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10th Line Beckwith Subdivision Hydrologic Impact Study

2736 10th Line Beckwith, Carleton Place

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10TH LINE BECKWITH SUBDIVISION

HYDROLOGIC IMPACT STUDY

2736 10th Line Beckwith, Carleton Place

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

October 15, 2025

Novatech File: 122190
Report Ref: R-2025-087

October 15, 2025

BY EMAIL

Township of Beckwith
2022 Beckwith Park Lane
Carleton Place ON K7C 3P2

Attention: Enam Hoque, Planning Administrator

Reference: 10th Line Subdivision
Hydrologic Impact Study
Our File No.: 122190

Please find enclosed the Hydrologic Impact Study for the 10th Line Beckwith Subdivision. The report outlines the potential impacts to the hydrologic function of features on the Subject Site and proposed mitigation measures to meet the requirements of the Township of Beckwith and Mississippi Valley Conservation Authority and is submitted in support of the application for Draft Plan of Subdivision Approval.

A copy of the report is being forwarded directly to Mississippi Valley Conservation Authority.

This report is to be read in conjunction with the Environmental Impact Statement (Gemtec, October 9, 2025).

If you have any questions, please call the undersigned.

Yours truly,

NOVATECH

L Bowley.

Lisa Bowley, P.Eng.
Senior Project Manager
Land Development Engineering

Encl.

cc: 1384341 Ontario Ltd. – Marko Cekic
Mississippi Valley Conservation Authority – Diane Reid
County of Lanark – Koren Lam

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

LIST OF DRAWINGS

1.0 INTRODUCTION

Novatech has been retained to prepare a Hydrologic Impact Study (HIS) for the proposed 10th Line Beckwith residential subdivision. The site is located on Part of the southwest half of Lot 11, Concession 10, in the Township of Beckwith, County of Lanark; Bounded by Lake Park Road to the northwest, and 10th Line Beckwith Road to the southeast. There are existing residential developments to the east and west of the site. Refer to **Figure 1** – **Key Plan**.

1.1 Purpose

This report outlines the characteristics of the existing local unevaluated wetland located on the subject property, the effects of the proposed development on this existing wetland, and the proposed mitigation measures, in accordance with the Mississippi Valey Conservation Authority (MVCA) Ontario Regulation 153/06, Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation. Regulation 153/06 prohibits development within wetlands and areas that could interfere with the hydrological function of wetlands and watercourses.

This report should be read in conjunction with:

- Environmental Impact Statement – Proposed Plan of Subdivision Part of Lot 11, Concession 10, Geographic Township of Beckwith, prepared by Gemtec, October 9, 2025;
- Geotechnical Investigation – Proposed Residential Development, prepared by Paterson Group, August 28, 2025;
- Servicing Options and Conceptual Stormwater Management Report – 10th Line Subdivision, prepared by Novatech, R-2025-086, October 2025.

1.2 Existing Site Conditions

The site is approximately 41.5 ha in size and is currently undeveloped. Based on the Environmental Impact Statement, the southeastern portion of the site is generally densely forested, with the northwestern portion of the site consisting of a mix of forested areas and open grassed areas. Along the southwestern boundary of the site, adjacent to the existing residential development (Hayshore Estates Subdivision) is an local unevaluated wetland. Refer to **Figure 2 – Existing Conditions**.

The site generally slopes from the northeast boundary of the site to the southwest with elevations ranging between approximately 145m to 140m. Based on the geotechnical investigation, the soils on this site consist primarily of topsoil underlain by silty sand and/or glacial till followed by bedrock, or topsoil directly underlain by bedrock. Bedrock depths range from 0.1 to 1.6m below the ground surface.

2.0 POTENTIALLY IMPACTED FEATURE

During the fieldwork completed as a part of the Environmental Impact Statement (EIS) prepared by GEMTEC, one area of interest was identified.

2.1 Local Unevaluated Wetland

The EIS has identified an unevaluated wetland located in the centre of the property along the southwestern boundary of the site, adjacent to an existing residential development (Hayshore Estates). During site investigations it was determined that the unevaluated wetland is shallow and ephemeral in nature and does not have any connectivity to any off-site permanent surface water features. The wetland does not contain any small-bodied fish species nor provide any fish habitat.

The local, unevaluated wetland is comprised of a low, wet, vegetated area. MVCA mapping indicates the wetland encompasses approximately 1.2 ha within the subject site. Refer to MVCA mapping in **Appendix A** and **Figure 2 – Existing Conditions**.

