C=[53.9], IA=[8.7](mm),
00061>                     N=[3], TP=[2.35]hrs,
00062>                     RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
00063> *%------------------|-------------------------------------------------------|
00064> *#------------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00065> *%------------------|-------------------------------------------------------|
00066> ADD HYD             IDsum=[6], NHYD=["UC-West"], IDs to add=[1+2]
00067> *%------------------|-------------------------------------------------------|
00068> *#------------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00069> *%------------------|-------------------------------------------------------|
00070> ADD HYD             IDsum=[7], NHYD=["UC-East"], IDs to add=[3+4+5]
00071> *%------------------|-------------------------------------------------------|
00072> *#------------------|--------------------Route West Pond---------------------|
00073> *%------------------|-------------------------------------------------------|
00074> ROUTE RESERVOIR     IDout=[6],   NHYD=["W.Pond"],  IDin=[1],
00075>                     RDT=[1](min),
00076>                           TABLE of ( OUTFLOW-STORAGE ) values
00077>                                    (cms) - (ha-m)
00078>                                  [   0.0 ,  0.0  ]
00079>                                  [   0.018, 0.061]
00080>                                  [   0.025, 0.111]
00081>                                  [   0.030, 0.167]
00082>                                  [   0.034, 0.230]
00083>                                  [   0.038, 0.301]
00084>                                  [   0.042, 0.378]
00085>                                  [   0.603, 0.462]
00086>                                  [   3.086, 0.601]
00087>                                  [   -1  ,  -1  ]  (max twenty pts)
00088>                           IDovf=[7], NHYDovf=["W.Spill"]
00089> *%------------------|-------------------------------------------------------|
00090> *#------------------|--------------------Route East Storage------------------|
00091> *%------------------|-------------------------------------------------------|
00092> ROUTE RESERVOIR     IDout=[8],   NHYD=["E.Storage"],  IDin=[3],
00093>                     RDT=[1](min),
00094>                           TABLE of ( OUTFLOW-STORAGE ) values
00095>                                    (cms) - (ha-m)
00096>                                  [ 0.000, 0.0000]
00097>                                  [ 0.006, 0.0085]
00098>                                  [ 0.008, 0.0190]
00099>                                  [ 0.099, 0.0293]
00100>                                  [ 0.144, 0.0360]
00101>                                  [ 0.166, 0.0360]
00102>                                  [   -1  ,  -1  ]  (max twenty pts)
00103>                           IDovf=[9], NHYDovf=["E.Spill"]
00104> *%------------------|-------------------------------------------------------|
00105> *#------------------|----Post Development Controlled Flow to Silver Creek-------|
00106> *%------------------|-------------------------------------------------------|
00107> ADD HYD             IDsum=[1], NHYD=["West"], IDs to add=[2+6+7]
00108> *%------------------|-------------------------------------------------------|
00109> SAVE HYD            ID=[1],   # OF PCYCLES=[-1],  ICASEsh=[1]
00110>                     HYD_COMMENT=["West"]
00111> *%------------------|-------------------------------------------------------|
00112> *#------------------|----Post Development Controlled Flow to East---------------|
00113> *%------------------|-------------------------------------------------------|
00114> ADD HYD             IDsum=[2], NHYD=["East"], IDs to add=[4+5+8+9]
00115> *%------------------|-------------------------------------------------------|
00116> SAVE HYD            ID=[2],   # OF PCYCLES=[-1],  ICASEsh=[1]
00117>                     HYD_COMMENT=["East"]
00118> *%------------------|-------------------------------------------------------|
00119> FINISH
```

```
 ================================================================================
 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222     000    11   77777 ========
 S       W   W   MM MM   H   H    Y Y    MM MM   O   O          2    0   0   11   7   7
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2    0   0   11       7 Ver4.05.0
     S    W W    M   M   H   H     Y     M   M   O   O        222    0   0   11       7  APR 2017
 SSSSS    W W    M   M   H   H     Y     M   M    OOO         2      0   0   11      7   ========
                                                              2      0   0   11     7    # 3737016
        StormWater Management HYdrologic Model                222     000    11    7    ========
 ================================================================================
 ********************************************************************************************
 ***************************************  SWMHYMO Ver4.05.0  ****************************************
 ******************  A single event and continuous hydrologic simulation model  *******************
 ******************     based on the principles of HYMO and its successors      *******************
 ******************                 OTTHYMO-83 and OTTHYMO-89.                  *******************
 ********************************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          *******************
 ******************                  Ottawa,  Ontario: (613) 836-3884           *******************
 ******************                  Gatineau, Quebec: (819) 243-6858           *******************
 ******************                  E-Mail: swmhymo@jfsa.com                   *******************
 ********************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
 ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ********************************************************************************************
 ******************                 ++++++ PROGRAM ARRAY DIMENSIONS ++++++          *******************
 ******************                 Maximum value for ID numbers  :     11         *******************
 ******************                 Max. number of rainfall points: 105408         *******************
 ******************                 Max. number of flow points    : 105408         *******************
 ********************************************************************************************


 ******************************   S U M M A R Y   O U T P U T   ******************************
 ********************************************************************************************
 *                 RUN DATE: 2019-07-25     TIME: 23:03:24     RUN COUNTER: 000010             *
 ********************************************************************************************
 * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\Tim.dat                                                             *
 * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\Tim.out                                                             *
 * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
 *                HYMO\Post\Tim.sum                                                             *
 * User comments:                                                                               *
 * 1:_____________________________________________________________________________________*
 * 2:_____________________________________________________________________________________*
 * 3:_____________________________________________________________________________________*
 ********************************************************************************************


 #*****************************************************************************
 #  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
 #  Date        : 01-17-2011
 #  Updated     : 07-25-2019
 #  Modeller    : [J.Proctor/R.Alexander]
 #  Company     : C.F. Crozier & Associates Inc.
 #  License #   :  3737016
 #*****************************************************************************
 #J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\Tim.dat
 #*****************************************************************************
  RUN#:COMMAND#
 R0001:C00001------------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on        0]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0001 ]
 #*****************************************************************************
 #*****************POST-DEVELOPMENT CONTROLLED - Timmins Event *****************
 #*****************************************************************************
 R0001:C00002------------------------------------------------------------------------------------------
      READ STORM
        Filename = tim.stm
        Comment  = Timmins Storm Event
        [SDT=60.00:SDUR=  12.00:PTOT= 193.00]
 #-----------------|-----------Area 2101 (West Developed Area)---------------|
 R0001:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CALIB STANDHYD          1.0 01:2101          10.00     .884 No_date    7:00  130.32 .675     .000
        [XIMP=.30:TIMP=.50]
        [LOSS= 2 :CN= 54.0]
        [Pervious    area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
        [Impervious  area: IAimp= 2.00:SLPI= .50:LGI= 100.:MNI=.013:SCI=   .0]
 #-----------------|-----------Area 2102 (Silver Creek Buffer)--------------|
 R0001:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CALIB NASHYD            5.0 02:2102           6.90     .270 No_date    7:55   84.10 .436     .000
        [CN= 52.8: N= 3.00: Tp= 1.02]
 #-----------------|-----------Area 2103 (East Developed Area)---------------|
 R0001:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CALIB STANDHYD          1.0 03:2103          1.70     .187 No_date    7:00  165.93 .860     .000
        [XIMP=.40:TIMP=.65]
        [LOSS= 2 :CN= 74.0]
        [Pervious    area: IAper= 5.00:SLPP=2.00:LGP=  35.:MNP=.150:SCP=   .0]
        [Impervious  area: IAimp= 2.00:SLPI= .50:LGI= 295.:MNI=.013:SCI=   .0]
 #-----------------|-----------Area 2104 (East Natural Area)-------------|
 R0001:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CALIB NASHYD            5.0 04:2104          10.90     .580 No_date    7:25   98.35 .510     .000
        [CN= 61.6: N= 3.00: Tp=  .74]
 #-----------------|-----------Area 2105 (Central Natural Area)-------------|
 R0001:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CALIB NASHYD            5.0 05:2105          21.50     .675 No_date   10:35   84.59 .438     .000
        [CN= 53.9: N= 3.00: Tp= 2.35]
 #-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
 R0001:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                 1.0 01:2101          10.00     .884 No_date    7:00  130.32  n/a      .000
                         +    5.0 02:2102           6.90     .270 No_date    7:55   84.10  n/a      .000
                       SUM=   1.0 06:UC-West       16.90    1.076 No_date    7:00  111.45  n/a      .000
 #-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
 R0001:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                 1.0 03:2103           1.70     .187 No_date    7:00  165.93  n/a      .000
                         +    5.0 04:2104          10.90     .580 No_date    7:25   98.35  n/a      .000
                         +    5.0 05:2105          21.50     .675 No_date   10:35   84.59  n/a      .000
                       SUM=   1.0 07:UC-East       34.10   1.166 No_date    9:06   93.04  n/a      .000
 #-----------------|---------------------Route West Pond----------------------|
 R0001:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->      1.0 01:2101          10.00     .884 No_date    7:00  130.32  n/a      .000
                     out <=   1.0 06:W.Pond        10.00     .753 No_date    7:06  130.32  n/a      .000
                overflow <=   1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.4704E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 #-----------------|---------------------Route East Storage--------------------|
 R0001:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->      1.0 03:2103          1.70     .187 No_date    7:00  165.93  n/a      .000
                     out <=   1.0 08:E.Storage     1.68     .166 No_date    6:43  165.94  n/a      .000
                overflow <=   1.0 09:E.Spill        .02     .021 No_date    7:00  165.93  n/a      .000
        {MxStoUsed=.3601E-01  m3, TotOvfVol=.2609E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
 #-----------------|----Post Development Controlled Flow to Silver Creek-------|
 R0001:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                 1.0 02:2102          6.90     .270 No_date    7:55   84.10  n/a      .000
                         +    1.0 06:W.Pond        10.00     .753 No_date    7:06  130.32  n/a      .000
                         +    1.0 07:W.Spill         .00     .000 No_date    0:00     .00  n/a      .000
                       SUM=   1.0 01:West          16.90     .963 No_date    7:07  111.45  n/a      .000
 R0001:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD                1.0 01:West          16.90     .963 No_date    7:07  111.45  n/a      .000
        fname :West.0001
        remark:West
 #-----------------|----Post Development Controlled Flow to East--------------|
 R0001:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                 1.0 04:2104          10.90     .580 No_date    7:25   98.35  n/a      .000
                         +    1.0 05:2105          21.50     .675 No_date   10:35   84.59  n/a      .000
                         +    1.0 08:E.Storage      1.68     .166 No_date    6:43  165.94  n/a      .000
                         +    1.0 09:E.Spill         .02     .021 No_date    7:00  165.93  n/a      .000
                       SUM=   1.0 02:East          34.10    1.178 No_date    9:15   93.04  n/a      .000
 R0001:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD                1.0 02:East          34.10    1.178 No_date    9:15   93.04  n/a      .000
        fname :East.0001
        remark:East
 R0001:C00016------------------------------------------------------------------------------------------
      FINISH
 ------------------------------------------------------------------------------------------
 ********************************************************************************************
      WARNINGS / ERRORS / NOTES
      -------------------------
    Simulation ended on 2019-07-25     at 23:03:24
```

```
 ================================================================================
```

```
00001> ================================================================================
00002>
00003> SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   77777 ========
00004> S       W W W   MM MM   H   H   Y Y    MM MM   O   O           2   0   0  1 1      7  7
00005> SSSSS   W W W   M M M   HHHHH    Y     M M M   O   O          2    0   0    1      7  Ver4.05.0
00006>     S   W W     M   M   H   H    Y     M   M   O   O         222   0   0    1      7  APR 2017
00007> SSSSS    W W    M   M   H   H    Y     M   M    OOO         2      0   0    1      7  ========
00008>                                                            2      0   0    1    7    # 3737016
00009>       StormWater Management HYdrologic Model                222     000    11    7    ========
00010>
00011> ************************************************************************************
00012> ***********************************  SWMHYMO Ver4.05.0  ***********************************
00013> ******************  A single event and continuous hydrologic simulation model  ******************
00014> ******************     based on the principles of HYMO and its successors      ******************
00015> ******************                 OTTHYMO-83 and OTTHYMO-89.                  ******************
00016> ************************************************************************************
00017> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
00018> ******************                 Ottawa,  Ontario: (613) 836-3884            ******************
00019> ******************                 Gatineau, Quebec: (819) 243-6858            ******************
00020> ******************                 E-Mail: swmhymo@jfsa.com                    ******************
00021> ************************************************************************************
00022>
00023> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
00025> ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
00026> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028> ************************************************************************************
00029> ******************                 ++++++ PROGRAM ARRAY DIMENSIONS ++++++       ******************
00030> ******************                 Maximum value for ID numbers  :    11       ******************
00031> ******************                 Max. number of rainfall points: 105408      ******************
00032> ******************                 Max. number of flow points    : 105408      ******************
00033> ************************************************************************************
00034>
00035> ************************************************************************************
00036> ***********************************  SWMHYMO Ver4.05.0  ***********************************
00037> ******************  A single event and continuous hydrologic simulation model  ******************
00038> ******************     based on the principles of HYMO and its successors      ******************
00039> ******************                 OTTHYMO-83 and OTTHYMO-89.                  ******************
00040> ************************************************************************************
00041> ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
00042> ******************                 Ottawa,  Ontario: (613) 836-3884            ******************
00043> ******************                 Gatineau, Quebec: (819) 243-6858            ******************
00044> ******************                 E-Mail: swmhymo@jfsa.com                    ******************
00045> ************************************************************************************
00046>
00047> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00048> ++++++++++++++++++ Licensed user: C.F. Crozier & Associates Inc.          ++++++++++++++++++++
00049> ++++++++++++++++++                 Collingwood          SERIAL#:3737016    ++++++++++++++++++++
00050> ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00051>
00052> ************************************************************************************
00053> ******************                 ++++++ PROGRAM ARRAY DIMENSIONS ++++++       ******************
00054> ******************                 Maximum value for ID numbers  :    11       ******************
00055> ******************                 Max. number of rainfall points: 105408      ******************
00056> ******************                 Max. number of flow points    : 105408      ******************
00057> ************************************************************************************
00058>
00059>
00060> ******************************  D E T A I L E D   O U T P U T  ******************************
00061> ************************************************************************************
00062> *                  RUN DATE: 2019-07-25     TIME: 23:03:24     RUN COUNTER: 000010          *
00063> ************************************************************************************
00064> * Input   file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00065> *                HYMO\Post\Tim.dat                                                 *
00066> * Output  file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00067> *                HYMO\Post\Tim.out                                                 *
00068> * Summary file: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update\SWM\20190718*
00069> *                HYMO\Post\Tim.sum                                                 *
00070> * User comments:                                                                  *
00071> * 1:_____________________________________________________________________________*
00072> * 2:_____________________________________________________________________________*
00073> * 3:_____________________________________________________________________________*
00074> ************************************************************************************
00075>
00076> --------------------------------------------------------------------------------
00077> R0001:C00001------------------------------------------------------------------------
00078> *#*****************************************************************************
00079> *#  Project Name: [Huntingwood Trails]    Project Number: [281-2769]
00080> *#  Date        : 01-17-2011
00081> *#  Updated     : 07-25-2019
00082> *#  Modeller    : [J.Proctor/R.Alexander]
00083> *#  Company     : C.F. Crozier & Associates Inc.
