WILLS

PARTNERS IN ENGINEERING, PLANNING & ENVIRONMENTAL SERVICES

April 12, 2021

Life at the Woodland Inc.
5 Brisdale Drive, Suite 201
Brampton, ON
L7A 0S9

Attention: Rubal Kundra, President

Dear Mr. Kundra:

Re: Life at the Woodland Subdivision
Otonabee-South Monaghan, ON
Flood Impact Assessment
D.M. Wills Associates Project No. 19-10874

1.0 Purpose

D.M. Wills Associates Limited (Wills) has been retained by Life at the Woodland Inc. to prepare a Flood Impact Assessment in support of the proposed Life at the Woodland Subdivision, located at Burnham Line, in the Township of Otonabee South Monaghan, Ontario (the site).

The site is currently undeveloped and is comprised of range, woodlot and two (2) wetland areas. The site is bounded by residential properties to the south and west, agricultural lands to the north and wetland to the east. The proposed development will consist of 28 residential lots with access provided from Burnham Line through a private access road.

The private access road will require crossing the central wetland area, which is within the Otonabee Conservation (ORCA) development control area and, therefore, a permit will be required in accordance with Ontario Regulation 167/06 for construction of the proposed development. This Flood Impact Assessment has been prepared in support of the development to address ORCA's requirements and includes the following objectives:

- To determine the existing flood hazard limits across the site.
- To confirm that development of the site will not increase flood potential to adjacent properties.
- To confirm that safe access will be provided to the proposed development, through the appropriate sizing of drainage infrastructure.
- To minimize disturbances within the flood hazard limits.

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Figure 1 – Site Location

A topographic survey of the site, wetland and watercourse was completed by JBF Surveyors in January 2020. This survey data was used to determine elevations and locations of existing site features and cross-sections of the watercourse used for the hydraulic modelling. LiDAR topographic data was also used to supplement the topographic survey where access was not available or additional information was required for catchment delineation.

2.0 Hydrology

For the purpose of this Flood Impact Assessment, the hydrologic and hydraulic analyses will be focussed on the central wetland feature. Drainage from the central wetland is split between two (2) outlet locations, referred to as the North and South Outlets. The North Outlet drains across agricultural land to another wetland area and into a tributary of Meade Creek. The South Outlet drains through an existing culvert under Burnham Line and through a separate tributary of Meade Creek. For the purpose of this report, catchments have been delineated based on the existing topography to each outlet location as shown on **Figure 2**. Hydrologic parameters for each catchment area are summarized in **Table 1** and documented in the **Appendix**.

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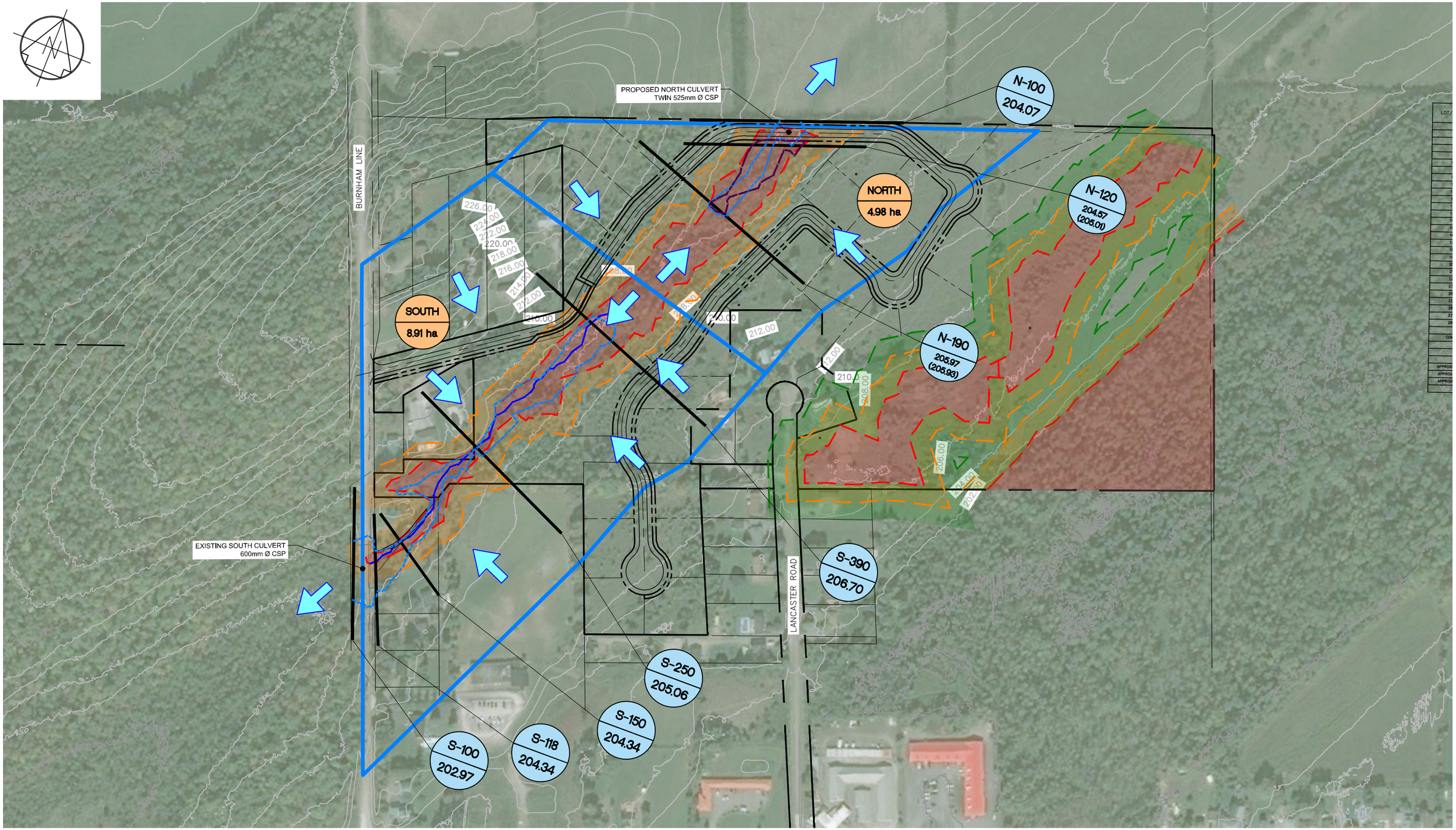

EX-100 / 0.22 ha — CATCHMENT ID / CATCHMENT AREA

CATCHMENT BOUNDARY

N-100 / 204.07 (204.07) — RIVER STATION / EXISTING FLOOD ELEVATION / PROPOSED FLOOD ELEVATION

CROSS-SECTION LOCATION

EXISTING FLOOD LIMIT

PROPOSED FLOOD LIMIT

WETLAND

WETLAND 15m OFFSET

WETLAND 30m OFFSET

Sketch No.