3.0 ASSESSMENT OF HYDROLOGIC IMPACTS

The hydrologic impacts of the proposed development are discussed in the following sections. Preliminary design details for the site grading, proposed drainage systems, and stormwater management facilities are outlined in the Servicing Options and Conceptual Stormwater Management Report.

3.1 Impacts to Unevaluated Wetland

As there is no proposed in-water work proposed for the development, the most significant potential impacts to the wetland include on-site encroachment, alterations to the hydraulic regime, and vegetation loss. Other potential impacts include short duration construction impacts such as heavy machinery encroachment and noise generation, and long-term human disturbances such as dumping of refuse and trampling. As outlined in the EIS a minimum 15m setback is recommended to protect core habitat within the local feature.

3.1.1 Hydrologic Water Balance

A preliminary water balance assessing the change in infiltration as a result of the proposed development has been prepared and is included as a part of **Appendix B**. The preliminary results of the water balance indicate that there will be a decrease of approximately 23mm/year in infiltration across the site. Measures to increase the post-development infiltration to meet pre-development levels will be examined at the detailed design stage.

Runoff from the site will continue to be directed to the wetland to maintain it's existing function. Overflow from the wetland will then be directed through a culvert perched 10cm above the bottom of the wetland and a large broad-crested weir to a rearyard swale which outlets to a proposed stormwater management dry pond.

3.1.2 Wetland Water Quality

The proposed stormwater management strategy for the site intends to maintain the same tributary drainage area to the wetland under post-development conditions. Runoff from the development is to be conveyed to the wetland through water quality swales (roadside ditches) which will provide water quality treatment and capture of suspended solids. Further details are provided in the Servicing Options and Conceptual Stormwater Management Report. As such, post-development wetland water quality is not expected to be negatively impacted by the proposed development.

3.1.3 Proposed Mitigation Measures

Wetland water quality concerns are more likely to be associated with construction activities. These concerns will be addressed by an erosion and sediment control plan that mitigates with risk of sediment-laden runoff to the wetland during construction. Erosion and sediment control measures to be implemented along the boundary of the wetland could include but are not limited to the following:

- Heavy-duty sediment fencing would be installed along the boundary of the wetland adjacent to construction;
- Straw bale barriers would be installed in drainage ditches to mitigate the risk of sediment-laden runoff to the wetland;
- Straw and mulch would be applied to disturbed soils for temporary erosion protection, prior to the application of topsoil and sod;

All erosion and sediment control measures are to be installed to the satisfaction of the engineer, the Township and the conservation authority prior to undertaking any site alterations (filling, grading, removal of vegetation, etc.) and remain present during all phases of site preparation and construction.

4.0 CONCLUSIONS

Conclusions are as follows:

- There are no anticipated changes to the local unevaluated wetland and runoff from a large portion of the site will continue to be directed to the wetland to maintain existing drainage patterns.
- Water quality treatment of stormwater runoff is to be provided by grassed water quality swales (roadside ditches and rear-yard swales) before outletting to the wetland area.
- Based on the Environmental Impact Statement, the area of the wetland would not be impacted by the proposed development and a 15m setback would be sufficient to protect core habitat within the local wetland.
- A culvert perched 10cm above the bottom of the wetland would maintain the existing wet-weather water level within the wetland.