00084> *#  License #   :  3737016
00085> *#*****************************************************************************
00086> *#J:\200\281 ...\2769\Design\July 2019 Update\SWM\20190718 HYMO\Post\Tim.dat
00087> *#*****************************************************************************
00088> ---------------------
00089> | START           | Project  dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00090> ------------------- Rainfall dir.:J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Up
00091>     TZERO =   .00 hrs on       0
00092>     METOUT=   2 (output = METRIC)
00093>     NRUN  = 0001
00094>     NSTORM=   0
00095> --------------------------------------------------------------------------------
00096> R0001:C00002------------------------------------------------------------------------
00097> *#*****************************************************************************
00098> *#*****************POST-DEVELOPMENT CONTROLLED - Timmins Event *****************
00099> *#*****************************************************************************
00100> ---------------------
00101> | READ STORM      |  Filename: J:\200\281 - Huntingwood - Skelton Farm\2769\Design\July 2019 Update
00102> | Ptotal= 193.00 mm|  Comments: Timmins Storm Event
00103> ---------------------
00104>       TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN|   TIME    RAIN
00105>       hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr|  hh:mm   mm/hr
00106>       1:00  15.000|   3:00  10.000|   5:00   5.000|   7:00  43.000|   9:00  23.000|  11:00  13.000
00107>       2:00  20.000|   4:00   3.000|   6:00  20.000|   8:00  20.000|  10:00  13.000|  12:00   8.000
00108>
00109> --------------------------------------------------------------------------------
00110> R0001:C00003------------------------------------------------------------------------
00111> *#-----------------|------------Area 2101 (West Developed Area)---------------|
00112> -------------------------
00113> | CALIB STANDHYD        |   Area    (ha)=   10.00
00114> | 01:2101       DT= 1.00 |   Total Imp(%)=   50.00   Dir. Conn.(%)=   30.00
00115> -------------------------
00116>                              IMPERVIOUS    PERVIOUS (i)
00117>      Surface Area      (ha)=       5.00         5.00
00118>      Dep. Storage      (mm)=       2.00         5.00
00119>      Average Slope      (%)=        .50         2.00
00120>      Length             (m)=     100.00        35.00
00121>      Mannings n             =       .013         .150
00122>
00123>      Max.eff.Inten.(mm/hr)=      43.00        39.41
00124>                   over (min)=       4.00        11.00
00125>      Storage Coeff.  (min)=       4.41 (ii)   11.37 (ii)
00126>      Unit Hyd. Tpeak (min)=       4.00        11.00
00127>      Unit Hyd. peak  (cms)=        .26          .10
00128>                                                          *TOTALS*
00129>      PEAK FLOW       (cms)=        .36          .53          .884 (iii)
00130>      TIME TO PEAK    (hrs)=       7.00         7.02         7.000
00131>      RUNOFF VOLUME    (mm)=     191.00       104.32       130.322
00132>      TOTAL RAINFALL   (mm)=     193.00       193.00       193.000
00133>      RUNOFF COEFFICIENT   =        .99          .54          .675
00134>
00135>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00136>            CN* =  54.0    Ia = Dep. Storage  (Above)
00137>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00138>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00139>
00140> --------------------------------------------------------------------------------
00141> R0001:C00004------------------------------------------------------------------------
00142> *#-----------------|------------Area 2102 (Silver Creek Buffer)--------------|
00143> -------------------------
00144> | CALIB NASHYD          |   Area    (ha)=    6.900   Curve Number   (CN)= 52.80
00145> | 02:2102       DT= 5.00 |   Ia      (mm)=    6.500   # of Linear Res.(N)=  3.00
00146> -------------------------  U.H. Tp(hrs)=    1.020
00147>
00148>      Unit Hyd Qpeak  (cms)=     .258
00149>
00150>      PEAK FLOW       (cms)=     .270 (i)
00151>      TIME TO PEAK    (hrs)=    7.917
00152>      DURATION        (hrs)=   19.083, (dddd|hh:mm:)=   0|19:05
00153>      AVERAGE FLOW    (cms)=     .084
00154>      RUNOFF VOLUME    (mm)=   84.104
00155>      TOTAL RAINFALL   (mm)=  193.000
00156>      RUNOFF COEFFICIENT   =     .436
00157>
00158>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00159>
00160> --------------------------------------------------------------------------------
00161> R0001:C00005------------------------------------------------------------------------
00162> *#-----------------|------------Area 2103 (East Developed Area)---------------|
00163> -------------------------
00164> | CALIB STANDHYD        |   Area    (ha)=    1.70
00165> | 03:2103       DT= 1.00 |   Total Imp(%)=   65.00   Dir. Conn.(%)=   40.00
00166> -------------------------
00167>                              IMPERVIOUS    PERVIOUS (i)
00168>      Surface Area      (ha)=       1.10          .60
00169>      Dep. Storage      (mm)=       2.00         5.00
00170>      Average Slope      (%)=        .50         2.00
00171>      Length             (m)=     295.00        35.00
00172>      Mannings n             =       .013         .150
00173>
00174>      Max.eff.Inten.(mm/hr)=      43.00        65.92
00175>                   over (min)=       8.00        14.00
00176>      Storage Coeff.  (min)=       8.44 (ii)   14.10 (ii)
00177>      Unit Hyd. Tpeak (min)=       8.00        14.00
00178>      Unit Hyd. peak  (cms)=        .14          .08
00179>                                                          *TOTALS*
00180>      PEAK FLOW       (cms)=        .08          .11          .187 (iii)
00181>      TIME TO PEAK    (hrs)=       7.00         7.02         7.000
00182>      RUNOFF VOLUME    (mm)=     191.00       149.22       165.931
00183>      TOTAL RAINFALL   (mm)=     193.00       193.00       193.000
00184>      RUNOFF COEFFICIENT   =        .99          .77          .860
00185>
00186>        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
00187>            CN* =  74.0    Ia = Dep. Storage  (Above)
00188>       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
00189>      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00190>
00191> --------------------------------------------------------------------------------
00192> R0001:C00006------------------------------------------------------------------------
00193> *#-----------------|------------Area 2104 (East Natural Area)-------------|
00194> -------------------------
00195> | CALIB NASHYD          |   Area    (ha)=   10.900   Curve Number   (CN)= 61.60
00196> | 04:2104       DT= 5.00 |   Ia      (mm)=    9.700   # of Linear Res.(N)=  3.00
00197> -------------------------  U.H. Tp(hrs)=     .740
00198>
00199>      Unit Hyd Qpeak  (cms)=     .563
00200>
00201>      PEAK FLOW       (cms)=     .580 (i)
00202>      TIME TO PEAK    (hrs)=    7.417
00203>      DURATION        (hrs)=   17.167, (dddd|hh:mm:)=   0|17:10
00204>      AVERAGE FLOW    (cms)=     .173
00205>      RUNOFF VOLUME    (mm)=   98.346
00206>      TOTAL RAINFALL   (mm)=  193.000
00207>      RUNOFF COEFFICIENT   =     .510
00208>
00209>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00210>
00211> --------------------------------------------------------------------------------
00212> R0001:C00007------------------------------------------------------------------------
00213> *#-----------------|-----------Area 2105 (Central Natural Area)-------------|
00214> -------------------------
00215> | CALIB NASHYD          |   Area    (ha)=   21.500   Curve Number   (CN)= 53.90
00216> | 05:2105       DT= 5.00 |   Ia      (mm)=    8.700   # of Linear Res.(N)=  3.00
00217> -------------------------  U.H. Tp(hrs)=    2.350
00218>
00219>      Unit Hyd Qpeak  (cms)=     .349
00220>
00221>      PEAK FLOW       (cms)=     .675 (i)
00222>      TIME TO PEAK    (hrs)=   10.583
00223>      DURATION        (hrs)=   27.750, (dddd|hh:mm:)=   1|03:45
00224>      AVERAGE FLOW    (cms)=     .182
00225>      RUNOFF VOLUME    (mm)=   84.590
00226>      TOTAL RAINFALL   (mm)=  193.000
00227>      RUNOFF COEFFICIENT   =     .438
00228>
00229>       (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
00230>
00231> --------------------------------------------------------------------------------
00232> R0001:C00008------------------------------------------------------------------------
00233> *#-----------------|----Post Development Uncontrolled Flow to Silver Creek-----|
00234> -------------------------
00235> | ADD HYD               |
00236> | 06:UC-West            |     ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
00237> -------------------------                         (ha)     (cms)    (hrs)      (mm)    (cms)
00238>                          ID 1 01:2101          10.000      .884    7.000   130.322     .000
00239>                         +ID 2 02:2102          6.900       .270    7.917    84.104     .000
00240>                          ========================================================
00241>                         SUM   06:UC-West      16.900     1.076    7.000   111.452     .000
00242>
00243>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00244>
00245> --------------------------------------------------------------------------------
00246> R0001:C00009------------------------------------------------------------------------
00247> *#-----------------|---Post Development Uncontrolled Flow to Northeast Outlet--|
00248> -------------------------
00249> | ADD HYD               |
00250> | 07:UC-East            |     ID:NHYD            AREA     QPEAK    TPEAK      R.V.      DWF
00251> -------------------------                         (ha)     (cms)    (hrs)      (mm)    (cms)
00252>                          ID 1 03:2103           1.700       .187    7.000   165.931     .000
00253>                         +ID 2 04:2104          10.900       .580    7.417    98.346     .000
00254>                         +ID 3 05:2105          21.500       .675   10.583    84.590     .000
00255>                          ========================================================
00256>                         SUM   07:UC-East       34.100     1.166    9.100    93.043     .000
00257>
00258>    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
00259>
00260> --------------------------------------------------------------------------------
00261> R0001:C00010------------------------------------------------------------------------
00262> *#-----------------|--------------------Route West Pond----------------------|
00263> -------------------------
00264> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00265> |  IN>01:2101         |
00266> | OUT<06:W.Pond       | ========================  OUTLFOW STORAGE TABLE  ========================
00267> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00268>                          (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)
00269>                           .000 .0000E+00|   .030 .1670E+00|   .038 .3010E+00|   .603 .4620E+00
00270>                           .018 .6100E-01|   .034 .2300E+00|   .042 .3780E+00|  3.086 .6010E+00
00271>                           .025 .1110E+00|   .038 .3010E+00|   .603 .4620E+00|   .000 .0000E+00
00272>
00273>     ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
00274>     ---------------------       (ha)     (cms)     (hrs)       (mm)
00275>      INFLOW > 01:2101         10.000      .884     7.000    130.322
00276>     OUTFLOW < 06:W.Pond       10.000      .753     7.100    130.320
00277>    OVERFLOW < 07:W.Spill        .000      .000      .000       .000
00278>
00279>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
00280>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
00281>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00
00282>
00283>
00284>                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   85.151
00285>                    TIME SHIFT OF PEAK FLOW          (min)=     6.00
00286>                    MAXIMUM  STORAGE   USED        (ha.m.)=.4704E+00
00287>
00288> --------------------------------------------------------------------------------
00289> R0001:C00011------------------------------------------------------------------------
00290> *#-----------------|--------------------Route East Storage-------------------|
00291> -------------------------
00292> |  ROUTE RESERVOIR -> |    Requested routing time step =  1.0 min.
00293> |  IN>03:2103         |
00294> | OUT<08:E.Storage    | ========================  OUTLFOW STORAGE TABLE  ========================
00295> ---------------------- OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE| OUTFLOW   STORAGE
00296>                          (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)|  (cms)   (ha.m.)
00297>                           .000 .0000E+00|   .008 .1900E-01|   .099 .2930E-01|   .166 .3600E-01
00298>                           .006 .8500E-02|   .099 .2930E-01|   .144 .3600E-01|   .000 .0000E+00
00299>
00300>     ROUTING RESULTS             AREA     QPEAK     TPEAK       R.V.
00301>     ---------------------       (ha)     (cms)     (hrs)       (mm)
00302>      INFLOW > 03:2103         1.700      .187     7.000    165.931
00303>     OUTFLOW < 08:E.Storage    1.684      .166     6.717    165.940
00304>    OVERFLOW < 09:E.Spill       .016      .021     7.000    165.931
00305>
00306>                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        1
00307>                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .43
00308>                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .55
```

```
                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   88.808
                    TIME SHIFT OF PEAK FLOW          (min)=   -17.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.3601E-01

--------------------------------------------------------------------------------------------------------
R0001:C00012-------|-----------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to Silver Creek-------|
------------------------
| ADD HYD              |
| 01:West              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
------------------------                       (ha)     (cms)    (hrs)      (mm)   (cms)
                       ID 1 02:2102          6.900      .270    7.917    84.104    .000
                      +ID 2 06:W.Pond       10.000      .753    7.100   130.320    .000
                      +ID 3 07:W.Spill        .000      .000     .000      .000    .000  **DRY**
                      ================================================================
                      SUM   01:West         16.900      .963    7.117   111.450    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00013-------------------------------------------------------------------------------------------
--------------------
| SAVE HYD          |   AREA       (ha)=   16.900
| ID=01:West        |   QPEAK     (cms)=     .963 (i)
| DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=    7.117
--------------------   VOLUME       (mm)=  111.450
  Filename: West.0001
  Comments: West

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

--------------------------------------------------------------------------------------------------------
R0001:C00014-------|-----------------------------------------------------------------------------------
*#-----------------|----Post Development Controlled Flow to East--------------|
------------------------
| ADD HYD              |
| 02:East              |   ID:NHYD            AREA     QPEAK    TPEAK      R.V.     DWF
------------------------                       (ha)     (cms)    (hrs)      (mm)   (cms)
                       ID 1 04:2104          10.900      .580    7.417    98.346    .000
                      +ID 2 05:2105          21.500      .675   10.583    84.590    .000
                      +ID 3 08:E.Storage      1.684      .166    6.717   165.940    .000
                      +ID 4 09:E.Spill         .016      .021    7.000   165.931    .000
                      ================================================================
                      SUM   02:East          34.100     1.178    9.250    93.042    .000

   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------------------------------
R0001:C00015-------------------------------------------------------------------------------------------
--------------------
| SAVE HYD          |   AREA       (ha)=   34.100
| ID=02:East        |   QPEAK     (cms)=    1.178 (i)
| DT= 1.00 PCYC=-1 |   TPEAK      (hrs)=    9.250
--------------------   VOLUME       (mm)=   93.042
  Filename: East.0001
  Comments: East

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

--------------------------------------------------------------------------------------------------------
R0001:C00016-------------------------------------------------------------------------------------------
--------------------
| FINISH            |
--------------------
--------------------------------------------------------------------------------------------------------
********************************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
   Simulation ended on 2019-07-25     at 23:03:24
========================================================================================================
```

APPENDIX E

SWM Facility Preliminary Design Info

CROZIER CONSULTING ENGINEERS

HUNTINGWOOD TRAILS - WEST SWM POND DESIGN

Project:	Huntingwood Trail
Project No.:	281-2769
File:	Pond Hydraulic Design
Design by:	J. Proctor/R.Alexander
Date:	1-Jan-11
Updated:	July 2019

Pond Stage - Storage - Discharge Calculations

E.D. Orifice Diameter:	0.130 m			
E.D. Orifice Invert Elevation:	181.3 m			
Rect weir length	m	Emergency Spill Elev.	182.6 m	
Rect weir invert	m	Emerg Spill Bot. Width	3 m	
Weir Elevation Above PP:	m	Trap. Side Slopes	5 :1	H:V
Extended Detention Depth:	181.65 m			

Elev. (m)	Depth Above PP (m)	Area (sqm)	Storage Volume (cu.m)	ED Orifice Discharge (cu.m/s)	Rect. Weir Discharge* (cu.m/s)	Emerg. Weir Ave. Width (m)	Emerg. Weir Discharge (cu.m/s)	Total Discharge (cu.m/s)	Storage (ha-m)
181.30	0.00	1780	0	0.0000	0.000	0.00	0.000	0.000	0.000
181.35	0.05	1867	91	0.0000	0.000	0.00	0.000	0.000	0.009
181.40	0.10	1953	187	0.0070	0.000	0.00	0.000	0.007	0.019
181.45	0.15	2040	286	0.0110	0.000	0.00	0.000	0.011	0.029
181.50	0.20	2127	391	0.0138	0.000	0.00	0.000	0.014	0.039
181.55	0.25	2213	499	0.0162	0.000	0.00	0.000	0.016	0.050
181.60	0.30	2300	612	0.0182	0.000	0.00	0.000	0.018	0.061
181.65	0.35	2387	729	0.0201	0.000	0.00	0.000	0.020	0.073
181.70	0.40	2473	851	0.0218	0.000	0.00	0.000	0.022	0.085
181.75	0.45	2560	976	0.0233	0.000	0.00	0.000	0.023	0.098
181.80	0.50	2647	1107	0.0248	0.000	0.00	0.000	0.025	0.111
181.85	0.55	2733	1241	0.0262	0.000	0.00	0.000	0.026	0.124
181.90	0.60	2820	1380	0.0275	0.000	0.00	0.000	0.028	0.138
181.95	0.65	2907	1523	0.0288	0.000	0.00	0.000	0.029	0.152
182.00	0.70	2993	1671	0.0300	0.000	0.00	0.000	0.030	0.167
182.05	0.75	3080	1822	0.0311	0.000	0.00	0.000	0.031	0.182
182.10	0.80	3167	1979	0.0323	0.000	0.00	0.000	0.032	0.198
182.15	0.85	3253	2139	0.0333	0.000	0.00	0.000	0.033	0.214
182.20	0.90	3340	2304	0.0344	0.000	0.00	0.000	0.034	0.230
182.25	0.95	3427	2473	0.0354	0.000	0.00	0.000	0.035	0.247
182.30	1.00	3513	2647	0.0364	0.000	0.00	0.000	0.036	0.265
182.35	1.05	3600	2824	0.0373	0.000	0.00	0.000	0.037	0.282
182.40	1.10	3687	3007	0.0383	0.000	0.00	0.000	0.038	0.301
182.45	1.15	3773	3193	0.0392	0.000	0.00	0.000	0.039	0.319
182.50	1.20	3860	3384	0.0401	0.000	0.00	0.000	0.040	0.338
182.55	1.25	3947	3579	0.0410	0.000	0.00	0.000	0.041	0.358
182.60	1.30	4033	3779	0.0418	0.000	3.00	0.000	0.042	0.378
182.65	1.35	4120	3982	0.0427	0.000	3.25	0.057	0.099	0.398
182.70	1.40	4207	4191	0.0435	0.000	3.50	0.173	0.216	0.419
182.75	1.45	4293	4403	0.0443	0.000	3.75	0.340	0.384	0.440
182.80	1.50	4380	4620	0.0451	0.000	4.00	0.558	0.603	0.462
182.85	1.55	4467	4841	0.0459	0.000	4.25	0.829	0.875	0.484
182.90	1.60	4553	5067	0.0466	0.000	4.50	1.154	1.200	0.507
182.95	1.65	4640	5296	0.0474	0.000	4.75	1.534	1.582	0.530
183.00	1.70	4727	5531	0.0481	0.000	5.00	1.973	2.021	0.553
183.05	1.75	4813	5769	0.0488	0.000	5.25	2.472	2.521	0.577
183.10	1.80	4900	6012	0.0496	0.000	5.50	3.033	3.083	0.601

CROZIER
CONSULTING ENGINEERS

Project: Huntingwood
Project No.: 281-2769
File: Pond Hydraulic Design
Design by: J. Proctor/R.Alexander
Date: January 2011
Updated: July 2019

EXTENDED DETENTION SPECIFICATIONS - PRELIMINARY WEST POND DESIGN

Extended Detention Volume (Area x runoff from 25mm event)		870
t (drawdown time - seconds, *hours in italics*)	*24.0*	86400
Ao (cross section area of orifice - sqm)		0.012
h (maximum water elevation above orifice for extended detention- m)		0.35
C (discharge coefficient)		0.64
Ap (average surface area for extended detention - sqm)		2500

t = 2*Ap*(h^0.5)/(C*Ao*(g*2)^0.5)

Ao = 0.01207705 m d = 124 mm

Extended Detention Orifice Diameter (as designe d = **130** mm

CROZIER CONSULTING ENGINEERS

Project:	Huntingwood Trail
Project No.:	281-2769
File:	U/G Hydraulic Design
Design by:	J. Proctor/R.Alexander
Date:	January 2011
Updated:	July 2019

East Underground Stage-Storage

Lower Orifice Outlet Diameter =	0.075	m	Bottome of Underground Storage =	184	
Lower Orifice invert elevation =	184		**Top of underground storage =**	184.95	
High Orifice Outlet Diameter =	0.300		**Maximum ponding elevation =**	186.15	
Higher Orifice invert elevation =	184.4		Orifice Plate Coefficient	0.63	
Pipe Length =	250	m	Orifice Tube Coefficient	0.8	
Tank Area =	250	m2			
Tank Void	0.8				

$Q = CA\sqrt{2gh}$

Elevation	Pipe Flow Area	Pipe Storage	Tank Storage	Total	Head above centroid	Discharge	Head above higher centroid	Discharge	Total Discharge
	m2	m3	m3	m3	m	L/s	m	L/s	L/s
184.00	0	0	0	0	0.00	0.00	0.00	0.00	0.00
184.05	0.01	2.5	10	12.5	0.01	1.38	0.00	0.00	1.38
184.10	0.04	10	20	30	0.06	3.08	0.00	0.00	3.08
184.15	0.07	17.5	30	47.5	0.11	4.14	0.00	0.00	4.14
184.20	0.11	27.5	40	67.5	0.16	4.97	0.00	0.00	4.97
184.25	0.14	35	50	85	0.21	5.68	0.00	0.00	5.68
184.30	0.19	47.5	60	107.5	0.26	6.32	0.00	0.00	6.32
184.35	0.23	57.5	70	127.5	0.31	6.89	0.00	0.00	6.89
184.40	0.27	67.5	80	147.5	0.36	7.42	0.00	0.00	7.42
184.45	0.32	80	90	170	0.41	7.92	0.00	0.00	7.92
184.50	0.36	90	100	190	0.46	8.38	0.00	0.00	8.38
184.55	0.41	102.5	110	212.5	0.51	8.83	0.00	0.00	8.83
184.60	0.45	112.5	120	232.5	0.56	9.25	0.05	44.11	53.35
184.65	0.49	122.5	130	252.5	0.61	9.65	0.10	62.38	72.03
184.70	0.53	132.5	140	272.5	0.66	10.03	0.15	76.40	86.43
184.75	0.57	142.5	150	292.5	0.71	10.41	0.20	88.21	98.62
184.80	0.6	150	160	310	0.76	10.77	0.25	98.63	109.39
184.85	0.62	155	170	325	0.81	11.11	0.30	108.04	119.15
184.90	0.64	160	180	340	0.86	11.45	0.35	116.70	128.15
184.95	0.64	160	190	350	0.91	11.78	0.40	124.75	136.53
185.00	0.64	160	200	360	0.96	12.09	0.45	132.32	144.42
185.05	0.64	160	210	370	1.01	12.41	0.50	139.48	151.88
185.10	0.64	160	220	380	1.06	12.71	0.55	146.29	158.99
185.15	0.64	160	230	390	1.11	13.00	0.60	152.79	165.79

Brief Stormceptor Sizing Report - East Lands

Project Information & Location			
Project Name	Huntingwood Trails	**Project Number**	281-2769
City	Collingwood	**State/ Province**	Ontario
Country	Canada	**Date**	7/22/2019
Designer Information		**EOR Information (optional)**	
Name	Rebecca Alexander	**Name**	
Company	C.F. Crozier & Associates	**Company**	
Phone #	705-446-3510	**Phone #**	
Email	ralexander@cfcrozier.ca	**Email**	

Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

Site Name	East Lands
Target TSS Removal (%)	80
TSS Removal (%) Provided	86
Recommended Stormceptor Model	STC 750

The recommended Stormceptor Model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

Stormceptor Sizing Summary		
Stormceptor Model	**% TSS Removal Provided**	**% Runoff Volume Captured Provided**
STC 300	79	95
STC 750	86	98
STC 1000	86	98
STC 1500	86	98
STC 2000	88	99
STC 3000	88	99
STC 4000	90	99
STC 5000	90	99
STC 6000	92	99
STC 9000	94	100
STC 10000	94	100
STC 14000	95	100
StormceptorMAX	Custom	Custom

Sizing Details

Drainage Area	
Total Area (ha)	2.0
Imperviousness %	60.0

Rainfall	
Station Name	OWEN SOUND MOE
State/Province	Ontario
Station ID #	6132
Years of Records	40
Latitude	44°35'N
Longitude	80°56'W

Water Quality Objective	
TSS Removal (%)	80.0
Runoff Volume Capture (%)	90.00
Oil Spill Capture Volume (L)	
Peak Conveyed Flow Rate (L/s)	
Water Quality Flow Rate (L/s)	

Up Stream Storage	
Storage (ha-m)	Discharge (cms)
0.000	0.000
0.017	0.011
0.034	0.025

Up Stream Flow Diversion	
Max. Flow to Stormceptor (cms)	

Particle Size Distribution (PSD)
The selected PSD defines TSS removal

Fine Distribution		
Particle Diameter (microns)	Distribution %	Specific Gravity
20.0	20.0	1.30
60.0	20.0	1.80
150.0	20.0	2.20
400.0	20.0	2.65
2000.0	20.0	2.65

Notes

• Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules.
• Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed.
• For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance.

For Stormceptor Specifications and Drawings Please Visit:
http://www.imbriumsystems.com/technical-specifications

APPENDIX F

OMB Background Material

ONTARIO MUNICIPAL BOARD
Commission des affaires municipales de l'Ontario

Huntingwood Trails (Collingwood) Ltd. Has appealed to the Ontario Municipal Board under subsection 22(7) of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, from Council's neglect to enact a proposed amendment to the Official Plan for the Official Plan for the Town of Collingwood to remove lands legally described as Part of Lots 47, 48, and 49, Concession 12, from the Mountain Road West Corridor Secondary Plan Study Area and designate the lands for development

Approval Authority File No. D09111
O.M.B. File No. PL120784

JOINT WITNESS STATEMENT OF

Christopher F. Crozier, P.Eng. and Jonathan M. Proctor, P.Eng

C.F CROZIER & ASSOCIATES INC.

We will present factual and expert opinion engineering evidence, specifically on the topics of water and wastewater servicing and stormwater management. Our testimony will address Issues 3, 4, 8, 11, 14(a) and (b), and 15. We will address the subject of natural hazards (Issue 16) under a separate Joint Witness Statement.

Christopher F. Crozier, P.Eng., Consulting Engineer

I am a Professional Consulting Engineer registered by the Professional Engineers of Ontario with twenty-three (23) years of experience. I am the President of CF Crozier & Associates Inc., a consulting engineering firm which I founded in 2004 that now operates offices in Collingwood and Milton, Ontario.
I hold a Bachelor of Engineering and Management from McMaster University (1990).

Over my career, I have specialized in servicing and stormwater management, including natural hazard management, for the land development industry and have completed engineering design for residential and commercial/industrial developments throughout Southern Ontario, with a greater focus in the Collingwood area over the past ten years.

My qualifications, education and experience are set out in my *curriculum vitae*, which is attached as **Attachment 1**. My signed Acknowledgment of Expert's Duty form is **Attachment 2** to this Witness Statement.

Jonathan M. Proctor, P.Eng.

I am a Professional Engineer registered by the Professional Engineers of Ontario with seven (7) years of industry experience. I work as a Project Engineer with CF Crozier & Associates Inc. in the firm's Collingwood Office. I hold a Bachelor of Science in Engineering (Honours Program, 2006) from the University of Guelph where I specialized in Water Resource Engineering.

Over my career, I have specialized in servicing, stormwater management including natural hazard management, for the land development industry and have completed engineering design for residential and commercial/industrial developments.

My qualifications, education and experience are set out in my *curriculum vitae*, which is attached as **Attachment 3**. My signed Acknowledgment of Expert's Duty form is **Attachment 4** to this Witness Statement.

Retainer

CF Crozier & Associates Inc. was retained in 2008 to provide engineering services related to water and wastewater servicing and stormwater management in connection with planning applications relating to the development of a 49 hectare property legally described as Part of Lots 47, 48 and 49, Concession 12, Town of Collingwood, referred to as the "Huntingwood Trails Development" or the "Subject Property".

Our office initiated an investigation into the drainage conditions and servicing requirements of the Subject Property. The scope of our work included review of relevant background reports and servicing "record drawings", field visits and measurements, calculations, computer modeling and results interpretation.

Based on our findings, we prepared a report entitled "Functional Servicing & Stormwater Management Report" Huntingwood Trails (Collingwood) Ltd. (Crozier, January 2011). This report, along with input of other team members (including planning and environmental disciplines), led to preparation of the conceptual development plan and supported the Official Plan Amendment (OPA) application.

Previous Studies and Background Information

We prepared a "Functional Servicing & Stormwater Management Report" for the proposed Huntingwood Trails development in January 2011 (the "Servicing Report"). The report is attached to this Witness Statement as **Attachment 5**. Further information from our office was also provided in response to comments received by NVCA and Town of Collingwood (**Attachment 6**).

The proposed Huntingwood development will be fully serviced by way of the Town of Collingwood municipal water and wastewater systems. Wastewater servicing connections, on an interim basis, can be made to the existing pumping station at Silver Glen Preserve, and ultimately, to the planned pumping station, approved as part of the plan of subdivision called "Preserve at Georgian Bay" by Consulate Development (Ontario) Inc. ("Consulate") located on the north side of Highway 26. Municipal water supply will be provided from an existing watermain located on Silver Creek Drive and Silver Glen Boulevard. Details are outlined in the attached Servicing Report.

The Consulate pumping station is planned on the north side of Highway 26 in proximity to the subject lands. Implementation of the Consulate pumping station is a condition of approval of the Preserve at Georgian Bay subdivision.

Huntingwood Trails will also incorporate stormwater management via two independent stormwater management (SWM) facilities treating drainage from the east and west halves of the site as bisected by Silver Creek. The conceptual SWM facilities have been sized to provide water quantity control and water quality control, meeting the "Enhanced Protection" (Level 1) per Ministry of Environment (2003) standard.

Issues and Opinions

Our opinions and the reasons for those opinions follow.

> ***Issue 3:*** *Does the OPA have regard to sections 2(f) [related to sewage and water services] of the Planning Act?*
>
> **Issue 4:** *Is the OPA consistent with sections 1.1.1(g) of the Provincial Policy Statement 2005 [the "PPS"]?*

In our opinion, the OPA has regard for the adequate provision and efficient use of sewage and water services as required by s.2(f) of the *Planning Act*. It is also our opinion that the OPA is consistent with the requirement in s.1.1.1(g) of the PPS to ensure that necessary water and wastewater infrastructure is available to meet current and projected needs.

As described above and in the Servicing Report, provision of services to Huntingwood Trails can be achieved through connection to existing adjacent infrastructure. Municipal water services are currently available to service the subject lands. Connection to the existing 300 mm trunk municipal watermain on Silver Creek Drive and the existing 150 mm watermain on Silver Glen Boulevard is available. The Huntingwood development is also capable of connecting to the existing Silver Glen Preserve sewage pumping station on an interim basis, with an

eventual connection to the planned Consulate pumping station on the north side of Highway 26.

Thus, the proposed servicing conforms to the relevant policies of PPS and the Town OP.

> **Issue 8:** *Does the OPA conform with the policies of the Town of Collingwood Official Plan listed below? Section 3.5 Municipal Services, Section 3.5.1 Goals, Section 3.5.2 Objectives, and Section 3.5.3 Policies.*

It is our opinion that the servicing proposed for Huntingwood Trails meets the goals set out in Section 3.5.1 by following a logical staging program and representing good financial planning.

From a water supply perspective, Huntingwood Trails will connect directly to the existing municipal watermain network requiring no extension or upgrade to the watermain system. This is unlike areas further to the south within the Mountain Road West Corridor (MWRC) Area which require significant upgrades such as a new reservoir, trunk watermain and the establishment of a new pressure zone as outlined on Schedule E1 of the OP and described in "Servicing Study for Land Acquired under County Restructuring in the Town of Collingwood" (Tatham, 1994) and "Mair Mills Water Servicing Class Environmental Assessment Schedule B, Phase 1 & 2" (Ainley Group, 2012).

From a wastewater perspective, a regional pumping station in the vicinity of Silver Creek in the northwest area of Collingwood has been proposed since 1994. This regional pumping station can now be recognized in connection with the Consulate development to the north of the Subject Property. While the Consulate pumping station is subject to further detailed design through the course of its implementation, its principle has been established and approved through the draft plan approval of the Consulate development. As noted above, wastewater servicing of the Huntingwood development can be achieved through a connection to this pumping station.

There no need for extension of services external to the subject lands that have not already been either constructed or planned. For example, connection of Huntingwood Trails to the existing Silver Glen pumping station will afford a cost recovery mechanism to the original developer of the Silver Glen Preserve subdivision. This is set out in the Site Plan Agreement between the Town of Collingwood and Silver Glen Preserve Development Corporation as a municipal "best-effort" clause associated with the "Oversizing Works" of the pumping station forcemain. Cost sharing is also anticipated in the use of the Silver Glen pumping station on an interim basis as this station remains in private ownership until such time as Silver Glen Preserve is built-out and the station transferred to the municipality. Furthermore, the Consulate pumping station will be entirely

"developer-driven", with the developer(s) bearing all financial costs. Introducing additional units (i.e. Huntingwood) to the existing and planned sewage pumping station infrastructure will reduce pro-rata costs and represents good financial planning consistent with the goals of Section 3.5.1.

It is our opinion that the servicing proposed within the Huntingwood OPA conforms with the objectives for municipal services Section 3.5.2 of the Town OP.

These objectives encourage progressive, staged development from existing built up areas, minimizing the need for major service extensions while respecting environmental constraints.

The proposed development implements the recommendations of the "Servicing Study for Land Acquired under County Restructuring in the Town of Collingwood" (Tatham, 1994). While the 1994 Servicing Study examined areas throughout the Town of Collingwood which are outside and or unrelated to the Subject Property, the 1994 study did speak to the West Collingwood area (denoted Area G1) containing the Subject Property. This area would require implementation of a regional pumping station which was illustrated directly north of the Subject Property near Silver Creek on the Consulate property in an area that was subsequently determined to be a Provincially Significant Wetland (PSW) (Consulate, 2007). Through the course of the draft approval process of the Consulate development, the Consulate pumping station was repositioned to respect the PSW. The Huntingwood Trails wastewater system will utilize the Consulate regional pumping station, thus reflecting the implementation of the 1994 Servicing Study recommendations as it pertains to sanitary servicing. The design and construction of the Consulate pumping station will proceed regardless of the Huntingwood Trails development. The design and implementation of the pumping station may be subject to a private developer-driven Class EA process (MEA, 2000, Amended 2007, 2011). The design will consider the servicing requirements of Area G1, which includes the Subject Property. The utilization of the Consulate regional pumping station by Huntingwood Trails will result in a more cost efficient utilization of this servicing infrastructure.

The proposed water servicing for Huntingwood Trails also respects the recommendations of the 1994 Servicing Study as evidenced on Plan WAT1 of said study and also Schedule E1 of the OP.

The proposed development will meet the objective of optimizing the opportunity for the provision of full municipal services (Section 3.5.2(2)) and provide public benefit to the Town by allowing for the extension of municipal services to the existing, partially serviced, estate lot subdivision to the east of the subject lands ("The Forest"). This will be accomplished through the construction of a sanitary sewer within the Huntingwood development, adequately sized to accept wastewater from "The Forest" should the Town elect to extend services into "The Forest" at some point in the future. Public benefits from the Huntingwood development will also

include the provision of a secondary watermain connection to provide an additional level of redundancy and security in the Municipal water distribution system.

The proposed servicing of Huntingwood Trails will proceed in a progressive manner by way of connection to the Silver Glen Preserve pumping station (interim) and then the Consulate pumping station, while minimizing need of "major servicing extensions" thus satisfying Objective 3 (Section 3.5.3(3)).

With respect to Objective 4, financing of the new municipal services proposed for Huntingwood Trails will be borne by the Developer, save and except any future over-sizing needed to accommodate existing development such as "The Forest" There is no proposed infrastructure which requires municipal financing, nor is there need for upgrades to existing infrastructure solely as a result of the Huntingwood Trails Development.

It is recognized that upgrades to existing infrastructure within the Town are required in the future as new development proceeds within Service Area 1, 2 and 3 including the Subject Property. These infrastructure upgrades as a result of new development are identified in the Town of Collingwood Development Charges Background Study (Watson, 2009). These infrastructure upgrades are financially addressed by way of the Town Development Charge By-Law.

It is understood that the existing Black Ash Creek sewage pumping station and forcemain will require improvements as development proceeds in Service Areas 1, 2 and 3. The need for improvements to this pump station were noted in the 1994 Servicing Study; they were further included in the 2004 Development Charges Background Study (CN Watson and Associates Ltd.). These works were omitted in the current Development Charges Study (Watson, 2009). Subsequent work completed by our firm for proposed development in Service Area 1 (Black Ash Village, 2013) has concluded that the improvements are expected to be required to service existing approved developments in Service Area 1 and 2 before the end of the Development Charge Study forecast period. The upgrade to the Black Ash Creek pump station and forcemain rests with the proposed and currently approved development in Collingwood's West End.

In our opinion, the storm drainage system proposed for the development addresses Objective 5. The proposed development of Huntingwood Trails respects areas of environmental sensitivity as determined on-site by the Huntingwood Trails environmental consultants. The subject lands do not exhibit river valley characteristics.

It is also our opinion that the servicing proposed for the subject lands conforms with Policy 3.5.3 of the Town OP, which states:

> *It is the intent of the Official Plan that no major forms of new development be permitted unless adequate municipal water, sanitary sewer and storm sewer facilities are available. Furthermore, it is the intent that new development generally be contiguous to existing built-up areas to avoid leap-frogging over un-developed lands.*
>
> ...
>
> *Schedules E- Municipal Service Areas and E1 – Municipal services Plan are intended to provide a guide in planning for future servicing improvements and new development but need not be rigidly interpreted. An amendment to the map schedules shall not be required to facilitate an alternative servicing/development approach preferred by the municipality as the result of more detailed engineering analysis.*

The proposed development of the Huntingwood Trails site is bounded by existing or approved development, and is contiguous to existing built-up areas.

As described above and in the Servicing Report, adequate municipal services currently exist and additional sewage services will be developed in the future to service the proposed development. Recent development and approvals of properties in close proximity to the Subject Property, including Silver Glen Preserve and the Consulate development, facilitate sanitary services which will be shared with the Huntingwood site.

> **Issue 11:** *Is it appropriate to relocate the subject lands from Service Area 3 to Service Area 2 on Schedule E of the Town's Official Plan?*

Schedules E and E1 (Municipal Services Areas and Municipal Services Plan, respectively) of the Town OP separate the Town into Service Areas and conceptually delineates the existing and proposed water and sewer services required to service those areas. The subject lands are currently identified in Service Area 3; however, it is our opinion that they should be relocated to Service Area 2, as they more closely meet the definition for Service Area 2.

Service Area 2 is defined within the Town OP Section 3.6.2 as follows:

> *Service Area 2 consists of predominantly vacant lands adjacent to Service Area 1 and represents the area beyond the existing built-up area to which municipal services can most easily/efficiently be extended to facilitate new development.*

...

Development may proceed in Service Area 2 on the basis of engineering studies confirming the feasibility, location and magnitude of required servicing extensions and when a developer(s) is willing to provide the required water supply, sanitary sewage disposal and/or stormwater management facilities.

Service Area 3 is defined in Section 3.6.3 as follows:

Service Area 3 is situated within the Mountain Road West Corridor where, in some areas, new development is constrained by the availability of only partial or private services and where an upgrade to full municipal services is dependent upon significant improvements to the Town's existing servicing infrastructure, particularly sanitary sewage services. It is also an area, however, where a number of residential subdivisions already have received approval on the basis of partial services, and development pressures are increasing due to the prospect of increasing recreational resort development in the Town of The Blue Mountains to the west.

The subject lands more closely meet the characteristics of Service Area 2 than Service Area 3 because of the continuity with Service Area 1 to the immediate east and the availability of existing and planned services which can be extended to service the Subject Lands. This extension can be easily and efficiently completed given their close proximity to the Subject Lands. The Developer is prepared to provide the required water, sanitary and storm services at its cost, subject development approvals.