FIGURE 2
LIFE AT THE WOODLAND
PRE-DEVELOPMENT
DRAINAGE AREA PLAN

D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9

P. 705.742.2297
F. 705.741.3568
E. wills@dmwills.com

Drawn By: RC	Scale: 1: 3000
Designed By: RC	Plot Date: MARCH 2021
Checked By: CPB	Project No.: 10874
Engineer: CPB	Drawing File No.: 10874_DP

Table 1 – Hydrologic Parameters

Nashyd[1]					
Catchment ID	**Area (ha)**	**Impervious %**	**CN*[2]**	**Ia[3]**	**Tp[4] (hrs)**
SOUTH	8.91	5.7	64.0	7.1	0.17
NORTH	4.98	2.2	64.6	8.8	0.17

Notes:
1. Command Line refers to the unit hydrograph used in the VO3 hydrologic model for the respective catchment area.
2. CN* refers to the modified CN number adjusted to Antecedent Moisture Conditions II. Excludes Impervious Area for Standhyd.
3. Ia refers to Initial Abstraction. Excludes Impervious Area for Standhyd.
4. Tp refers to Time of Peak.

Hydrologic parameters such as soil infiltration properties, land use and runoff response were determined based on literature review. Topographic mapping and AutoCAD Civil 3D 2019 software were used to establish sub-catchment areas, land use and slopes.

Rainfall data for the site is taken from the City of Peterborough Engineering Design Standards (March 2016) as well as the Peterborough Airport climate station, is included in the **Appendix**. The Regulatory Flow is defined by the Ministry of Natural Resources and Forestry (MNRF) in the Technical Guide for River and Stream Systems: Flooding Hazard Limit as the greater peak flow rate of the 100-year and the Regional Storm. This peak flow rate is used as the basis for determining the water surface elevations in the hydraulic model. The 6-hour, 12-hour and 24 hour SCS storm distributions were modelled as well as the Timmins Regional storm.

Visual OTTHYMO Version 3 (VO3) was used as the hydrologic model for this project. Peak flow rates have been analyzed at the outlet locations based on the hydrologic parameters shown in **Table 1,** for each storm distribution. The proposed development will be required to control post development peak flow rates to pre-development levels, at each outlet location. As such, the proposed development will have no impact on peak flow rates. A summary of the peak flow rates is shown in **Table 2.**

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Table 2 – Peak Flow Summary

Storm Distribution	Return Period	Rainfall Volume (mm)	Peak Flow Rate (m^3/s)	
			North Outlet	South Outlet
6 hour SCS Storm	100-Year	89.9	**0.545**	**0.987**
12 hour SCS Storm	100-Year	98.4	**0.545**	0.986
24 hour SCS Storm	100-Year	108.7	0.544	0.982
Timmins Storm	Regional	193.0	0.388	0.692

A review of Table 2, notes that the highest peak flow rates are generated by the 100-year, 6-hour SCS storm distribution, which have been used as the regulatory flows within the hydraulic modelling.

3.0 Hydraulics

Based the nature of the proposed development, a simple HEC-RAS hydraulic model was created, analyzing each outlet as separate reaches. Culvert crossings and cross-section locations are illustrated on **Figure 2**.

Two (2) modelling scenarios were analyzed. The existing scenario models the site in the pre-development condition and the proposed scenario models the site with the proposed private roadway crossing. Twin 525 mm CSP culverts are proposed under the private roadway to ensure that the crossing does not overtop during major storm events. A summary of the results for the regulatory flows is presented in **Table 3** and supporting calculations can be found in the **Appendix.** The existing and proposed flood limits are illustrated on **Figure 2**.

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Table 3 – Regulatory Water Surface Elevations

Station	Location	Outlet	Water Surface Elevation (m)		Flow Depth (m)	
			Existing	Proposed	Existing	Proposed
S-100	D/S of Burnham Line Culvert Crossing	South	202.97	202.97	0.24	0.24
S-109	Burnham Line Culvert Crossing	South	204.34	204.34	0.12	0.12
S-118	U/S of Burnham Line Culvert Crossing	South	204.34	204.34	0.97	0.97
S-150		South	204.34	204.34	0.62	0.62
S-250		South	205.06	205.06	0.25	0.25
S-390		South	206.70	206.70	0.19	0.19
N-100	North Property Boundary	North	204.07	204.07	0.17	0.17
N-110	Private Roadway Culvert Crossing	North	204.57	204.57	0.00	0.00
N-120	U/S of Private Roadway Culvert Crossing	North	204.57	**205.01**	0.13	**0.57**
N-190		North	205.97	**205.93**	0.15	**0.11**

4.0 Flood Hazard Evaluation

A review of **Table 3** and **Figure 2** show that the regulatory flood limits are contained within the existing wetland areas, with the exception of the spill over Burnham Line. Without accounting for any flow attenuation in the wetland areas, the maximum flow depth over Burnham Line is estimated to be 0.12 m, which meets the criteria for safe access.

Flood elevations immediately upstream of the proposed private roadway will increase as a result of the development; however, the flood limits will be contained within the wetland area, will not overtop the proposed roadway and will not extend to adjacent properties.