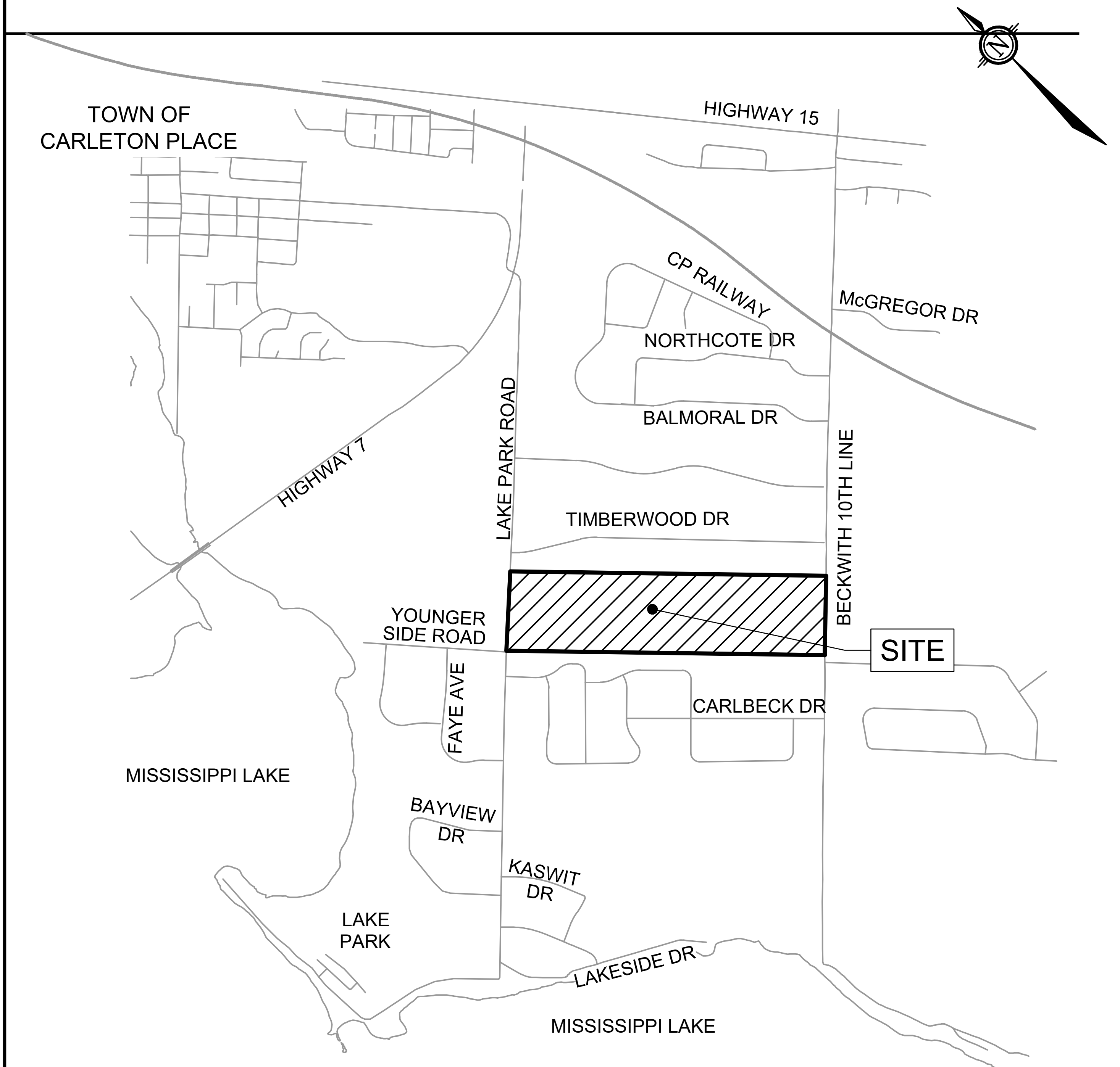
NOVATECH

Prepared by:

Kallie Auld, P.Eng.
Project Manager
Water Resources Engineering

Reviewed by:

Lisa Bowley, P.Eng.
Senior Project Manager
Land Development Engineering



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KEY PLAN

TOWNSHIP OF BECKWITH

10th LINE BECKWITH SUBDIVISION

DATE	JOB	FIGURE
SEP 2025	122190	FIGURE 1

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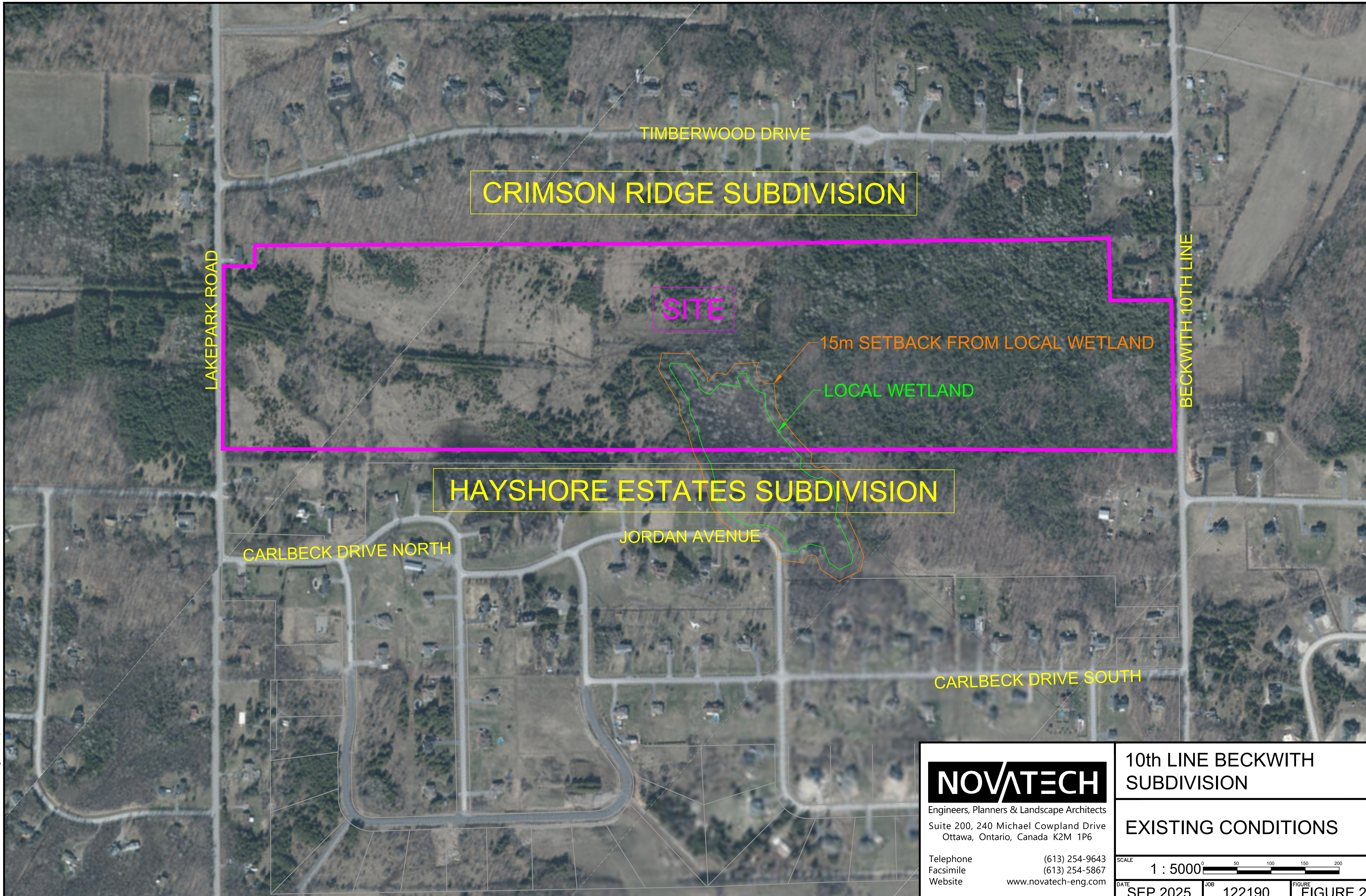

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10th LINE BECKWITH SUBDIVISION