In our opinion, the Subject Property should not be included within Service Area 3, as presently reflected in the Schedule E of the OP, notwithstanding that the subject lands currently lie within the Mountain Road West Corridor Secondary Plan Area ("MRWC Area"). The lands do not otherwise meet the characteristics set out in Area 3. Servicing is not constrained and the site will not be developed on partial or private services. Furthermore it is not dependent on significant improvements to the Town's existing servicing infrastructure. The lands should not be included in Area 3 merely because of their current location within the Mountain Road West Corridor (although we do note that the Official Plan application does propose removing the lands from the secondary plan area). They should only be included in this area if they also meet the characteristics of the servicing structure of this area. They do not. Therefore, the Service Area boundaries of Schedule E should be modified accordingly.

It is also our opinion that the Huntingwood Trails Development will not have an impact on the ability of the Town to service other lands south of the Georgian Trail including the remainder of Service Area G1.

> ***Issue 14a:*** *Is there a need for the following comprehensive studies to be prepared prior to the approval of the OPA:*
>
> *a) a comprehensive review of the municipal water system and sanitary servicing system for the Mountain Road West Corridor Secondary Plan Area?*

In our opinion, there is no need for a comprehensive examination of the entire water and sanitary servicing system of the MRWC Secondary Plan Area prior to the approval of the OPA for the Huntingwood development.

In relation to the overall MRWC Area which exceeds 1000 hectares, the subject lands represent less than 5% of the total area. Huntingwood Trails is located in the northern limits of the Secondary Plan area within water Pressure Zone 1. Services required for Huntingwood Trails are either already present, or planned/approved.

This contrasts with the lands located in southerly portion of the MRWC Area near Mountain Road. These lands, represented as Area A and G3 (Tatham, 1994) require more substantive servicing, which include the establishment of a new water pressure zone (Zone 3), new water reservoir and booster station and new sewage pumping stations. The servicing requirements of Huntingwood Trails are independent of these more complicated and involved servicing requirements of the south end of the MWRC Area. Their implementation is not needed by Huntingwood and the servicing proposed for Huntingwood does not undermine the ability to service the rest of the MRWC Area.

It is also our understanding other development in the MWRC Area, such as Mair Mills Estates, have received development approvals prior to the preparation of a comprehensive servicing review for the entire MWRC Area.

Further, in our opinion, the servicing of the Huntingwood property will not compromise the completion of any future servicing studies that should be deemed necessary in association with the preparation of the MRWC Secondary Plan.

Given the geographic location and size of Huntingwood Trails and the servicing independence it has from the balance of the MRWC Area, in our opinion, there is no need for a comprehensive servicing review of the entire MRWC Area prior to the approval of the OPA.

Issue 14b: *Is there a need for the following comprehensive studies to be prepared prior to the approval of the OPA:*

b) a Silver Creek sub-watershed Plan for the Mountain Road West Corridor Secondary Plan Area

In our opinion, there is no need for a Silver Creek sub-watershed Plan for the MRWC Area as a prerequisite for the approval of the proposed OPA.

The Silver Creek watershed encompasses an area of over 26 square kilometers (CCL, 1989) with its headwaters originating on the Niagara Escarpment. The Huntingwood site lies at the downstream limits of the watershed, 0.8 km from the river mouth at Georgian Bay, representing less than 1% of the area of the watershed catchment.

A plan showing the overall limits of the watershed, the location of the MRWC Area and the Subject Property has been reviewed. Other watercourses/systems within the MRWC Area including Black Ash Creek, Princeton Shores Wetland Complex, Cranberry Marsh and Watercourse 1 (GSCA, 1993) also comprise a portion of the Secondary Plan area.

Silver Creek lies within the Town of Collingwood and Town of Blue Mountains. Development within the Silver Creek watershed, be it existing or approved, has primarily occurred in both municipalities within the mid to upper reaches of the watershed. Huntingwood Trails lies within the lower portion of the Silver Creek watershed.

As described in our Servicing Report, Silver Creek divides the Subject Property into east and west micro drainage area catchments. On the west side, the lands tend to drain toward Silver Creek, as overland flow following a northeast direction. On the east side of Silver Creek, little micro drainage is tributary to Silver Creek. In fact, for the majority of the Subject Property on the east side of Silver Creek, drainage is in a north east direction away from Silver Creek. For these lands, micro drainage is influenced by un-drained depressions and drainage ditches or swales which intercept surface drainage and direct it to watercourses which are tributary to Georgian Bay via Princeton Shore Boulevard or Bartlett Boulevard.

There are limited drainage areas external to the subject lands that contribute drainage to the east and west micro drainage networks due, in part, to the historic embankment associated with the former rail line (currently the Georgian Trail) which bounds the southern portion of the subject lands and isolates them from surface flow contributions from the upstream watershed.

It is our opinion that effective and appropriate stormwater management is feasible for the Subject Lands. The stormwater management concept proposed for

Huntingwood Trails, which is based on the conceptual development plan, is described in detail in the Servicing Report. Given the independence of the east and west sides of the Subject Lands from a stormwater perspective as described above, the proposed stormwater management system consists of two end-of-pipe stormwater management facilities that will discharge to the respective pre-development outlet. Each facility has been sized to ensure that it will be capable of accommodating runoff from the development and treating the runoff for water quantity and quality control meeting the Enhanced Protection (Level 1) water quality standard (MOE, 2003).

Stormwater management blocks have been shown on the Concept Plan for illustrative purposes; the OPA itself does not specify the SWM blocks given they are a permitted uses under the proposed land use designations. The final location and size of the SWM blocks will be determined at the detailed design stages of development.

In our opinion, completion of a comprehensive sub-watershed study of Silver Creek, in advance of the OPA is not necessary. It poses an onerous requirement on a development proposal which is situated at arguably the most downstream location of the entire watershed and represents a very small geographic component. Much development within the watershed that has been recently approved lies outside of the MWRC Area and outside of the jurisdiction of the Town of Collingwood.

The Town of Collingwood and NVCA have commented that a sub-watershed study of Silver Creek in advance of the proposed OPA per their letters of April 21, 2011 and April 29, 2011 respectfully. They have suggested the sub-watershed study is needed to confirm potential opportunities for regional stormwater facilities for the development of the MRWC Area, which could potentially be located on the Subject Property. We have examined this possibility and have concluded that regional SWM on Huntingwood Trails would be not be feasible. The constraints posed by existing development on the east and west side (Silver Glen Preserve and The Forest subdivision), the Georgian Trail, and the environmental lands to the south do not afford opportunity to utilize the Subject Property for regional SWM.

Likewise, it is entirely inappropriate to utilize Silver Creek as a conduit to convey untreated runoff from future upstream development into a central "on-line" regional SWM facility within the subject lands ("On-line" SWM facility refers to a stormwater pond situated within the channel of Silver Creek, thereby interrupting the natural flow of water and sediment within the river system, treating the flow and then discharging the flow downstream). The practice of "on-line" ponds has been strongly discouraged for over twenty years by review agencies given their negative environmental impact.

In our opinion, the stormwater management strategy proposed for the Huntingwood development will not compromise or negatively influence any future sub-watershed study initiatives, which may be required for the Silver Creek watershed. As such, the

proposed OPA can proceed in advance of any future sub-watershed study of Silver Creek.

> ***Issue 15:*** *Has the Appellant demonstrated that the OPA is consistent with the water quality and quantity policies of the PPS (Policy 2.2) and in conformity with the relevant policies of the Town's Official Plan? In particular, has it been demonstrated that there is appropriate protection, improvement or restoration of the quality and quantity of water on and adjacent to the site in accordance with Section 2.2 of the PPS?*

In our opinion, the servicing and stormwater management strategy of the proposed OPA for the Huntingwood development is consistent with Section 2.2 of the Provincial Policy Statement, 2005 (the "PPS") and conforms with the relevant policies of the Town OP concerning protection of the quality and quantity of water.

The proposed development will rely upon full municipal services. There is no reliance on private waste disposal systems; there is no reliance on groundwater taking. This represents sustainable water management practices.

The hydrologic functionality of the surface water features of the Subject Lands has been identified; the natural heritage features have been identified by Huntingwood Trails' environmental consultants who have confirmed that they are being appropriately protected.

The proposed stormwater management system for the Huntingwood development is based on the design criteria outlined by the Ministry of Environment Planning and Design Manual (2003). The proposed design is supported by hydrologic modeling prepared in a manner consistent with previously approved developments in the Town of Collingwood. The proposed stormwater management strategy/solutions protect surface and groundwater features and their hydrologic functions by meeting Provincial water quality and quantity control requirements. Water balancing for wetlands has been incorporated into the Huntingwood Trails proposal in order to maintain hydrologic function of the Provincially Significant Wetlands.

The proposed stormwater management approach will accommodate setbacks from sensitive water features including Silver Creek and sensitive environmental features, such as the onsite wetlands.

Huntingwood Trails will incorporate Low Impact Development (LID) stormwater management techniques minimizing impervious areas and maximizing infiltration. These measures, along with Best Management Practices (BMPs), will serve to protect water quality and will be implemented through the detailed design stage as the plan proceeds with approvals required by way of the Planning Act.

The proposed stormwater management for the subject lands is planned taking into account the requirements of the Ministry of Transportation, given that stormwater runoff from the subject lands will eventually cross Highway 26, a Provincial highway (albeit under the jurisdiction of the Town of Collingwood under the Connecting Link Program).

The stormwater management for the subject lands will be designed and finalized at the detailed design stage of the planning process.

List of Documents and Reports to Be Relied On

We may rely upon the following documentation in support of our evidence:

- Functional Servicing & Stormwater Management Report, Huntingwood Trails (Collingwood) Inc., (Crozier, January 2011);
- Natural Hazards Study, Huntingwood Trails (Collingwood), (Crozier, January 2011);
- Black Ash Sanitary Pump Station Uncommitted Hydraulic Reserve Capacity (Crozier, February 2013);
- Town of Collingwood Review Comments (April 21,2011);
- Nottawasaga Valley Conservation Authority Comments (April 29, 2011);
- Response Letter to Town of Collingwood (Crozier, July 22 2011);
- Response Letter to NVCA (Crozier, July 22, 2011);
- Servicing Plan for Municipal Restructuring, Nottawasaga Township (CC Tatham & Associates Inc, 1994);
- Huntingwood Trails Supplemental Drainage & Servicing Plans (Crozier, September 2013);
- The Preserve at Georgian Bay Stormwater and Servicing Reports and Schedules (Crozier, 2007);
- Conditions of Draft Plan Approval for Consulate Development (2007, Amended 2010, 2013);
- Silver Glen Preserve Stormwater and Servicing Implementation Reports and Engineering Design (Crozier, 2006);
- Development Site Plan Agreement between the Corporation of the Town of Collingwood and Silver Glen Preserve Corporation (2006);
- Mair Mills Water Servicing Class Environmental Assessment Schedule B Phase 1 & 2, Collingwood Public Utilities (Ainley Group, March 2012);
- Development Charge Background Study, Town of Collingwood (CN Watson & Associates Ltd., 2004);
- 2009 Development Charge Background Study, Town of Collingwood (Watson & Associates, 2009);
- Municipal Class Environmental Assessment, Municipal Engineers Association (2000, Amended 2007, 2011); and
- Relevant municipal and provincial documentation;

Address and Contact Information

40 Huron Street, Suite 301, Collingwood, Ontario
T: 705 446-3510
E: ccrozier@cfcrozier.ca, jproctor@cfcrozier.ca

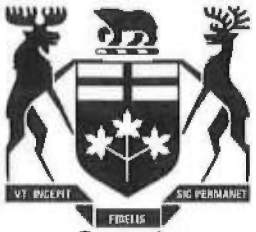




September 4, 2013

September 4, 2013

Ontario Municipal Board
Commission des affaires municipales
de l'Ontario



ISSUE DATE: July 31, 2014 **CASE NO(S).:** PL120784

Huntingwood Trails (Collingwood) Ltd. has appealed to the Ontario Municipal Board under subsection 22(7) of the *Planning Act*, R.S.O. 1990, c. P.13, as amended, from Council's neglect to enact a proposed amendment to the Official Plan for the Town of Collingwood to remove lands legally described as Part of Lots 47, 48 and 49, Concession 12, from the Mountain Road West Corridor Secondary Plan Study Area and designate the lands for development
(Approval Authority File No. D09111)
OMB File No. PL120784

Heard: June 26, 2014 in Collingwood, Ontario

APPEARANCES:

Parties	**Counsel**
Huntingwood Trails (Collingwood) Ltd.	S. Rosenthal M. McDermid
Town of Collingwood	L.F. Longo
County of Simcoe	M. Green S. Hahn
Nottawasaga Valley Conservation Authority	K.C. Hill

DECISION DELIVERED BY M. CARTER-WHITNEY AND ORDER OF THE BOARD

[1] On January 28, 2011, Huntingwood Trails (Collingwood) Ltd ("Applicant") applied for an Official Plan Amendment ("OPA") of the Town of Collingwood Official Plan ("Town OP") to permit development of a 436 unit residential community on 48.97 hectares ("ha") of lands legally described as Part of Lots 47, 48 and 49, Concession 12 ("subject property") in the Town of Collingwood ("Town"), County of Simcoe ("County").

[2] The Town Council failed to make a decision on the OPA application within 180 days of the date of the application being filed. On June 28, 2012, the Applicant filed an appeal, under s. 22(7) of the *Planning Act*, of Council's failure to make a decision to the Ontario Municipal Board ("Board").

[3] At the commencement of the hearing, the parties advised that they had reached a settlement agreement. Mr. Longo, counsel for the Town, advised the Board that after the settlement was reached, it took some time to secure approval from the Town and County Councils. While the public was informed of the settlement as soon as possible, in June 2014, confidentiality among the parties was required prior to that in order to achieve a mediated resolution.

[4] The Board heard evidence concerning the settlement agreement from David Slade, who was qualified as an expert land use planner, and from Johnathan Proctor, who was qualified as an expert in the area of water resource engineering and natural hazard issues. While the Board had granted participant status to a number of individuals at a pre-hearing conference, only the following participants testified at the hearing: Donald Avery, on behalf of the Blue Mountain Watershed Trust Foundation ("Foundation"); Carlo Palermo; and Jim Dalziel.

[5] Mr. Slade provided details of the revised OPA arising from the settlement. He described the subject property, noting that it includes the following significant environmental features: Silver Creek; the Silver Creek Provincially Significant Wetlands complex ("PSWs"); and Category 1 and 2 Woodlands. He said there is an existing single family dwelling on the property, which is generally vacant with the exception of minor agricultural use (grazing cattle) in recent years. Under the Town OP, the current land use designations on the subject property are Rural, Rural Residential and Environmental Protection. He also described the adjacent properties, which include the Silver Glen condominium development to the east and the Forest subdivision to the west.

[6] Mr. Slade gave an overview of the changes to the development proposal as a result of the settlement agreement, and provided the Board with a detailed review of the provisions of the revised OPA. He noted that the subject lands are proposed to be redesignated to the Residential and Environmental Protection designations under the Town OP, with a substantial portion of the subject property being removed from having any development potential and placed in the Environmental Protection designation, as shown in Schedule 'A2' to the revised OPA, attached as Attachment 1. Mr. Slade said that this would leave two areas proposed for development: a 2.7 ha area on the east side of the subject property that was proposed for development in the original proposal ("Development Area #1"); and a 9.4 ha area on the west side of the subject property that has been reduced in size relative to the original proposal ("Development Area #2"). The total number of units proposed for the subject property, including both development areas, has been reduced from 436 to a maximum of 179 units (up to 67 units in Development Area #1 and 112 units in Development Area #2). Development Area #1 is proposed for medium density development to a maximum of 25 units per gross ha, and Development Area #2 is proposed for low density development to a maximum of 12 units per gross ha.

[7] Mr. Slade noted that Development Area #1, which is in the Town's Municipal Service Area 2, may be developed and serviced in advance of Development Area #2, which is in Municipal Service Area 3 and requires further review. He stated that access and servicing to Development Area #1 would occur from the adjacent Silver Glen development to the east, noting that the Applicant's engineering consultant had determined there is sufficient surplus water and sanitary sewer servicing capacity to accommodate the proposed 67 units. He said that the engineering studies had indicated that Development Area #2 also could be serviced using existing infrastructure after additional studies are prepared and improvements are made.

[8] Mr. Slade testified that all of the remaining lands on the subject property, a total of 75.3 % of the site, are proposed to be dedicated to the Town. Under the agreement, 21.9 ha of the lands (44.8% of the site) are to be dedicated to the Town when

Development Area #1 is developed, including PSWs and land with environmental features on the east side of the subject property. When Development Area #2 is developed, 14.9 ha of the lands (30.5% of the site) are to be dedicated to the Town, including the Silver Creek flood plain and buffer lands on the west side of the subject property. He also stated that, prior to development proceeding, further studies would be required with respect to: mitigation of any negative impacts on the natural heritage features or their ecological functions; natural hazard assessment; and species at risk. In relation to Development Area #2, the Applicant also would be required to submit: a water and sanitary sewer servicing strategy; a stormwater management plan that includes a strategy for addressing Silver Creek drainage patterns and spill areas; and a transportation study to be circulated to the Ministry of Transportation for review and comment.

[9] Mr. Slade provided his opinion that the revised OPA is consistent with the policies of the Provincial Policy Statement, 2014 ("PPS"), and conforms to the Growth Plan for the Greater Golden Horseshoe, 2006 ("Growth Plan") and the current Official Plan of the County of Simcoe ("County OP"). He also stated that, in his opinion, the revised OPA represents good planning and is in the public interest.

[10] With respect to the PPS, Mr. Slade noted that the revised OPA is consistent with its policies directing growth to settlement areas, promoting the efficient use of land and existing infrastructure, and providing a range of housing densities under policy 1.1.3. He also testified that the designation of lands within the Environmental Protection designation and the dedication of 75.3% of the subject property to the Town is consistent with the 2.1 natural heritage policies, 2.2 water policies, and 3.1 natural hazard policies in the PPS.

[11] In providing his opinion that the revised OPA conforms to the Growth Plan, Mr. Slade noted that the Town is defined as a primary settlement area under the Growth Plan and referred the Board to policy 6.3.2.1, which permits development to be approved in settlement areas in excess of what is needed to accommodate the

distribution of population and employment forecasts in Schedule 7 of the Growth Plan, provided the development meets the criteria set out in that section. The Minutes of Settlement (filed as Exhibit 2, Tab 2) state that the parties agree that Development Area #1and the portion of Development Area #2 currently designated Rural Residential One, which Mr. Slade testified are on "lands for urban uses" as of January 19, 2012, are permitted to be approved in excess of what is needed to accommodate the forecasts in Schedule 7. The Minutes of Settlement further state that the parties agree that the approval of an additional population of 300 people for the remaining 7.6 ha portion of Development Area #2 meets the requirements and criteria of policy 6.3.2.2 of the Growth Plan. Mr. Slade provided his opinion that the revised OPA conforms to policies 6.3.2.1 and 6.3.2.2 of the Growth Plan.