D.M. Wills Associates Limited
150 Jameson Drive, Peterborough, Ontario, Canada K9J 0B9
P. 705.742.2297 F. 705.748.9944 E. wills@dmwills.com

5.0 Conclusion

The existing and proposed flooding hazard limits across the site have been determined. It has been confirmed that the proposed development will not increase flood potential to adjacent properties and that safe access will be provided from the site for emergency vehicles. The proposed grading plan should consider these flood limits and seek to minimize disturbance within the floodplain.

Respectfully submitted,

Chris Proctor-Bennett, P.Eng.
Water Resources Engineer

CPB/kr

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Statement of Limitations

This report has been prepared by D.M. Wills Associates Limited on behalf of Life at the Woodland Inc. to address the requirements of Otonabee Conservation.

The conclusions and recommendations in this report are based on available background documentation and discussions with applicable agencies at the time of preparation.

The report is intended to document the methodology and assumptions used to estimate the regulatory flood limits across the subject property and to demonstrate how the site can be developed in conformance with applicable regulations and without increasing flood potential to adjacent properties. The report is applicable only to the project described in the text, constructed substantially in accordance with the plans and details accompanying this report.

Any use which a third party makes of this report other than a Flood Impact Assessment for the proposed development is the responsibility of such third parties. D.M. Wills Associates Limited accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or action taken based on using this report for purposes other than a Flood Impact Assessment for the Life at the Woodland, Otonabee South-Monaghan development.

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6 Hour SCS Type II Intensity Hyetographs
2006 Peterborough Airport Weather Station
(mm/hr)

Time (min.)	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
0	0	0	0	0	0	0
15	1.6	2.1	2.5	2.9	3.3	3.6
30	1.6	2.1	2.5	2.9	3.3	3.6
45	2.3	3.2	3.7	4.4	4.9	5.4
60	2.3	3.2	3.7	4.4	4.9	5.4
75	2.3	3.2	3.7	4.4	4.9	5.4
90	2.3	3.2	3.7	4.4	4.9	5.4
105	3.9	5.2	6.2	7.3	8.1	9.0
120	3.9	5.2	6.2	7.3	8.1	9.0
135	4.6	6.3	7.4	8.8	9.8	10.8
150	4.6	6.3	7.4	8.8	9.8	10.8
165	23.2	31.4	36.9	43.7	48.9	53.9
180	60.4	81.78	95.9	113.7	127.0	140.2
195	8.5	11.5	13.5	16.0	17.9	19.8
210	8.5	11.5	13.5	16.0	17.9	19.8
225	3.9	5.2	6.2	7.3	8.1	9.0
240	3.9	5.2	6.2	7.3	8.1	9.0
255	3.1	4.2	4.9	5.8	6.5	7.2
270	3.1	4.2	4.9	5.8	6.5	7.2
285	2.3	3.2	3.7	4.4	4.9	5.4
300	2.3	3.2	3.7	4.4	4.9	5.4
315	1.6	2.1	2.5	2.9	3.3	3.6
330	1.6	2.1	2.5	2.9	3.3	3.6
345	1.6	2.1	2.5	2.9	3.3	3.6
360	1.6	2.1	2.5	2.9	3.3	3.6

Design Chart 1.04: Timmins Storm

	Depth		Percent of 12 hour
	(mm)	(inches)	
1st hour	15	0.6	8
2nd hour	20	0.8	10
3rd hour	10	0.4	6
4th hour	3	0.1	1
5th hour	5	0.2	3
6th hour	20	0.8	10
7th hour	43	1.7	23
8th hour	20	0.8	10
9th hour	23	0.9	12
10th hour	13	0.5	6
11th hour	13	0.5	7
12th hour	8	0.3	4
	193	7.6	100

Drainage Area (km^2)	Percentage
0 to 25	100.0
26 to 50	97
51 to 75	94
76 to 100	90
101 to 150	87
151 to 200	84
201 to 250	82
251 to 375	79
376 to 500	76
501 to 750	74
751 to 1000	70
1001 to 1250	68
1251 to 1500	66
1501 to 1800	65
1801 to 2100	64
2101 to 2300	63
2301 to 2600	62
2601 to 3900	58
3901 to 5200	56
5201 to 6500	53
6501 to 8000	50

Source: Ministry of Transportation, MTO (1989)

Design Chart 1.05: SCS Type II Distribution

6 hour			12 hour			24 hour		
Time end'g, hour	F_{inc} (%)	F_{cum} (%)	Time end'g, hour	F_{inc} (%)	F_{cum} (%)	Time end'g, hour	F_{inc} (%)	F_{cum} (%)
0	0	0	0	0	0	0	0	0
0.5	2	2	2	5	5	2	2.2	2.2
1	3	5	3	3	8	4	2.6	4.8
1.5	3	8	3.5	2	10	6	3.2	8.0
2	5	13	4	2	12	7	-	-
2.5	6	19	4.5	3	15	8	4.0	12.0
2.75	15	34	5	4	19	8.5	-	-
3	39	73	5.5	6	25	9	2.7	14.7
3.5	11	84	5.75	12	37	9.5	1.6	16.3
4	5	89	6	33	70	9.75	-	-
4.5	4	93	6.5	9	79	10	1.8	18.1
5	3	96	7	4	83	10.5	2.3	20.4
6	4	100	7.5	3	86	11	3.1	23.5
			8	3	89	11.5	4.8	28.3
			10	7	96	11.75	10.4	38.7
			12	4	100	12	27.6	66.3
						12.5	7.2	73.5
						13	3.7	77.2
						13.5	0.7	77.9
						14	4.1	82.0
						16	6.0	88.0
						20	7.2	95.2
						24	4.8	100

Source: Ministry of Natural Resources - MNR (1986)

Hydrologic Parameters for NORTH

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Project No: 10874
Project Name: Life at Woodland
Designed/Checked By: RC/CPB
Date: 13-Apr-21