[12] Mr. Slade noted that the Board partially approved policies 3.5.10 and 3.5.11 of the County OP on April 15, 2014 in case no. PL091167. He stated that, due to a subsequent further settlement, the entirety of policies 3.5.10 to 3.5.13 have now been approved by the Board, resulting in a maximum population figure of 20,000 for the County. Mr. Slade provided his opinion that the revised OPA conforms to policies 3.5.10 to 3.5.13 and the allocation of 300 persons meets the criteria of those policies. He also testified that the County and the Town support the allocation of 300 persons to the proposed development.

[13] Mr. Slade directed the Board to s. 11.5 of the Town OP, which sets out guidelines and criteria for the preparation of a secondary plan review of the Mountain Road West Corridor. He provided his opinion that it would not be necessary to commence a secondary plan review prior to the proposed development on the subject property because the engineering studies indicate that both development areas can be serviced using existing infrastructure once approved. He testified that the subject lands could be developed independently with no prejudice to the secondary plan review.

[14] While the participants were satisfied with some aspects of the settlement agreement, they continued to express some concerns about the proposed development.

[15] Mr. Avery testified on behalf of the Foundation, which had been granted special participant status to call an environmental consultant to give evidence on buffers between wetlands and residential development or any other development and site alteration on the property that could harm the ecological functions of the wetlands. He said that a consultant had been retained but she would not provide evidence as there had not been sufficient time for her to study the revised OPA.

[16] Mr. Avery stated that the preservation of wetlands and the quality or width of buffers depends on the measures put in place to prevent negative effects from human access, and the balance between human access and the preservation of sensitive natural areas can best be accomplished by the creation of a management plan. He testified that the Foundation has obtained agreement that such a plan will be prepared at the appropriate time for lands that are transferred from private ownership to the public realm. He said that the Foundation supported the transfer of the land to public ownership.

[17] However, Mr. Avery expressed concern that vehicle access to the proposed development areas may be permitted through lands designated Environmental Protection, stating that an access road could constitute a negative buffer that would encroach on the protected area. He also expressed concern about the lack of information provided to the Foundation concerning the settlement prior to June 6, 2014 when the Foundation was informed that an agreement had been reached.

[18] Mr. Palermo, a resident of the Forest subdivision west of the subject property, expressed support for the modification providing for single family detached dwellings adjacent to the Forest subdivision, although he maintained that the proposed density would be higher than the density of the existing subdivision. Mr. Palermo also raised concerns about the Silver Creek flood plain on the subject property, noting the presence of a drainage ditch is adjacent to existing properties on Silver Creek Drive and a culvert under the existing road. He said there is water in the ditch during most of the year and, during the spring, he has observed water rise above the culvert and flood onto the road

and beyond. He expressed concern that changes to the subject property may create flooding issues along Silver Creek Drive.

[19] Mr. Proctor responded specifically to Mr. Palermo's concerns about drainage, stating that he had been engaged with this project since 2008 and had monitored the impacts of spring drainage and extreme rainfalls on the subject property over this time. He said he is familiar with the drainage ditch to which Mr. Palermo referred, and that it drains water across the rear of the Silver Creek Drive lots into the Silver Creek drainage system on the subject property. He testified that the Applicant has plans to accommodate the drainage through to Silver Creek so that there will be no impact on the properties on Silver Creek Drive. He noted that the revised OPA would require that Silver Creek drainage patterns be addressed, and that the Applicant would work with the Town and the Nottawasaga Valley Conservation Authority in the course of obtaining future approvals. He provided his opinion that it would be possible to meet the requirements of policy 3.1 of the PPS in relation to natural hazards.

[20] Mr. Dalziel is a director of the Silver Glen condominium corporation east of the subject property. He noted that the revised OPA states that vehicular access and servicing for Development Area #1 "shall occur from the adjacent residential development to the east". He stated his understanding that the condominium road is private and expressed concern that there is an assumption that access to this development area would be granted, noting that the Applicant had not approached the condominium corporation about the issue of access. He raised concerns about increasing construction and regular traffic through the Silver Glen condominium property. Under cross-examination, Mr. Dalziel acknowledged that the Applicant would be required to contact the condominium corporation at the appropriate time in relation to road layouts and connections to private roads on the Silver Glen condominium property.

[21] During the hearing, the parties advised the Board of two typographical errors in the revised OPA filed as Exhibit 2, Tab 1. Following the hearing, Mr. Longo provided a corrected revised version of the OPA, attached as Attachment 1.

[22] Having reviewed the provisions of the revised OPA and considered all of the evidence before it, the Board finds that the revised OPA is consistent with the PPS and conforms to the policies of the Growth Plan and the County OP. The Board is satisfied that the concerns raised by the participants either have been addressed by the evidence provided by Mr. Slade and Mr. Proctor, or will be addressed by the Applicant in the course of obtaining future required approvals.

ORDER

[23] The appeal is allowed in part and the Town of Collingwood Official Plan is amended as set out in Attachment 1 to this Order, and as amended is approved.

"M. Carter-Whitney"

M. CARTER-WHITNEY
MEMBER

ATTACHMENT 1

PART B—THE AMENDMENT

INTRODUCTORY STATEMENT

All of this part of the document entitled "Part B — The Amendment" consisting of the following text constitutes Amendment No. to the Official Plan of the Town of Collingwood.

DETAILS OF THE AMENDMENT

The Official Plan is hereby amended as follows;

Item 1: **Official Plan Schedule 'A' Land Use** is hereby amended by redesignating the subject lands from the "Rural, Rural Residential and Environmental Protection" designations to the "Residential and Environmental Protection" designations for those lands recognized as Part of Lots 47, 48 and 49, Concession 12 (formerly Township of Nottawasaga), Town of Collingwood, County of Simcoe as indicated on the attached schedule A-1.

Item 2: **Official Plan Schedule 'A2' Land Use Detail** attached hereto is hereby inserted as a new schedule to the Town of Collingwood Official Plan.

Item 3: **Official Plan Schedule 'B' Environmental Protection** is hereby amended by redesignating a portion of the subject lands from the Category 1 Woodland designation to the Category 2 Woodland designation and designating new Category 1 Woodland and Category 1 Wetlands as indicated on the attached schedule B-1.

Item 4: **Official Plan Schedule 'C' Residential Densities** is hereby amended by redesignating the subject lands to the "Low Density Residential" and "Medium Density Residential" designation(s) for those lands recognized as Part of Lots 47, 48 and 49, Concession 12 (formerly Township of Nottawasaga), Town of Collingwood, County of Simcoe as indicated on the attached schedule C-1.

Item 5: **Official Plan Schedule 'E' Municipal Service Areas** is hereby amended by redesignating a portion of the subject lands to "Service Area 2" as indicated on the attached schedule E-1.

The following special policies apply to the subject lands as identified on Schedule A1 to this Amendment:

Section 4.3.4.5.8.13 Part Lot 48, Concession 12

Development Area #1:

a. The area identified as Development Area #1 (DA #1) on Schedule 'A2' is permitted a maximum density of 25 units per gross hectare. The uses permitted shall be limited to semi-detached dwellings, small-lot single detached dwellings, duplex dwellings, triplex dwellings, four-plex dwellings, townhouses, home occupations, residential intensification uses and those public uses itemized on Figure 3. Vehicular access and servicing shall occur from the adjacent residential development to the east.

b. It will be a condition of draft approval of the development that the lands identified in hatching adjacent to DA #1 shall be dedicated to the Town of Collingwood upon registration of the development as per the subdivision/condominium and/or consent process.

c. The required 5% parkland dedication for the development of DA #1 shall be satisfied by the dedication of lands within the hatching area.

d. The lands shown in hatching include a multitude of environmental and open space features, including Provincially Significant Wetlands as well as all appropriate buffers associated with these features.

e. On the basis of the designation and dedication of these lands identified in hatching, it is confirmed that no further natural heritage studies or buffers are required. Despite this policy, in addition to whatever studies are identified as required by Section 8.13, current and future *Planning Act* applications shall be supported by:
   i. details demonstrating that the proposed development mitigates any negative impacts on the natural heritage features or their ecological functions through appropriate measures to the satisfaction of the Town and the NVCA;
   ii. a natural hazard assessment prepared to the satisfaction of the Town and the NVCA demonstrating that all proposed development will be located in accordance with Section 3.1 of the Provincial Policy Statement; and,
   iii. details demonstrating that the proposed development satisfies the requirements of the Provincial Policy Statement and the *Endangered Species Act* with respect to species at risk.

f. The completion of a Secondary Plan and secondary plan studies and requirements as per the policies of Section 8.10.2 shall not be required prior to development occurring on the lands designated as DA # 1.

g. All current and future applications under the *Planning Act* on the lands designated as DA # 1 shall be circulated to the MTO for review and comment.

Section 4.3.4.4.5.8 Part Lots 48 and 49, Concession 12

Development Area #2

a. The area identified as Development Area #2 (DA #2) on Schedule 'A2' is permitted a maximum density of 12 units per gross hectare. The uses permitted shall be limited to single-detached dwellings, semi-detached dwellings, small-lot single-detached, duplex dwellings, home occupations, residential intensification uses, and those public uses itemized on Figure 3. All residential units that back upon the western and northern boundary of the subject property (adjacent to the Forest Subdivision) shall be single-detached dwellings. Vehicular access may occur from Forest Drive and/or Silver Creek Drive and may be established through lands designated Environmental Protection as permitted by Section 4.1.3.1.

b. It will be a condition of draft approval of the development that that the lands identified in cross hatching adjacent to DA #2 shall be dedicated to the Town of Collingwood upon registration of the development as per the subdivision/condominium and/or consent process.

c. The required 5% parkland dedication for the development of DA #2 shall be satisfied by the dedication of lands within the cross hatching area.

d. The lands shown in cross hatching include a multitude of environmental and open space features including the floodplain of the Silver Creek and all appropriate buffers to those features.

e. On the basis of the designation and dedication of these lands identified in cross hatching, it is confirmed that no further natural heritage studies or buffers are required. Despite this policy, in addition to whatever studies are identified as required by Section 8.13, current and future *Planning Act* applications shall be supported by:
   i. details demonstrating that the proposed development mitigates any negative impacts on the natural heritage features or their ecological functions through appropriate measures to the satisfaction of the Town and the NVCA;
   ii. a natural hazard assessment prepared to the satisfaction of the Town and the NVCA demonstrating that all proposed development will be located in accordance with Section 3.1 of the Provincial Policy Statement; and,
   iii. details demonstrating that the proposed development satisfies the requirements of the Provincial Policy Statement and the *Endangered Species Act* with respect to species at risk.

f. The completion of a Secondary Plan and requirements and studies as per the policies of Section 8.10.2 and the Service Area 3 policies of Section 3.6.3 shall not be required prior to development occurring on the lands designated as DA # 2.

g. All current and future applications under the *Planning Act* on the lands designated as DA # 2 shall be circulated to the MTO for review and comment.

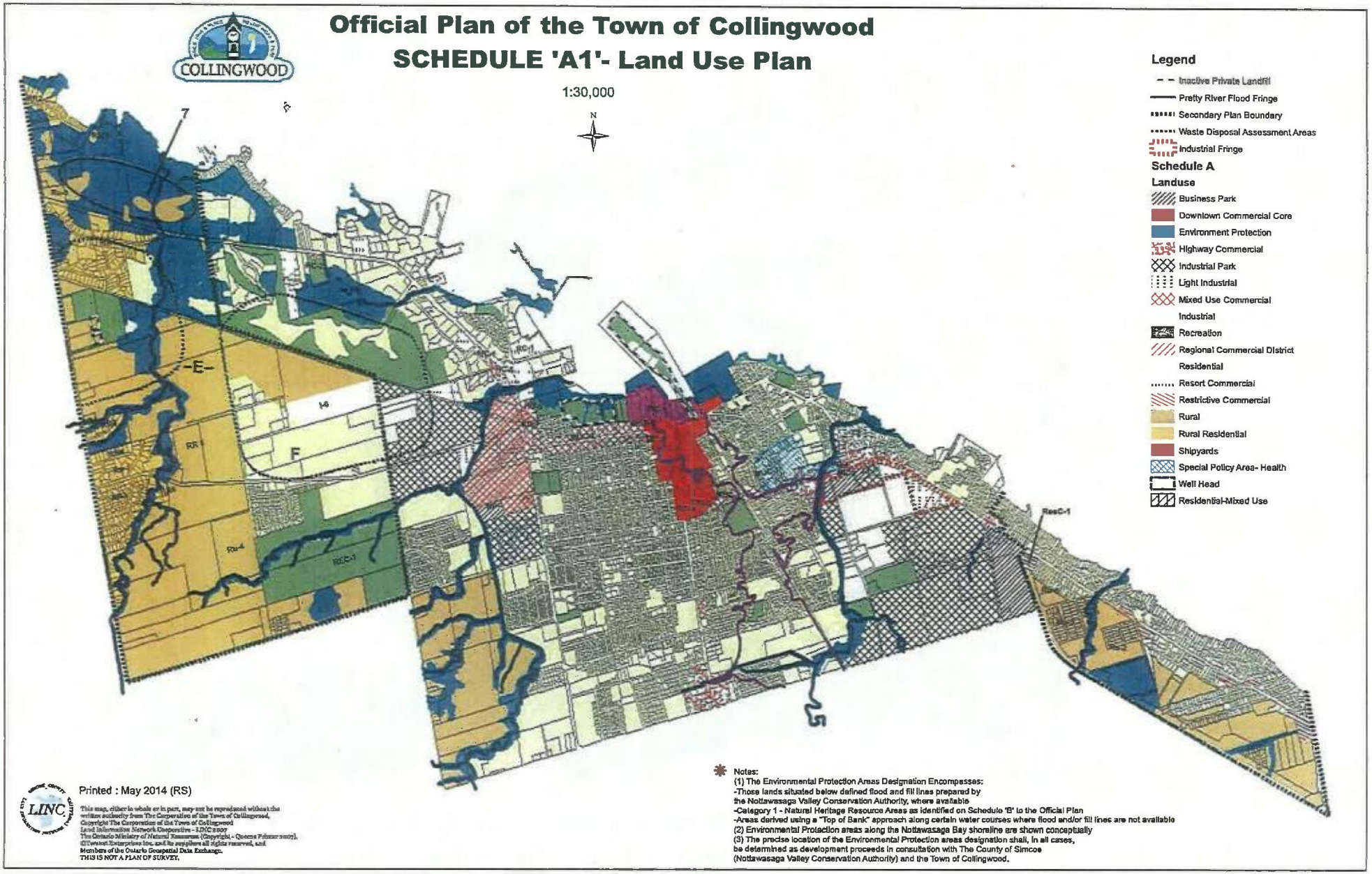
h. All current and future applications for zoning, site plan control approval, severances and/or plan of subdivisions/condominiums shall include submission of the following studies in addition to whatever studies are identified as required by Section 8.13, with the exception of natural heritage studies:
   i. a water and sanitary sewer servicing strategy that examines potential regional opportunities and constraints;
   ii. a stormwater management plan that includes a strategy for addressing Silver Creek drainage patterns and spill areas; and
   iii. a transportation study (including active transportation and transit) that explores potential linkages with adjacent development. This study shall also be circulated to the MTO for review and comment.

IMPLEMENTATION AND INTERPRETATION

The implementation and interpretation of this Amendment shall be in accordance with the respective policies of the Official Plan, as well as through a Zoning Bylaw Amendment for the subject lands under Sections 34 and 36 of the *Planning Act*, R.S.O. 1990, c. P. 13, as amended.

Official Plan of the Town of Collingwood
SCHEDULE 'A1'- Land Use Plan

1:30,000



Legend

- Inactive Private Landfill
- Pretty River Flood Fringe
- Secondary Plan Boundary
- Waste Disposal Assessment Areas
- Industrial Fringe

Schedule A

Landuse

- Business Park
- Downtown Commercial Core
- Environment Protection
- Highway Commercial
- Industrial Park
- Light Industrial
- Mixed Use Commercial
- Industrial
- Recreation
- Regional Commercial District
- Residential
- Resort Commercial
- Restrictive Commercial
- Rural
- Rural Residential
- Shipyards
- Special Policy Area- Health
- Well Head
- Residential-Mixed Use

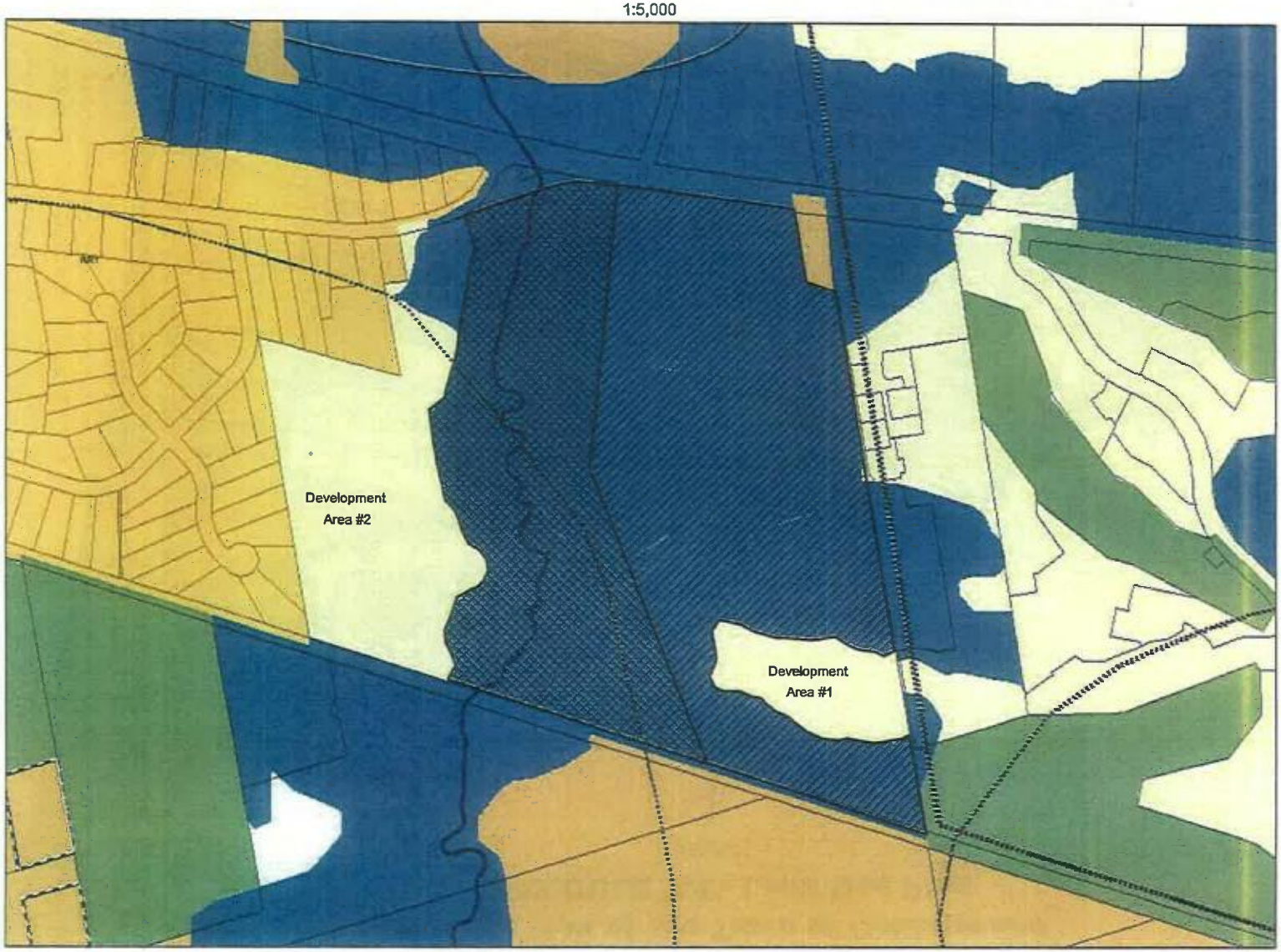
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* Notes:
(1) The Environmental Protection Areas Designation Encompasses:
-Those lands situated below defined flood and fill lines prepared by the Nottawasaga Valley Conservation Authority, where available
-Category 1 - Natural Heritage Resource Areas as identified on Schedule 'B' to the Official Plan
-Areas derived using a "Top of Bank" approach along certain water courses where flood and/or fill lines are not available
(2) Environmental Protection areas along the Nottawasaga Bay shoreline are shown conceptually
(3) The precise location of the Environmental Protection areas designation shall, in all cases, be determined as development proceeds in consultation with The County of Simcoe (Nottawasaga Valley Conservation Authority) and the Town of Collingwood.

Official Plan of the Town of Collingwood
SCHEDULE 'A2' - Land Use Plan - Detail

1:5,000



Legend

- Inactive Private Landfill
- Pretty River Flood Fringe
- Secondary Plan Boundary
- Waste Disposal Assessment Areas
- Industrial Fringe

Schedule A

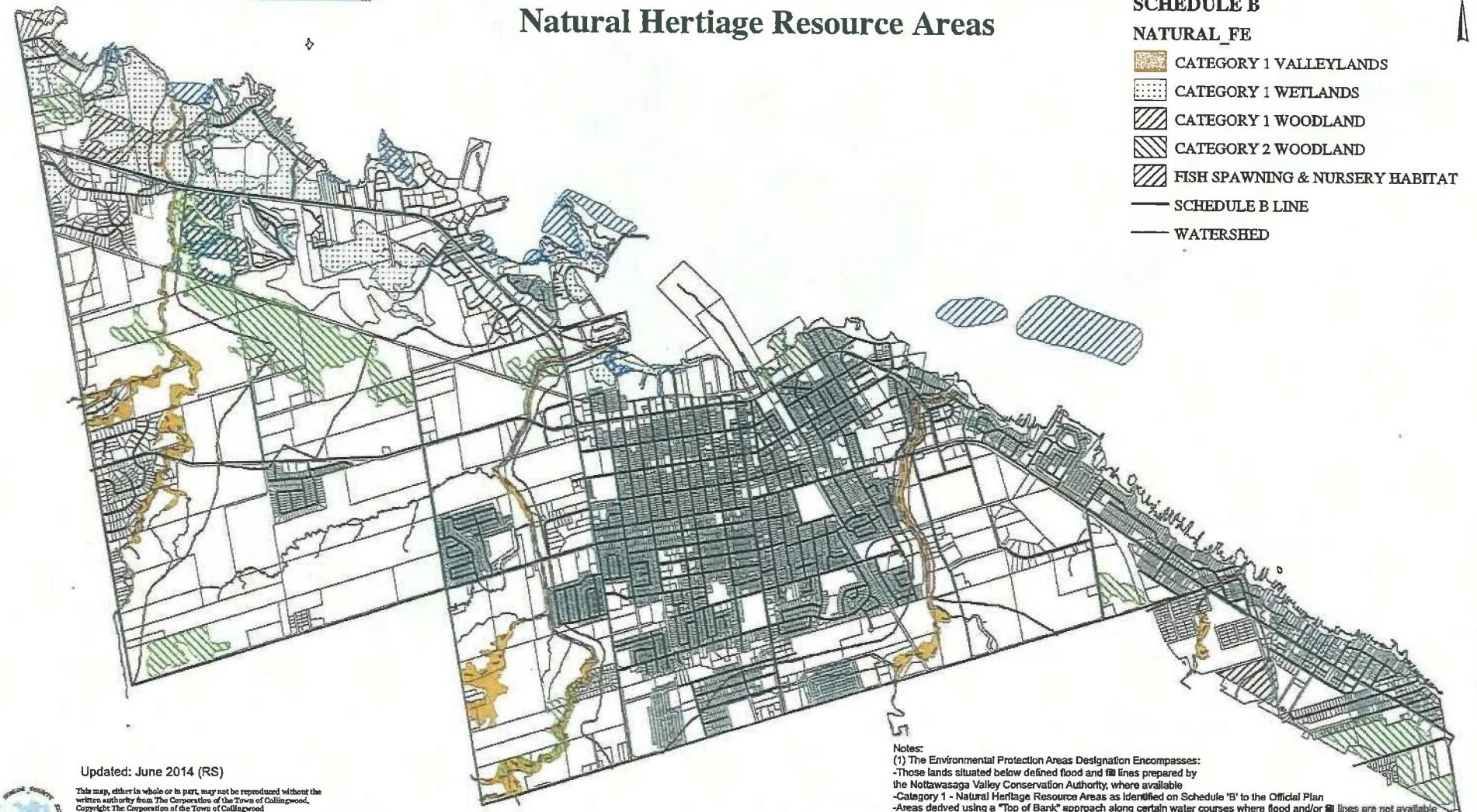
Landuse

- Business Park
- Downtown Commercial Core
- Environment Protection
- Highway Commercial
- Industrial Park
- Light Industrial
- Mixed Use Commercial
- Industrial
- Recreation
- Regional Commercial District
- Residential
- Resort Commercial
- Restrictive Commercial
- Rural
- Rural Residential
- Shipyards
- Special Policy Area- Health
- Well Head
- Residential-Mixed Use
- Lands to be dedicated as per 4.3.4.5.8.13
- Lands to be dedicated as per 4.3.4.4.5.8

Printed : May 2014 (RS)

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Official Plan of the Town of Collingwood
SCHEDULE 'B1' - Environmental Protection- Natural Hertiage Resource Areas



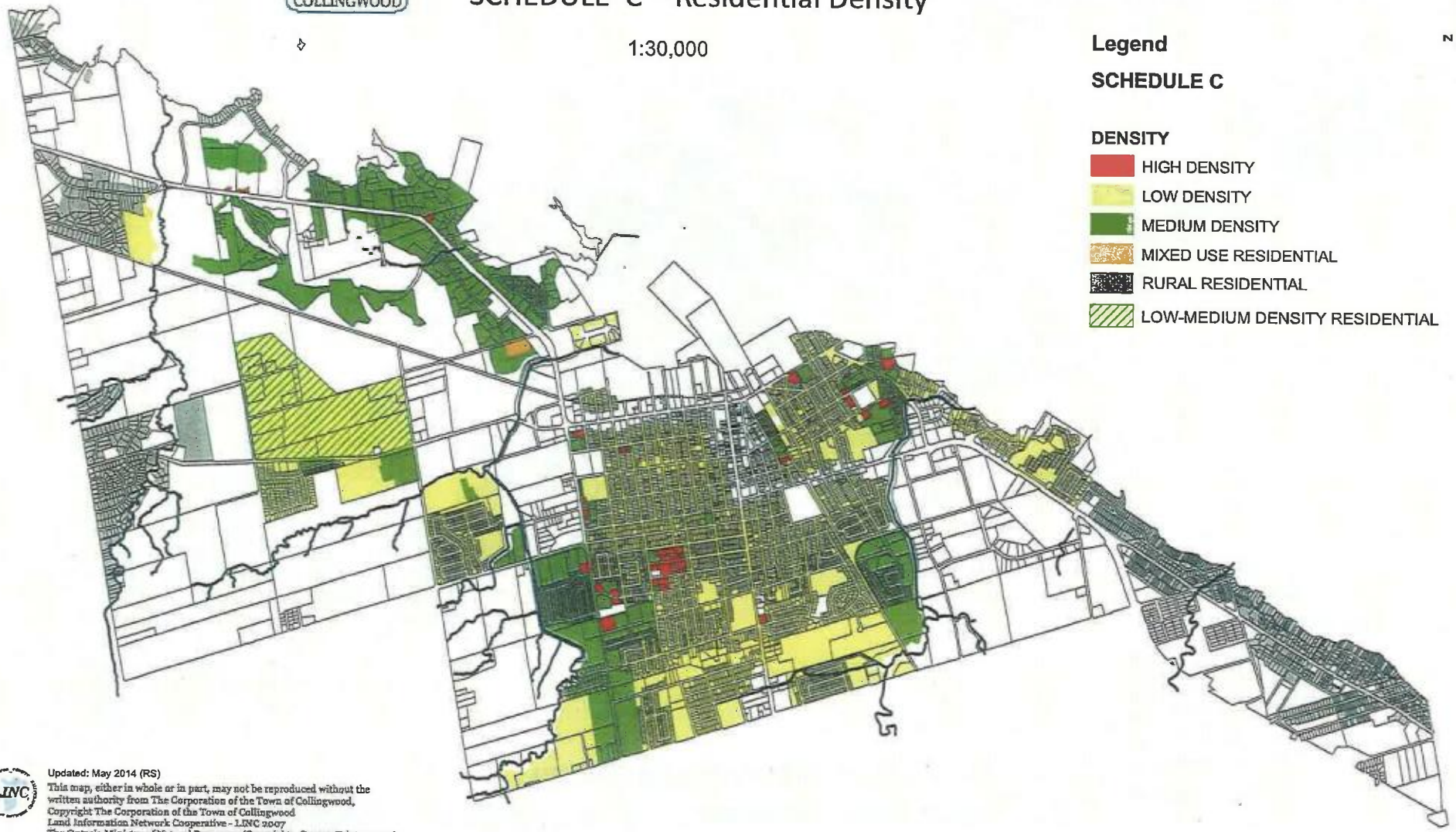
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Notes:
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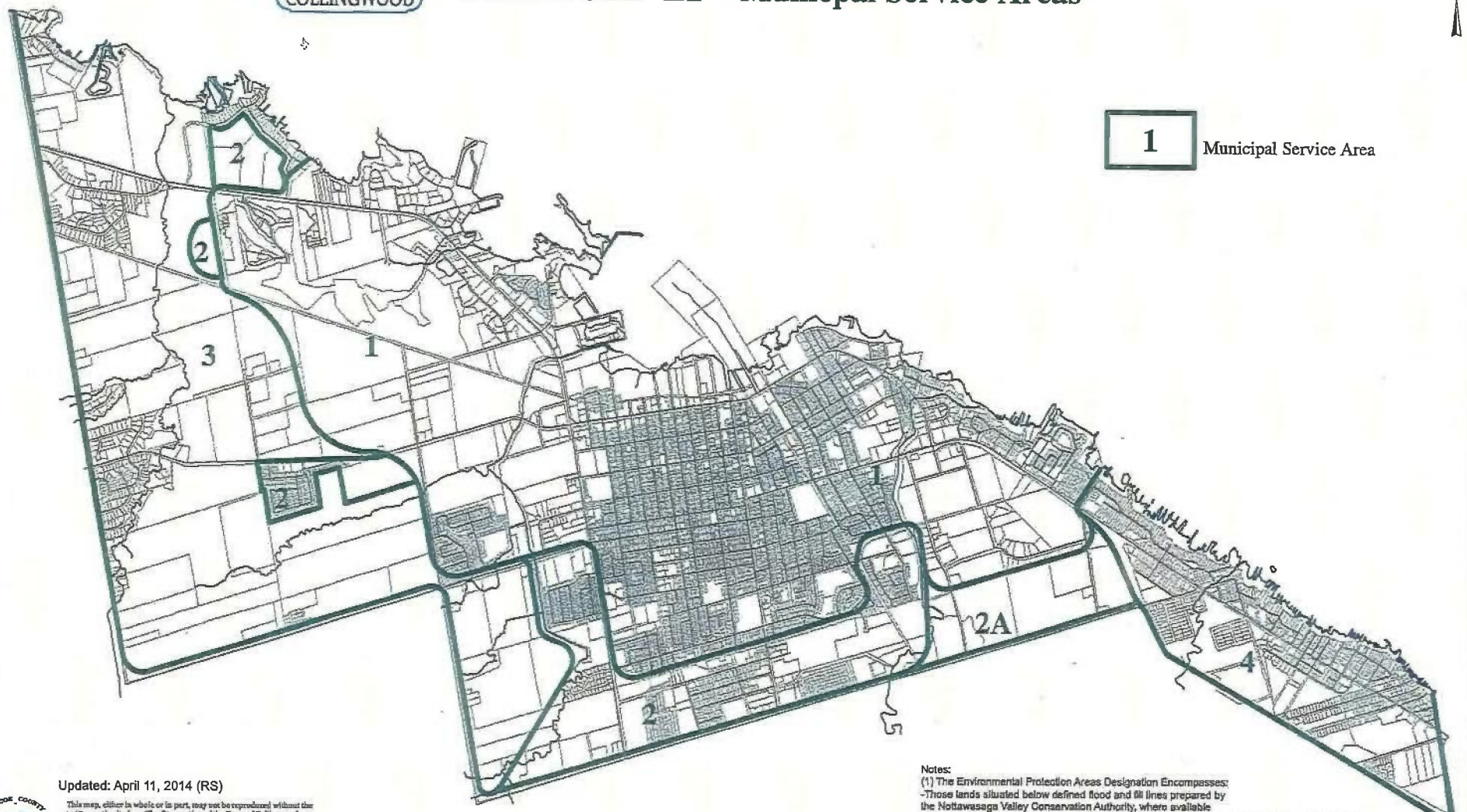
Official Plan of the Town of Collingwood
SCHEDULE 'C' - Residential Density

1:30,000



Updated: May 2014 (RS)
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Official Plan of the Town of Collingwood
SCHEDULE 'E1' - Municpal Service Areas



Updated: April 11, 2014 (RS)

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Notes:
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(Nottawasaga Valley Conservation Authority) and the Town of Collingwood.

FIGURES

Figure 1: Site Location

Figure 2: Concept Plan

Figure 3: Existing Natural Hazards & Site Constraints

Figure 4: Sanitary Servicing Plan

Figure 5: Water Servicing Plan

Figure 6: Internal Storm Drainage Plan

Figure 7: Pre-Development Storm Drainage Plan

Figure 8: Post-Development Storm Drainage Plan

Figure 9: Proposed Stormwater Management Facility Plan (West)

Figure 10: Proposed Stormwater Management Plan (East)



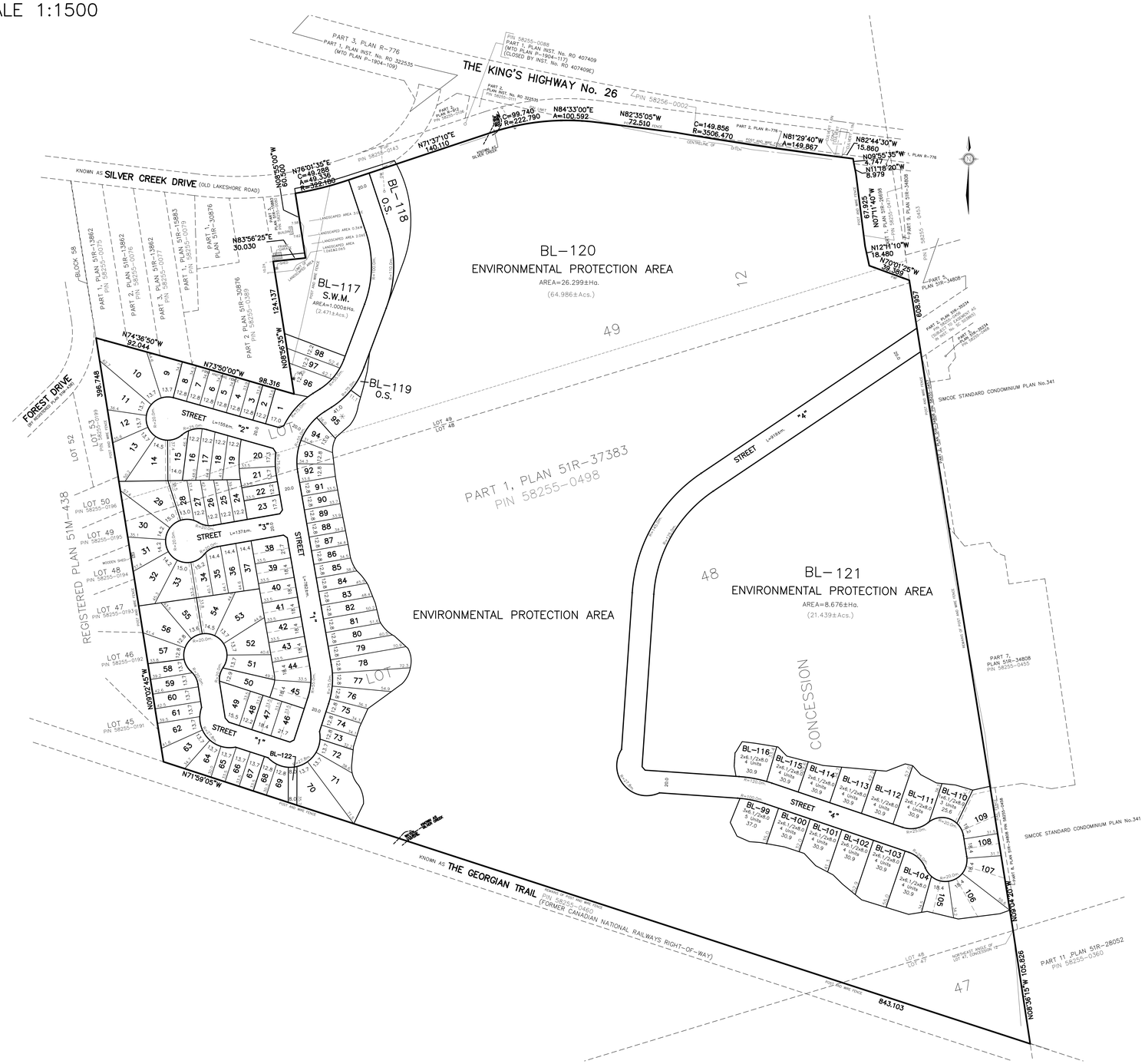
Project	HUNTINGWOOD DEVELOPMENT TOWN OF COLLINGWOOD
Drawing	SITE LOCATION

CROZIER & ASSOCIATES Consulting Engineers
110 Pine Street,
Collingwood, ON L9Y 2N9
705 446-3510 T
705 446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

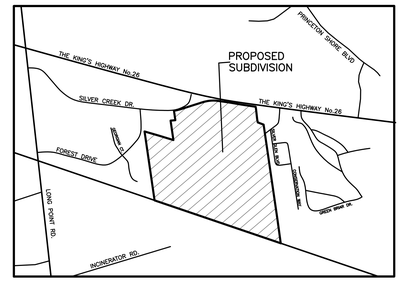
Drawn By	Design By	Project	
J.E.	J.E.	281–2769	
Scale	**Date**	**Check By**	**Drawing**
N.T.S.	07/29/2019	J.P.	Fig. 1

DRAFT PLAN OF SUBDIVISION
PART OF LOTS 47, 48 AND 49, CONCESSION 12
TOWN OF COLLINGWOOD
(GEOGRAPHIC TOWNSHIP OF NOTTAWASAGA)
COUNTY OF SIMCOE

SCALE 1:1500



DRAFT PLAN T–



KEY PLAN N.T.S.