Land Use

Agriculture	0.00	0.00	ha
Range	2.17	0.00	ha
Grass	0.16	0.00	ha
Woods	1.43	0.47	ha
Wetland	0.00	0.64	ha
Gravel	0.00	0.00	ha
Impervious	0.11	0.00	ha
SUM	**3.87**	**1.11**	
Hydrologic Soil Group[1]	B	C	
Soil Type	Otonabee Loam	Foxboro Silt Loam	
C	0.25	0.10	
CN (Nashyd)	63.2	58.9	

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	**4.98**	ha
Impervious Area	**0.11**	ha
Percent Impervious	**2.2%**	

	Pervious	
Length	140	m
US Elev	226.0	m
DS Elev	206.0	m
Slope	14.3	%
	Hilly	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Imperv.	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.40	0.30	0.19	0.14	0.05	0.76	0.90	0.25	n.a.
	C	0.53	0.36	0.24	0.16	0.05	0.84	0.90	0.10	
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	63.2	62.2
	C	82	76	74	71	50	89	98	58.9	58.9
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	8.8	8.9

Time of Concentration[6]

Total Length	140	m	
Average Slope	14.3	%	
Airport	14.1	min.	Flat: 0-2% Slopes Rolling: 2-6% Slopes Hilly: >6% Slopes
Bransby - Williams	4.0	min.	
Applicable Minimum[7]	**15.0**	min.	
Time to Peak	10.1	min.	
	0.17	**hr.**	

Composite Parameters

Drainage Area	4.98 ha	
Runoff Coefficient	0.22	
SCS Curve No.	62.2	61.4
Modified Curve No.[4], CN*	**64.6**	63.8
Initial Abstraction.	**8.8**	8.9

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Based on the results of the Uplands Method
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 15 minutes

Visual Otthymo Model for NORTH	Sheet 2 of 2

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Project No: 10874
Project Name: Life at Woodland
Designed/Checked By: RC/CPB
Date: 13-Apr-21

Design Storm (yr)	24hr SCS	12hr SCS	6hr SCS	1hr AES	12hr AES	1hr Chic	4hr Chic	6 hr Chic
2								
5								
10								
25								
50								
100	0.544	**0.545**	**0.545**					
Regional	**0.388**							

Notes:

1. Storm used to determine peak flow values **0**

NASHYD	
DT (min)	5.0
Area (ha)	4.98
DWF (m3/s) - Default [0.0]	0.0
CN*	64.6
IA (mm)	8.8
N - Default [3.0]	3
TP (hr)	0.17

Hydrologic Parameters for SOUTH

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Project No: 10874
Project Name: Life at Woodland
Designed/Checked By: RC/CPB
Date: 13-Apr-21

Land Use

Agriculture	0.00	0.00	ha
Range	2.29	0.00	ha
Grass	3.45	0.00	ha
Woods	2.00	0.00	ha
Wetland	0.00	0.66	ha
Gravel	0.00	0.00	ha
Impervious	0.51	0.00	ha
SUM	**8.25**	**0.66**	
Hydrologic Soil Group[1]	B	C	
Soil Type	Otonabee Loam	Foxboro Silt Loam	
C	0.25	0.05	
CN (Nashyd)	63.7	50.0	

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	**8.91**	ha
Impervious Area	**0.51**	ha
Percent Impervious	**5.7%**	

	Pervious	
Length	140	m
US Elev	226.0	m
DS Elev	206.0	m
Slope	14.3	%
	Hilly	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Imperv.	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	**B**	0.40	0.30	0.19	0.14	0.05	0.76	0.90	0.25	
	C	0.53	0.36	0.24	0.16	0.05	0.84	0.90	0.05	n.a.
SCS Curve No.[3], CN	**B**	74	65	61	58	50	85	98	63.7	61.4
	C	82	76	74	71	50	89	98	50.0	50.0
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	7.1	7.4

Time of Concentration[6]

Total Length	140	m	
Average Slope	14.3	%	
Airport	13.8	min.	Flat: 0-2% Slopes Rolling: 2-6% Slopes Hilly: >6% Slopes
Bransby - Williams	3.8	min.	
Applicable Minimum[7]	**15.0**	min.	
Time to Peak	10.1	min.	
	0.17	**hr.**	

Composite Parameters

Drainage Area	8.91 ha	
Runoff Coefficient	0.24	
SCS Curve No.	62.7	60.5
Modified Curve No.[4], CN*	**64.0**	62.0
Initial Abstraction.	**7.1**	7.4

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Based on the results of the Uplands Method
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 15 minutes

Visual Otthymo Model for SOUTH

WILLS

Project No: 10874
Project Name: Life at Woodland
Designed/Checked By: RC/CPB
Date: 13-Apr-21

Design Storm (yr)	24hr SCS	12hr SCS	6hr SCS	1hr AES	12hr AES	1hr Chic	4hr Chic	6 hr Chic
2								
5								
10								
25								
50								
100	0.982	0.986	**0.987**					
Regional	**0.692**							

Notes:

1. Storm used to determine peak flow values **0**

NASHYD	
DT (min)	5.0
Area (ha)	8.91
DWF (m3/s) - Default [0.0]	0.0
CN*	64.0
IA (mm)	7.1
N - Default [3.0]	3
TP (hr)	0.17

```
================================================================================================================

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

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


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DATE: 02-26-2021                          TIME: 05:12:54

USER:


COMMENTS: _____________________________________________________


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  ** SIMULATION NUMBER:   1 **
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|                  |              860fbb98-44ea-4f05-86f9-2da5dc98138e\5585e635
| Ptotal= 89.93 mm |    Comments: 100-Year, 6 hour SCS Type II - Peterboro
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    3.60 |  1.75    9.00 |  3.25   19.80 |  4.75    5.40
                0.50    3.60 |  2.00    9.00 |  3.50   19.80 |  5.00    5.40
                0.75    5.40 |  2.25   10.80 |  3.75    9.00 |  5.25    3.60
                1.00    5.40 |  2.50   10.80 |  4.00    9.00 |  5.50    3.60
                1.25    5.40 |  2.75   53.90 |  4.25    7.20 |  5.75    3.60
                1.50    5.40 |  3.00  140.20 |  4.50    7.20 |  6.00    3.60

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| CALIB            |
| NASHYD    (1102) |   Area     (ha)=   4.98   Curve Number    (CN)= 64.6
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    3.60 | 1.583    9.00 | 3.083   19.80 |  4.58    5.40
               0.167    3.60 | 1.667    9.00 | 3.167   19.80 |  4.67    5.40
               0.250    3.60 | 1.750    9.00 | 3.250   19.80 |  4.75    5.40
               0.333    3.60 | 1.833    9.00 | 3.333   19.80 |  4.83    5.40
               0.417    3.60 | 1.917    9.00 | 3.417   19.80 |  4.92    5.40
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```
               0.500    3.60 | 2.000    9.00 | 3.500   19.80 |  5.00    5.40
               0.583    5.40 | 2.083   10.80 | 3.583    9.00 |  5.08    3.60
               0.667    5.40 | 2.167   10.80 | 3.667    9.00 |  5.17    3.60
               0.750    5.40 | 2.250   10.80 | 3.750    9.00 |  5.25    3.60
               0.833    5.40 | 2.333   10.80 | 3.833    9.00 |  5.33    3.60
               0.917    5.40 | 2.417   10.80 | 3.917    9.00 |  5.42    3.60
               1.000    5.40 | 2.500   10.80 | 4.000    9.00 |  5.50    3.60
               1.083    5.40 | 2.583   53.90 | 4.083    7.20 |  5.58    3.60
               1.167    5.40 | 2.667   53.90 | 4.167    7.20 |  5.67    3.60
               1.250    5.40 | 2.750   53.90 | 4.250    7.20 |  5.75    3.60
               1.333    5.40 | 2.833  140.20 | 4.333    7.20 |  5.83    3.60
               1.417    5.40 | 2.917  140.20 | 4.417    7.20 |  5.92    3.60
               1.500    5.40 | 3.000  140.20 | 4.500    7.20 |  6.00    3.60

     Unit Hyd Qpeak  (cms)=   1.119

     PEAK FLOW       (cms)=   0.545 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  29.766
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.331

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

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--------------------
| CALIB            |
| NASHYD    (1101) |   Area     (ha)=   8.91   Curve Number    (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   7.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   2.002

     PEAK FLOW       (cms)=   0.987 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  30.286
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.337

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

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  ****************************
  ** SIMULATION NUMBER:   2 **
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|    READ STORM    |    Filename: C:\Users\cproctorbennett\AppD
|                  |              ata\Local\Temp\
|                  |              860fbb98-44ea-4f05-86f9-2da5dc98138e\76c8441d
| Ptotal= 98.48 mm |    Comments: 100-Year, 12 hour SCS Type II, Environme
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.50 |  3.25    3.90 |  6.25   17.70 |  9.25    3.40
                0.50    2.50 |  3.50    3.90 |  6.50   17.70 |  9.50    3.40
                0.75    2.50 |  3.75    3.90 |  6.75    7.90 |  9.75    3.40
                1.00    2.50 |  4.00    3.90 |  7.00    7.90 | 10.00    3.40
                1.25    2.50 |  4.25    5.90 |  7.25    5.90 | 10.25    2.00
                1.50    2.50 |  4.50    5.90 |  7.50    5.90 | 10.50    2.00
                1.75    2.50 |  4.75    7.90 |  7.75    5.90 | 10.75    2.00
                2.00    2.50 |  5.00    7.90 |  8.00    5.90 | 11.00    2.00
                2.25    3.00 |  5.25   11.80 |  8.25    3.40 | 11.25    2.00
                2.50    3.00 |  5.50   11.80 |  8.50    3.40 | 11.50    2.00
                2.75    3.00 |  5.75   47.20 |  8.75    3.40 | 11.75    2.00
                3.00    3.00 |  6.00  129.90 |  9.00    3.40 | 12.00    2.00

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| CALIB            |
| NASHYD    (1102) |   Area     (ha)=   4.98   Curve Number    (CN)= 64.6
|ID= 1 DT= 5.0 min |   Ia       (mm)=   8.80   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.50	3.083	3.90	6.083	17.70	9.08	3.40
0.167	2.50	3.167	3.90	6.167	17.70	9.17	3.40
0.250	2.50	3.250	3.90	6.250	17.70	9.25	3.40
0.333	2.50	3.333	3.90	6.333	17.70	9.33	3.40
0.417	2.50	3.417	3.90	6.417	17.70	9.42	3.40
0.500	2.50	3.500	3.90	6.500	17.70	9.50	3.40
0.583	2.50	3.583	3.90	6.583	7.90	9.58	3.40
0.667	2.50	3.667	3.90	6.667	7.90	9.67	3.40
0.750	2.50	3.750	3.90	6.750	7.90	9.75	3.40
0.833	2.50	3.833	3.90	6.833	7.90	9.83	3.40
0.917	2.50	3.917	3.90	6.917	7.90	9.92	3.40
1.000	2.50	4.000	3.90	7.000	7.90	10.00	3.40
1.083	2.50	4.083	5.90	7.083	5.90	10.08	2.00
1.167	2.50	4.167	5.90	7.167	5.90	10.17	2.00
1.250	2.50	4.250	5.90	7.250	5.90	10.25	2.00
1.333	2.50	4.333	5.90	7.333	5.90	10.33	2.00
1.417	2.50	4.417	5.90	7.417	5.90	10.42	2.00
1.500	2.50	4.500	5.90	7.500	5.90	10.50	2.00
1.583	2.50	4.583	7.90	7.583	5.90	10.58	2.00
1.667	2.50	4.667	7.90	7.667	5.90	10.67	2.00
1.750	2.50	4.750	7.90	7.750	5.90	10.75	2.00
1.833	2.50	4.833	7.90	7.833	5.90	10.83	2.00
1.917	2.50	4.917	7.90	7.917	5.90	10.92	2.00
2.000	2.50	5.000	7.90	8.000	5.90	11.00	2.00
2.083	3.00	5.083	11.80	8.083	3.40	11.08	2.00
2.167	3.00	5.167	11.80	8.167	3.40	11.17	2.00
2.250	3.00	5.250	11.80	8.250	3.40	11.25	2.00
2.333	3.00	5.333	11.80	8.333	3.40	11.33	2.00
2.417	3.00	5.417	11.80	8.417	3.40	11.42	2.00
2.500	3.00	5.500	11.80	8.500	3.40	11.50	2.00
2.583	3.00	5.583	47.20	8.583	3.40	11.58	2.00
2.667	3.00	5.667	47.20	8.667	3.40	11.67	2.00
2.750	3.00	5.750	47.20	8.750	3.40	11.75	2.00
2.833	3.00	5.833	129.90	8.833	3.40	11.83	2.00
2.917	3.00	5.917	129.90	8.917	3.40	11.92	2.00
3.000	3.00	6.000	129.90	9.000	3.40	12.00	2.00

Unit Hyd Qpeak (cms)= 1.119

PEAK FLOW (cms)= 0.545 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 35.012
TOTAL RAINFALL (mm)= 98.475
RUNOFF COEFFICIENT = 0.356

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

CALIB	
NASHYD (1101)	Area (ha)= 8.91 Curve Number (CN)= 64.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.10 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 2.002

PEAK FLOW (cms)= 0.986 (i)
TIME TO PEAK (hrs)= 6.000
RUNOFF VOLUME (mm)= 35.516
TOTAL RAINFALL (mm)= 98.475
RUNOFF COEFFICIENT = 0.361

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

****
** SIMULATION NUMBER: 3 **
****

READ STORM	Filename: C:\Users\cproctorbennett\AppD

	ata\Local\Temp\
	860fbb98-44ea-4f05-86f9-2da5dc98138e\0bd5fc7e
Ptotal=108.80 mm	Comments: 100-Year, 24 hour SCS Type II, Environme

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.20	6.25	2.20	12.25	15.70	18.25	2.00
0.50	1.20	6.50	2.20	12.50	15.70	18.50	2.00
0.75	1.20	6.75	2.20	12.75	8.00	18.75	2.00
1.00	1.20	7.00	2.20	13.00	8.00	19.00	2.00
1.25	1.20	7.25	2.20	13.25	1.50	19.25	2.00
1.50	1.20	7.50	2.20	13.50	1.50	19.50	2.00
1.75	1.20	7.75	2.20	13.75	8.90	19.75	2.00
2.00	1.20	8.00	2.20	14.00	8.90	20.00	2.00
2.25	1.40	8.25	2.90	14.25	3.30	20.25	1.30
2.50	1.40	8.50	2.90	14.50	3.30	20.50	1.30
2.75	1.40	8.75	2.90	14.75	3.30	20.75	1.30
3.00	1.40	9.00	2.90	15.00	3.30	21.00	1.30
3.25	1.40	9.25	3.50	15.25	3.30	21.25	1.30
3.50	1.40	9.50	3.50	15.50	3.30	21.50	1.30
3.75	1.40	9.75	3.90	15.75	3.30	21.75	1.30
4.00	1.40	10.00	3.90	16.00	3.30	22.00	1.30
4.25	1.70	10.25	5.00	16.25	2.00	22.25	1.30
4.50	1.70	10.50	5.00	16.50	2.00	22.50	1.30
4.75	1.70	10.75	6.70	16.75	2.00	22.75	1.30
5.00	1.70	11.00	6.70	17.00	2.00	23.00	1.30
5.25	1.70	11.25	10.40	17.25	2.00	23.25	1.30
5.50	1.70	11.50	10.40	17.50	2.00	23.50	1.30
5.75	1.70	11.75	45.20	17.75	2.00	23.75	1.30
6.00	1.70	12.00	120.00	18.00	2.00	24.00	1.30

CALIB	
NASHYD (1102)	Area (ha)= 4.98 Curve Number (CN)= 64.6
ID= 1 DT= 5.0 min	Ia (mm)= 8.80 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.17

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.20	6.083	2.20	12.083	15.71	18.08	2.00
0.167	1.20	6.167	2.20	12.167	15.70	18.17	2.00