SECTION 51, PLANNING ACT, ADDITIONAL INFORMATION

A. AS SHOWN ON DRAFT PLAN
B. AS SHOWN ON DRAFT PLAN
C. AS SHOWN ON DRAFT PLAN
D. SEE SCHEDULE OF LAND USE
E. AS SHOWN ON DRAFT PLAN
F. AS SHOWN ON DRAFT PLAN
G. AS SHOWN ON DRAFT PLAN
H. MUNICIPAL PIPED WATER AVAILABLE AT TIME OF DEVELOPMENT
I. CLAY–LOAM
J. AS SHOWN ON DRAFT PLAN
K. SANITARY AND STORM SEWERS, GARBAGE COLLECTION, FIRE PROTECTION
L. AS SHOWN ON DRAFT PLAN

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AS SHOWN ON THIS PLAN, AND THEIR RELATIONSHIP TO THE ADJACENT LAND ARE ACCURATELY AND CORRECTLY SHOWN.

DATE ----------, 2019

DAN DZALDOV
SCHAEFFER DZALDOV BENNETT LTD.
ONTARIO LAND SURVEYORS
64 JARDIN DRIVE, UNIT 1
CONCORD, ONTARIO L4K 3P3
TEL: (416) 987-1337

OWNER'S CERTIFICATE

I AUTHORIZE KLM PLANNING PARTNERS INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF COLLINGWOOD FOR APPROVAL.

OWNER

HUNTINGWOOD TRAILS (COLLINGWOOD) LTD.

152 DALEMOUNT AVENUE
TORONTO
ONTARIO
M6B 3C9

EDWARD WEISZ
A.S.O.

SCHEDULE OF LAND USE

TOTAL AREA OF LAND TO BE SUBDIVIDED = 48.962±Ha. (120.988±Acs.)

	BLOCKS	LOTS	UNITS	±Ha.	±Acs.
DETACHED DWELLINGS					
LOTS 1, 9–14, 20, 21, 23, 29–37, 51–54, 58–67, 70–72 and 95 MIN. LOT FRONTAGE=13.7m. MIN. LOT AREA=456.4sq.m.		37	37	3.044	7.522
LOTS 3–8, 15, 50, 55–57, 68, 69 and 73–94 MIN. LOT FRONTAGE=12.8m. MIN. LOT AREA=401.9sq.m.		35	35	2.052	5.071
LOTS 2, 16–19, 22, 24–28, 48, 49 and 96–98 MIN. LOT FRONTAGE=12.2m. MIN. LOT AREA=402.6sq.m.		16	16	0.861	2.127
SEMI–DETACHED DWELLINGS					
LOTS 38–47 and 105–109 MIN. LOT FRONTAGE=16.8m. MIN. LOT AREA=562.8sq.m.		15	30	1.160	2.866
STREET TOWNHOUSES					
BLOCKS 99–104 and 110–116 MIN. FRONTAGE 6.0m. MIN. FRONTAGE 6.1m.	13		52	1.624	4.013
SUBTOTAL	13	103	170	8.741	21.599
BLOCK 117 – STORM WATER MANAGEMENT	1			1.000	2.471
BLOCKS 118 & 119 – OPEN SPACE	2			0.233	0.576
BLOCKS 120 & 121 – ENVIRONMENTAL PROTECTION AREA	2			34.975	86.425
BLOCK 122 – WALKWAY	1			0.027	0.067
STREETS 20.0m. WIDE TOTAL LENGTH= 1993.8m. AREA= 3.986±Ha.				3.986	9.850
TOTAL	19	103	170	48.962	120.988

NOTE – ELEVATIONS RELATED TO CANADIAN GEODETIC DATUM

FIG. 2

PROJECT No. P-3083

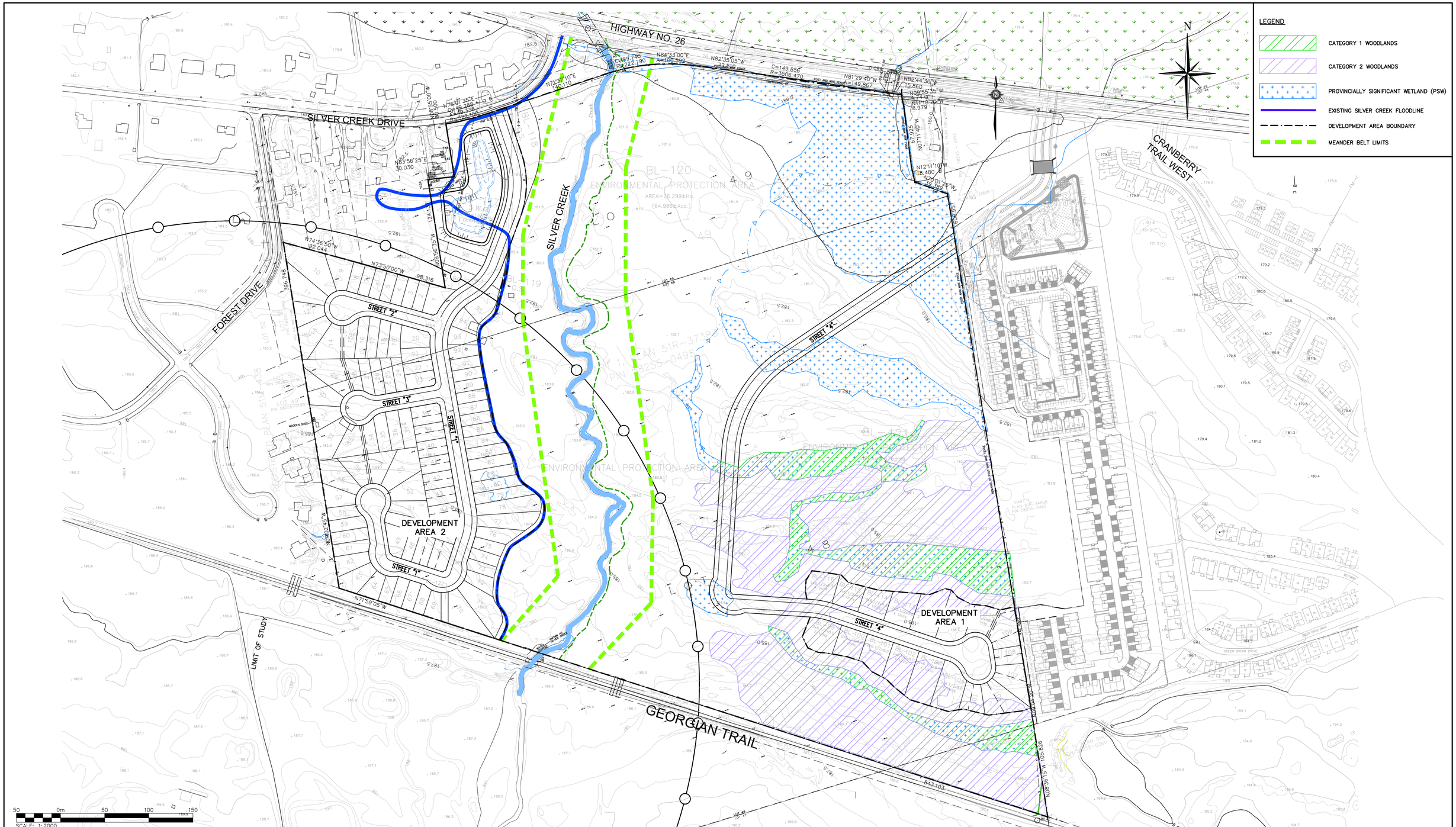
SCALE 1:1500 JULY 23, 2019

(3083DES4) X-REF: (3083MAS2 & 3083TOPO1)

DWG. No. - 19:1

KLM PLANNING PARTNERS INC.
64 JARDIN DRIVE - UNIT 1B, CONCORD ONTARIO L4K 3P3
TEL: (905) 669-4055 FAX: (905) 669-0097 design@klmplanning.com

Planning • Design • Development



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4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

TEMPORARY BENCHMARKS

TBM#1–
TBM#2–
TBM#3–

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR JULY 2019 FSR/SWM REPORT	07/29/2019

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

Project

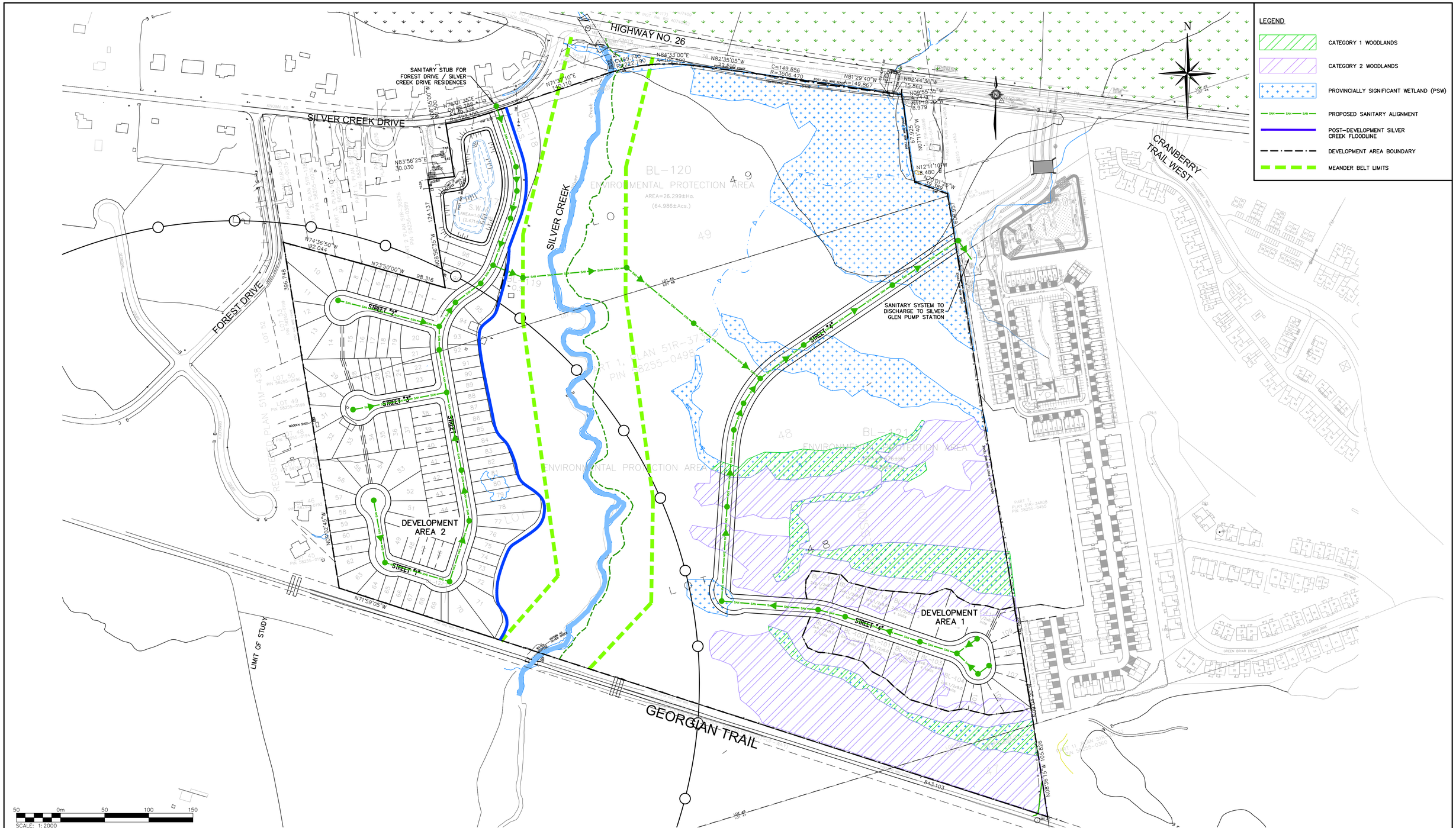
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing

EXISTING NATURAL HAZARDS
& SITE CONSTRAINTS

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	
J.E.	J.E.	281–2769	
Check By	Check By	Scale	Drawing
J.P.	J.P.	1:2000	Fig. 3



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TEMPORARY BENCHMARKS

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TBM#3–

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR JULY 2019 FSR/SWM REPORT	07/29/2019

Engineer

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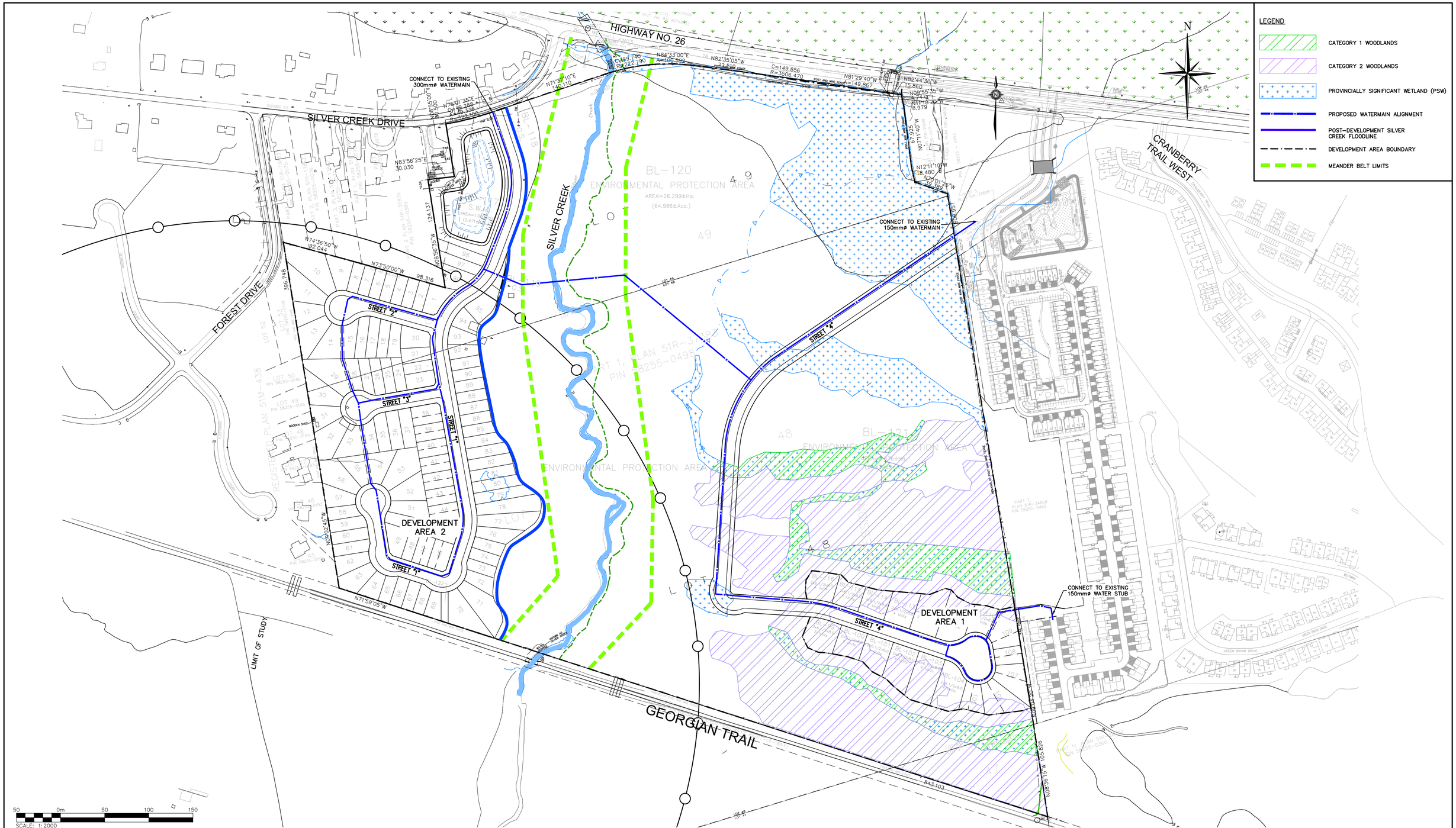
Engineer

Project
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing
SANITARY SERVICING PLAN

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

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Check By	Check By	Scale	Drawing
J.P.	J.P.	1:2000	Fig. 4



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TEMPORARY BENCHMARKS

TBM#1–
TBM#2–
TBM#3–

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR JULY 2019 FSR/SWM REPORT	07/29/2019

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

Project
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing
WATER SERVICING PLAN

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	
J.E.	J.E.		281-2769
Check By	Check By	Scale	Drawing
J.P.	J.P.	1:2000	Fig. 5

LEGEND

- CATEGORY 1 WOODLANDS
- CATEGORY 2 WOODLANDS
- PROVINCIALLY SIGNIFICANT WETLAND (PSW)
- PROPOSED STORM SEWER ALIGNMENT
- POST-DEVELOPMENT SILVER CREEK FLOODLINE
- DEVELOPMENT AREA BOUNDARY
- MEANDER BELT LIMITS

HIGHWAY NO. 26
SILVER CREEK DRIVE
FOREST DRIVE
SILVER CREEK
CRANBERRY TRAIL WEST
GEORGIAN TRAIL
LIMIT OF STUDY
PROP. SWM POND REFER TO FIG. 9 FOR DETIALS
PROPOSED CULVERT
PROPOSED CULVERT
PROPOSED CULVERT
DEVELOPMENT AREA 1
DEVELOPMENT AREA 2
ENVIRONMENTAL PROTECTION AREA
AREA=26.299±Ha. (64.98±Acs.)