0.250	1.20	6.250	2.20	12.250	15.70	18.25	2.00
0.333	1.20	6.333	2.20	12.333	15.70	18.33	2.00
0.417	1.20	6.417	2.20	12.417	15.70	18.42	2.00
0.500	1.20	6.500	2.20	12.500	15.70	18.50	2.00
0.583	1.20	6.583	2.20	12.583	8.00	18.58	2.00
0.667	1.20	6.667	2.20	12.667	8.00	18.67	2.00
0.750	1.20	6.750	2.20	12.750	8.00	18.75	2.00
0.833	1.20	6.833	2.20	12.833	8.00	18.83	2.00
0.917	1.20	6.917	2.20	12.917	8.00	18.92	2.00
1.000	1.20	7.000	2.20	13.000	8.00	19.00	2.00
1.083	1.20	7.083	2.20	13.083	1.50	19.08	2.00
1.167	1.20	7.167	2.20	13.167	1.50	19.17	2.00
1.250	1.20	7.250	2.20	13.250	1.50	19.25	2.00
1.333	1.20	7.333	2.20	13.333	1.50	19.33	2.00
1.417	1.20	7.417	2.20	13.417	1.50	19.42	2.00
1.500	1.20	7.500	2.20	13.500	1.50	19.50	2.00
1.583	1.20	7.583	2.20	13.583	8.90	19.58	2.00
1.667	1.20	7.667	2.20	13.667	8.90	19.67	2.00
1.750	1.20	7.750	2.20	13.750	8.90	19.75	2.00
1.833	1.20	7.833	2.20	13.833	8.90	19.83	2.00
1.917	1.20	7.917	2.20	13.917	8.90	19.92	2.00
2.000	1.20	8.000	2.20	14.000	8.90	20.00	2.00
2.083	1.40	8.083	2.90	14.083	3.30	20.08	1.30
2.167	1.40	8.167	2.90	14.167	3.30	20.17	1.30
2.250	1.40	8.250	2.90	14.250	3.30	20.25	1.30
2.333	1.40	8.333	2.90	14.333	3.30	20.33	1.30
2.417	1.40	8.417	2.90	14.417	3.30	20.42	1.30
2.500	1.40	8.500	2.90	14.500	3.30	20.50	1.30
2.583	1.40	8.583	2.90	14.583	3.30	20.58	1.30
2.667	1.40	8.667	2.90	14.667	3.30	20.67	1.30

2.750	1.40	8.750	2.90	14.750	3.30	20.75	1.30
2.833	1.40	8.833	2.90	14.833	3.30	20.83	1.30
2.917	1.40	8.917	2.90	14.917	3.30	20.92	1.30
3.000	1.40	9.000	2.90	15.000	3.30	21.00	1.30
3.083	1.40	9.083	3.50	15.083	3.30	21.08	1.30
3.167	1.40	9.167	3.50	15.167	3.30	21.17	1.30
3.250	1.40	9.250	3.50	15.250	3.30	21.25	1.30
3.333	1.40	9.333	3.50	15.333	3.30	21.33	1.30
3.417	1.40	9.417	3.50	15.417	3.30	21.42	1.30
3.500	1.40	9.500	3.50	15.500	3.30	21.50	1.30
3.583	1.40	9.583	3.90	15.583	3.30	21.58	1.30
3.667	1.40	9.667	3.90	15.667	3.30	21.67	1.30
3.750	1.40	9.750	3.90	15.750	3.30	21.75	1.30
3.833	1.40	9.833	3.90	15.833	3.30	21.83	1.30
3.917	1.40	9.917	3.90	15.917	3.30	21.92	1.30
4.000	1.40	10.000	3.90	16.000	3.30	22.00	1.30
4.083	1.70	10.083	5.00	16.083	2.00	22.08	1.30
4.167	1.70	10.167	5.00	16.167	2.00	22.17	1.30
4.250	1.70	10.250	5.00	16.250	2.00	22.25	1.30
4.333	1.70	10.333	5.00	16.333	2.00	22.33	1.30
4.417	1.70	10.417	5.00	16.417	2.00	22.42	1.30
4.500	1.70	10.500	5.00	16.500	2.00	22.50	1.30
4.583	1.70	10.583	6.70	16.583	2.00	22.58	1.30
4.667	1.70	10.667	6.70	16.667	2.00	22.67	1.30
4.750	1.70	10.750	6.70	16.750	2.00	22.75	1.30
4.833	1.70	10.833	6.70	16.833	2.00	22.83	1.30
4.917	1.70	10.917	6.70	16.917	2.00	22.92	1.30
5.000	1.70	11.000	6.70	17.000	2.00	23.00	1.30
5.083	1.70	11.083	10.40	17.083	2.00	23.08	1.30
5.167	1.70	11.167	10.40	17.167	2.00	23.17	1.30
5.250	1.70	11.250	10.40	17.250	2.00	23.25	1.30
5.333	1.70	11.333	10.40	17.333	2.00	23.33	1.30
5.417	1.70	11.417	10.40	17.417	2.00	23.42	1.30
5.500	1.70	11.500	10.40	17.500	2.00	23.50	1.30
5.583	1.70	11.583	45.20	17.583	2.00	23.58	1.30
5.667	1.70	11.667	45.20	17.667	2.00	23.67	1.30
5.750	1.70	11.750	45.20	17.750	2.00	23.75	1.30
5.833	1.70	11.833	119.99	17.833	2.00	23.83	1.30
5.917	1.70	11.917	120.00	17.917	2.00	23.92	1.30
6.000	1.70	12.000	120.00	18.000	2.00	24.00	1.30

Unit Hyd Qpeak (cms)= 1.119

PEAK FLOW (cms)= 0.544 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 41.659
TOTAL RAINFALL (mm)= 108.800
RUNOFF COEFFICIENT = 0.383

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

CALIB							
NASHYD (1101)	Area (ha)=	8.91	Curve Number (CN)=	64.0			
ID= 1 DT= 5.0 min	Ia (mm)=	7.10	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.17					

Unit Hyd Qpeak (cms)= 2.002

PEAK FLOW (cms)= 0.982 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 42.139
TOTAL RAINFALL (mm)= 108.800
RUNOFF COEFFICIENT = 0.387

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

** SIMULATION NUMBER: 4 **

READ STORM	Filename: C:\Users\cproctorbennett\AppData\Local\Temp\

	860fbb98-44ea-4f05-86f9-2da5dc98138e\8e342073
Ptotal=193.00 mm	Comments: 12 hour Timmins Regional Storm

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	15.00	3.25	3.00	6.25	43.00	9.25	13.00
0.50	15.00	3.50	3.00	6.50	43.00	9.50	13.00
0.75	15.00	3.75	3.00	6.75	43.00	9.75	13.00
1.00	15.00	4.00	3.00	7.00	43.00	10.00	13.00
1.25	20.00	4.25	5.00	7.25	20.00	10.25	13.00
1.50	20.00	4.50	5.00	7.50	20.00	10.50	13.00
1.75	20.00	4.75	5.00	7.75	20.00	10.75	13.00
2.00	20.00	5.00	5.00	8.00	20.00	11.00	13.00
2.25	10.00	5.25	20.00	8.25	23.00	11.25	8.00
2.50	10.00	5.50	20.00	8.50	23.00	11.50	8.00
2.75	10.00	5.75	20.00	8.75	23.00	11.75	8.00