BL-120
STREET "A"
STREET "B"
STREET "C"
HP 182.60
LP 182.40
HP 183.95
LP 183.80
HP 184.93
184.25
184.66
HP 185.20
HP 187.85
187.15
186.70
181.80
HP 184.70
LP 184.50
HP 185.00
LP 184.65
HP 186.50
LP 186.15
HP 187.15
N71°59'05"W 843.103
N08°36'55"W 105.526
N00°25'40"W 204.000
N71°59'05"W 196.748
N74°36'50"W 92.044
N73°50'00"W 98.316
N83°56'25"E 30.030
N71°59'05"W 114.437
N84°33'00"E 193.740
R=222.790
N82°35'05"W 149.992
N81°29'45"W 149.867
N82°44'30"W 15.860
N00°55'35"W 4.743
N12°11'10"W 78.979
N12°11'10"W 67.925
N12°11'10"W 18.480
N24°01'26"W 35.285
N71°59'05"W 114.437
N71°59'05"W 196.748
N74°36'50"W 92.044
N73°50'00"W 98.316
N00°25'40"W 204.000
N71°59'05"W 843.103
N08°36'55"W 105.526

SCALE: 1:2000

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3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

TEMPORARY BENCHMARKS

TBM#1–
TBM#2–
TBM#3–

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR JULY 2019 FSR/SWM REPORT	07/29/2019

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

Project

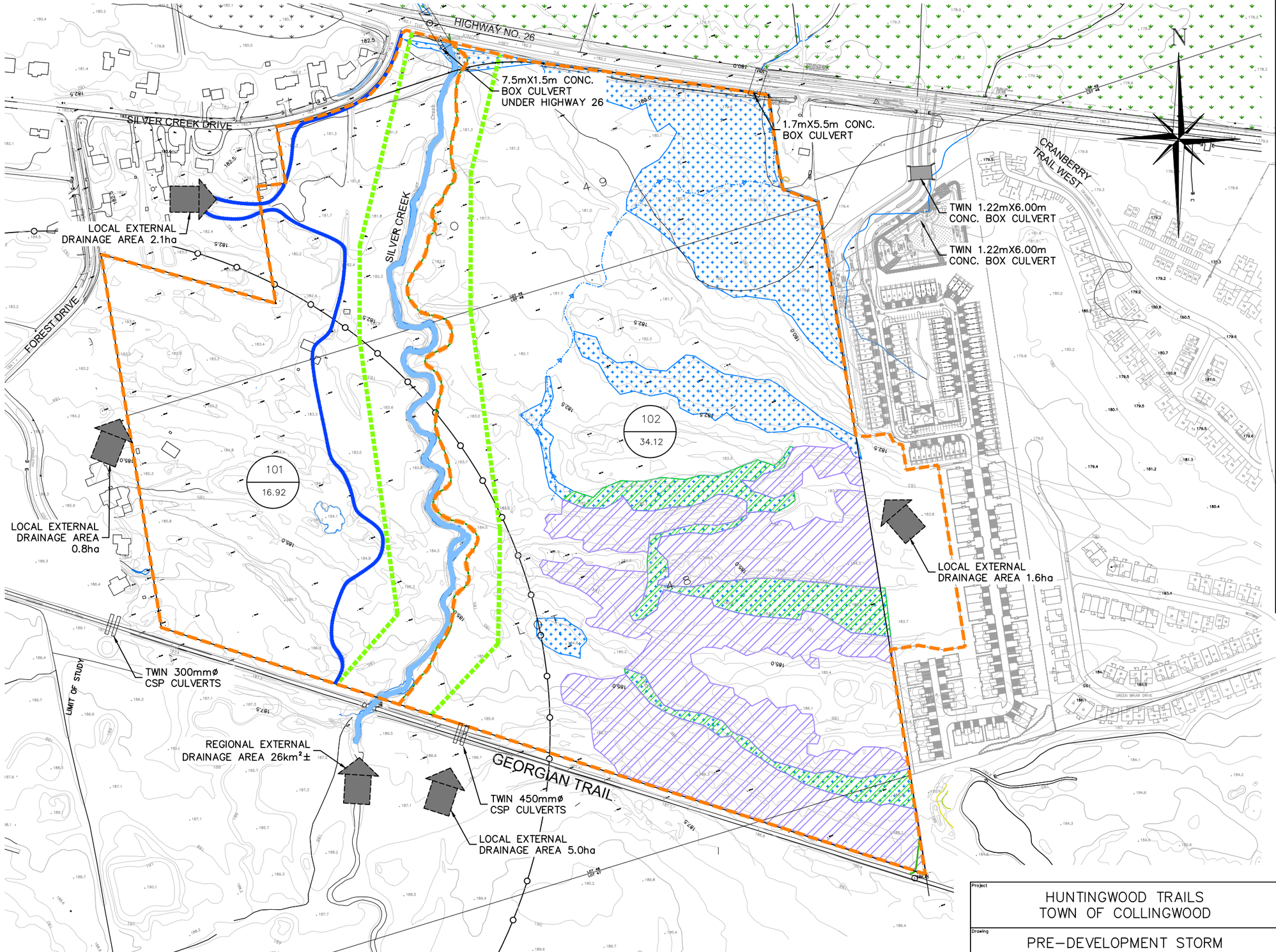
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing

INTERNAL STORM DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	J.E.	Design By	J.E.	Project	281-2769
Check By	J.P.	Check By	J.P.	Scale 1:2000	Drawing Fig. 6



LEGEND

- FLOW DIRECTION
- EXISTING CULVERT
- EXISTING DRAINAGE CATCHMENT BOUNDARY
- 101 — CATCHMENT ID
- 16.5 — CATCHMENT AREA (ha)
- EXISTING SILVER CREEK FLOODLINE
- EXISTING INTERMITTENT DRAINAGE CHANNEL
- EXISTING CONTOUR (0.5m INTERVAL)
- EXISTING INTERMITTENT DITCH AS OBSERVED DURING FIELD SITE WALK (FEB 2009)
- CATEGORY 1 WOODLANDS
- CATEGORY 2 WOODLANDS
- PROVINCIALLY SIGNIFICANT WETLAND (PSW)
- DEVELOPMENT AREA BOUNDARY
- MEANDER BELT LIMITS

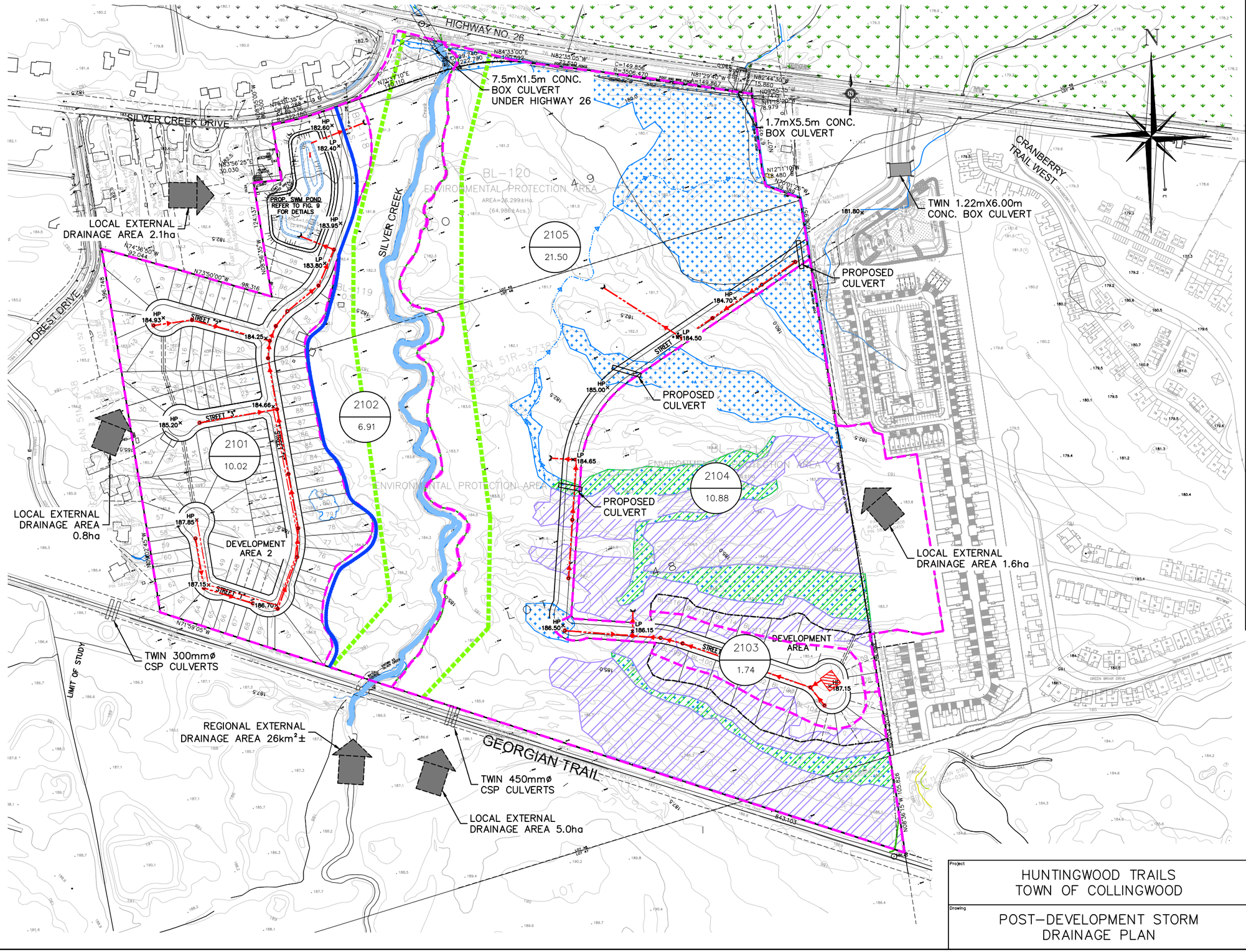
NOTE:
CONTOURS GENERATED BY FIRST BASE SOLUTIONS (AIR PHOTO 2008)

Project
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing
PRE-DEVELOPMENT STORM DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
8 MARKET STREET
SUITE 600
TORONTO, ON M5E 1M6
416-477-3392 T
WWW.CFCROZIER.CA

Drawn By	Design By	Project
J.E.	J.E.	281-2769
Scale	Date	Check By	Drawing
1:4000	07/29/2019	J.P./R.A.	Fig. 7



LEGEND

- FLOW DIRECTION
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED DRAINAGE CATCHMENT BOUNDARY
- 101 / 16.5 — CATCHMENT ID / CATCHMENT AREA (ha)
- POST-DEVELOPMENT SILVER CREEK FLOODLINE
- EXISTING INTERMITTENT DRAINAGE CHANNEL
- EXISTING CONTOUR (0.5m INTERVAL)
- EXISTING INTERMITTENT DITCH AS OBSERVED DURING FIELD SITE WALK (FEB 2009)
- CATEGORY 1 WOODLANDS
- CATEGORY 2 WOODLANDS
- PROVINCIALLY SIGNIFICANT WETLAND (PSW)
- DEVELOPMENT AREA BOUNDARY
- MEANDER BELT LIMITS

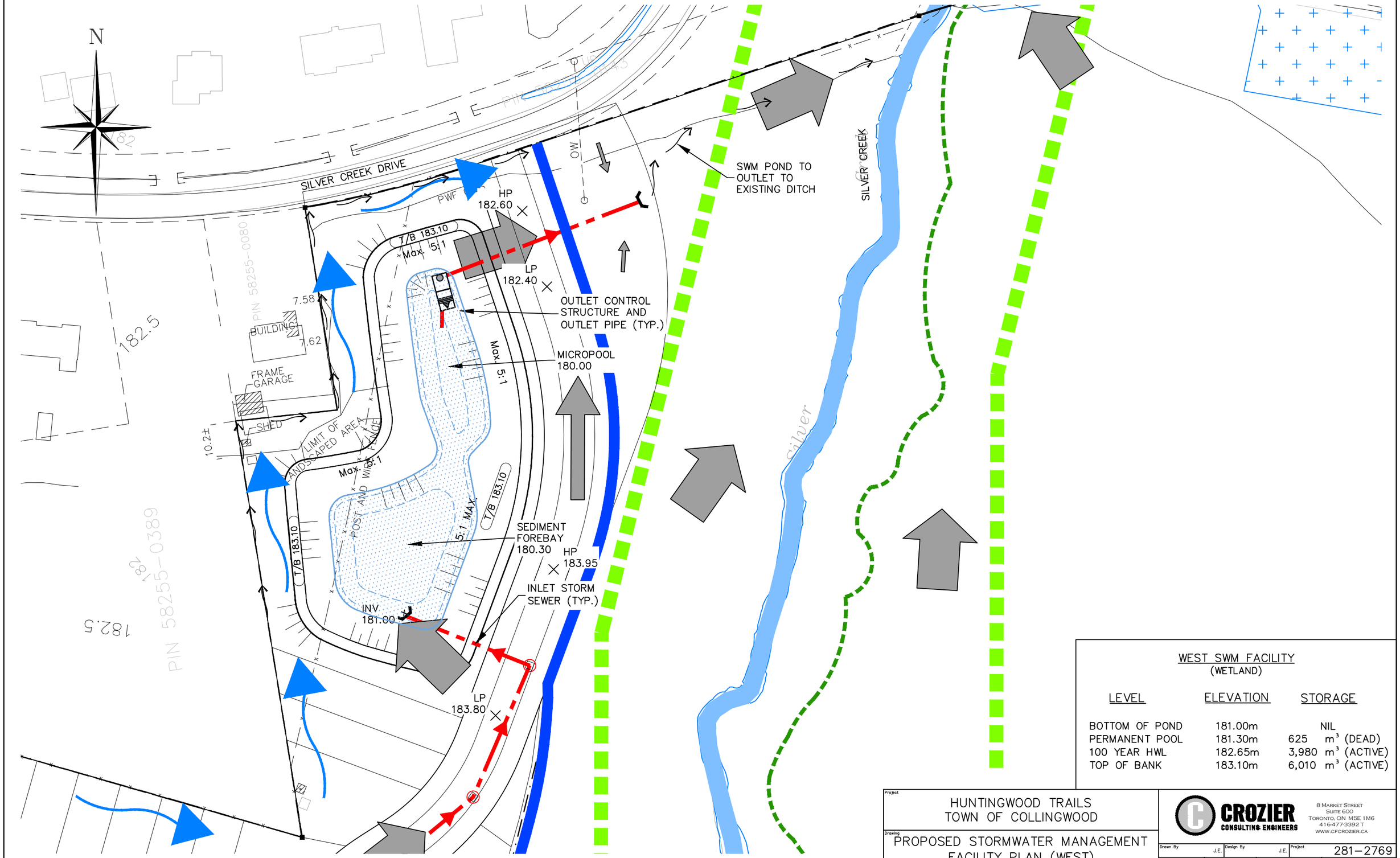
NOTE:
CONTOURS GENERATED BY FIRST BASE SOLUTIONS (AIR PHOTO 2008)

Project
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing
POST-DEVELOPMENT STORM DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
8 MARKET STREET
SUITE 600
TORONTO, ON M5E 1M6
416-477-3392 T
WWW.CFCROZIER.CA

Drawn By	Design By	Project
J.E.	J.E.	281-2769
Scale	Date	Check By	Drawing
1:4000	07/29/2019	J.P./R.A.	Fig. 8



WEST SWM FACILITY
(WETLAND)

LEVEL	ELEVATION	STORAGE
BOTTOM OF POND	181.00m	NIL
PERMANENT POOL	181.30m	625 m^3 (DEAD)
100 YEAR HWL	182.65m	3,980 m^3 (ACTIVE)
TOP OF BANK	183.10m	6,010 m^3 (ACTIVE)

Project
HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing
PROPOSED STORMWATER MANAGEMENT
FACILITY PLAN (WEST)

CROZIER CONSULTING ENGINEERS
8 MARKET STREET
SUITE 600
TORONTO, ON M5E 1M6
416-477-3392 T
WWW.CFCROZIER.CA

Drawn By	Design By	Project
J.E.	J.E.	281-2769

Scale	Date	Check By	Drawing
1:1000	07/29/2019	J.P./R.A.	Fig. 9

N

ADDITIONAL ROAD DRAINAGE CAPTURED IN STORM SEWER SYSTEM. QUALITY TREATMENT PROVIDED IN CATCHBASINS AND VIA LID'S AT OUTLETS

SWM OUTLET

CONTROL MANHOLE C/W ORIFICES

HP 186.50

LP 186.15

OVERSIZED 900mmø STM SEWERS TO CONTRIBUTE TO STORMWATER STORAGE

SPLIT DRAINAGE ON LOTS

STREET "4"

SWM STORAGE TANK
FOOTPRINT = 250m²
VOLUME = 360m³

HP 187.15

RAIL FENCE

SPLIT DRAINAGE ON LOTS

LEGEND

- CATEGORY 1 WOODLANDS
- CATEGORY 2 WOODLANDS
- PROVINCIALLY SIGNIFICANT WETLAND (PSW)
- PROPOSED STORM SEWER ALIGNMENT

Project: HUNTINGWOOD TRAILS
TOWN OF COLLINGWOOD

Drawing: PROPOSED STORMWATER MANAGEMENT PLAN (EAST)

CROZIER CONSULTING ENGINEERS
8 MARKET STREET
SUITE 600
TORONTO, ON M5E 1M6
416.477.3392 T
WWW.CFCROZIER.CA

Drawn By	Design By	Project
J.E.	J.E.	281–2769
Scale	Date	Check By	Drawing
1:1000	07/29/2019	J.P./R.A.	Fig. 10