3.00	10.00	6.00	20.00	9.00	23.00	12.00	8.00

CALIB							
NASHYD (1102)	Area (ha)=	4.98	Curve Number (CN)=	64.6			
ID= 1 DT= 5.0 min	Ia (mm)=	8.80	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.17					

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	15.00	3.083	3.00	6.083	43.00	9.08	13.00
0.167	15.00	3.167	3.00	6.167	43.00	9.17	13.00
0.250	15.00	3.250	3.00	6.250	43.00	9.25	13.00
0.333	15.00	3.333	3.00	6.333	43.00	9.33	13.00
0.417	15.00	3.417	3.00	6.417	43.00	9.42	13.00
0.500	15.00	3.500	3.00	6.500	43.00	9.50	13.00
0.583	15.00	3.583	3.00	6.583	43.00	9.58	13.00
0.667	15.00	3.667	3.00	6.667	43.00	9.67	13.00
0.750	15.00	3.750	3.00	6.750	43.00	9.75	13.00
0.833	15.00	3.833	3.00	6.833	43.00	9.83	13.00
0.917	15.00	3.917	3.00	6.917	43.00	9.92	13.00
1.000	15.00	4.000	3.00	7.000	43.00	10.00	13.00
1.083	20.00	4.083	5.00	7.083	20.00	10.08	13.00
1.167	20.00	4.167	5.00	7.167	20.00	10.17	13.00
1.250	20.00	4.250	5.00	7.250	20.00	10.25	13.00
1.333	20.00	4.333	5.00	7.333	20.00	10.33	13.00
1.417	20.00	4.417	5.00	7.417	20.00	10.42	13.00
1.500	20.00	4.500	5.00	7.500	20.00	10.50	13.00
1.583	20.00	4.583	5.00	7.583	20.00	10.58	13.00
1.667	20.00	4.667	5.00	7.667	20.00	10.67	13.00
1.750	20.00	4.750	5.00	7.750	20.00	10.75	13.00
1.833	20.00	4.833	5.00	7.833	20.00	10.83	13.00
1.917	20.00	4.917	5.00	7.917	20.00	10.92	13.00
2.000	20.00	5.000	5.00	8.000	20.00	11.00	13.00
2.083	10.00	5.083	20.00	8.083	23.00	11.08	8.00
2.167	10.00	5.167	20.00	8.167	23.00	11.17	8.00
2.250	10.00	5.250	20.00	8.250	23.00	11.25	8.00
2.333	10.00	5.333	20.00	8.333	23.00	11.33	8.00
2.417	10.00	5.417	20.00	8.417	23.00	11.42	8.00
2.500	10.00	5.500	20.00	8.500	23.00	11.50	8.00
2.583	10.00	5.583	20.00	8.583	23.00	11.58	8.00
2.667	10.00	5.667	20.00	8.667	23.00	11.67	8.00
2.750	10.00	5.750	20.00	8.750	23.00	11.75	8.00
2.833	10.00	5.833	20.00	8.833	23.00	11.83	8.00
2.917	10.00	5.917	20.00	8.917	23.00	11.92	8.00
3.000	10.00	6.000	20.00	9.000	23.00	12.00	8.00

Unit Hyd Qpeak (cms)= 1.119

PEAK FLOW (cms)= 0.388 (i)
TIME TO PEAK (hrs)= 7.000
RUNOFF VOLUME (mm)= 104.544
TOTAL RAINFALL (mm)= 193.000
RUNOFF COEFFICIENT = 0.542

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

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| CALIB            |
| NASHYD    (1101) |   Area     (ha)=   8.91   Curve Number   (CN)= 64.0
|ID= 1 DT= 5.0 min |   Ia       (mm)=   7.10   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   2.002

     PEAK FLOW       (cms)=   0.692 (i)
     TIME TO PEAK    (hrs)=   7.000
     RUNOFF VOLUME    (mm)= 104.738
     TOTAL RAINFALL   (mm)= 193.000
     RUNOFF COEFFICIENT   =   0.543

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

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 FINISH
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HEC-RAS Plan: EX Profile: 100-YR 6-hr SCS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
South	South	390	100-YR 6-hr SCS	0.99	206.51	206.70		206.70	0.004314	0.28	3.47	26.18	0.25
South	South	250	100-YR 6-hr SCS	0.99	204.81	205.06	205.06	205.12	0.075537	1.09	0.91	7.77	1.02
South	South	150	100-YR 6-hr SCS	0.99	203.72	204.34		204.34	0.000818	0.24	4.16	11.69	0.13
South	South	118	100-YR 6-hr SCS	0.99	203.37	204.34	203.84	204.34	0.000013	0.05	21.96	37.65	0.02
South	South	109		Culvert									
South	South	100	100-YR 6-hr SCS	0.99	202.73	202.97	202.93	202.98	0.030022	0.61	1.63	16.93	0.62
North	North	190	100-YR 6-hr SCS	0.54	205.82	205.97	205.93	205.98	0.019854	0.41	1.31	17.72	0.49
North	North	120	100-YR 6-hr SCS	0.54	204.44	204.57		204.57	0.020212	0.38	1.43	22.02	0.48
North	North	100	100-YR 6-hr SCS	0.54	203.90	204.07	204.04	204.08	0.030035	0.55	0.99	11.98	0.61

HEC-RAS Plan: PR Profile: 100-YR 6-hr SCS

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
South	South	390	100-YR 6-hr SCS	0.99	206.51	206.70		206.70	0.004314	0.28	3.47	26.18	0.25
South	South	250	100-YR 6-hr SCS	0.99	204.81	205.06	205.06	205.12	0.075537	1.09	0.91	7.77	1.02
South	South	150	100-YR 6-hr SCS	0.99	203.72	204.34		204.34	0.000818	0.24	4.16	11.69	0.13
South	South	118	100-YR 6-hr SCS	0.99	203.37	204.34	203.84	204.34	0.000013	0.05	21.96	37.65	0.02
South	South	109		Culvert									
South	South	100	100-YR 6-hr SCS	0.99	202.73	202.97	202.93	202.98	0.030022	0.61	1.63	16.93	0.62
North	North	190	100-YR 6-hr SCS	0.54	205.82	205.93	205.93	205.96	0.091410	0.74	0.74	13.31	0.99
North	North	120	100-YR 6-hr SCS	0.54	204.44	205.01	204.64	205.02	0.001830	0.49	1.12	41.71	0.21
North	North	110		Culvert									
North	North	100	100-YR 6-hr SCS	0.54	203.90	204.07	204.04	204.08	0.030035	0.55	0.99	11.98	0.61