EXISTING CONDITIONS

SCALE	DATE	JOB	FIGURE
1 : 5000	SEP 2025	122190	FIGURE 2

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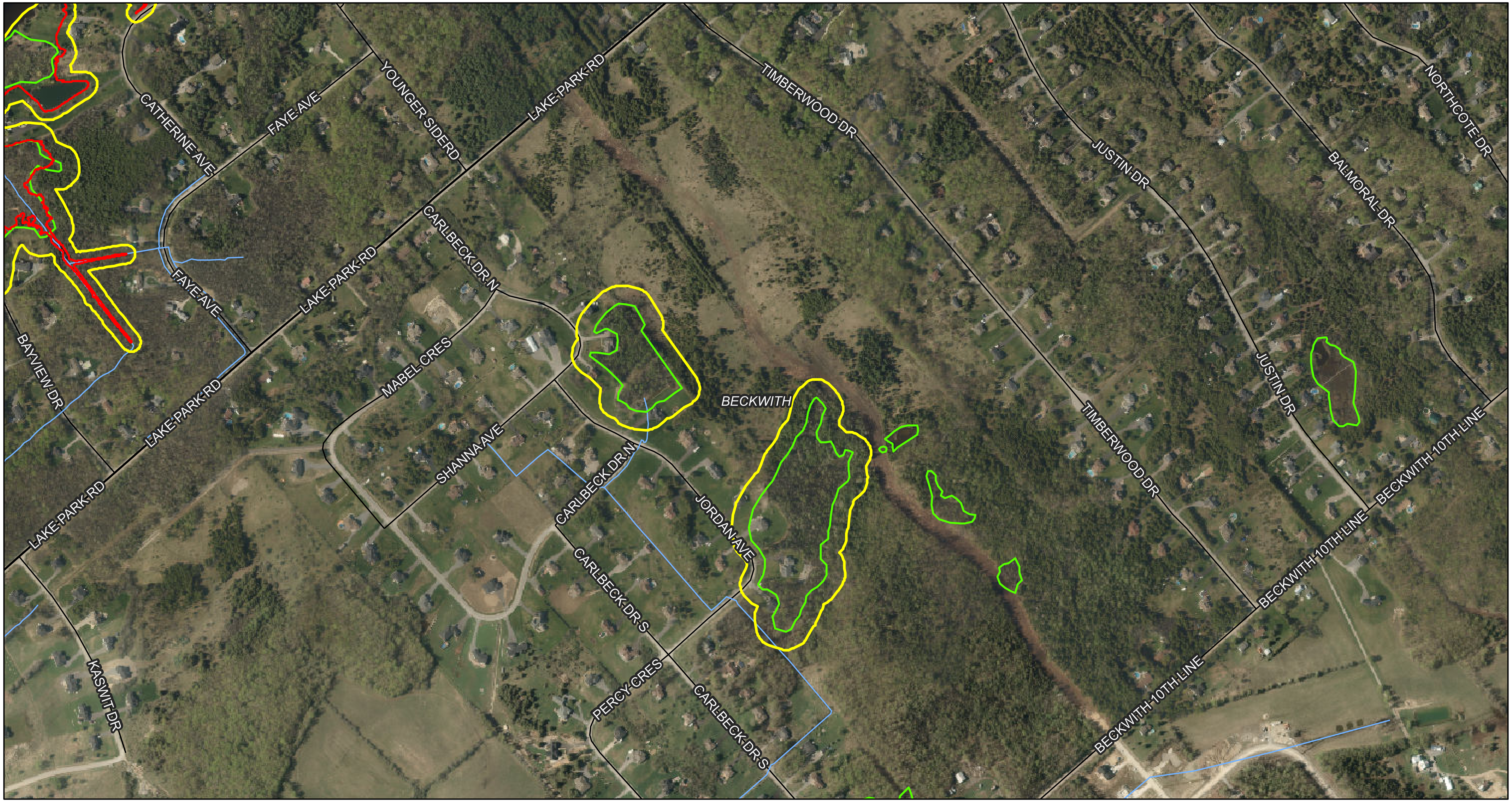
Appendix A

MVCA Mapping

MVCA Mapping - 10th Line Beckwith Subdivision



9/30/2025, 11:45:28 AM

1:100 Year Floodplain
Regulation Limit
Non Evaluated Wetlands
Streams
Roads
Collector
Local / Street
MVCA Watershed Boundary
Canada_Hillshade
World_Hillshade

1:6,284

0 425 850 1,700 ft
0 125 250 500 m

Rideau Valley Conservation Authority (RVCA), Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap, and the GIS user community

Appendix B

Water Balance

Engineers, Planners & Landscape Architects

M E M O R A N D U M

DATE: SEPTEMBER 30, 2025

TO: MARKO CEKIC, MES PI. – 1384341 ONTARIO INC

FROM: KALLIE AULD, P.ENG.

RE: WATER BUDGET ASSESSMENT
10TH LINE BECKWITH SUBDIVISION
NOVATECH FILE NO. 122190

CC: DREW PAULUSSE B.SC., QP_{RA} - GEMTEC

INTRODUCTION

The purpose of this memorandum is to outline a preliminary water budget assessment that has been completed in support of the proposed 10th Line Beckwith Subdivision located at 2736 10th Line Road in Beckwith, Ontario.

The Subject Site is located within the jurisdiction of the Mississippi Valley Conservation Authority (MVCA) and is tributary to Mississippi Lake. As a part of the application for Draft Plan Approval, an Environmental Impact Assessment is required, which includes a water budget assessment to evaluate the potential impacts of the proposed development on the hydrologic function of the existing regulated wetland located within the Subject Site.

To mitigate any adverse impacts of the proposed development on infiltration, low-impact development (LID) practices intended to promote infiltration will be considered in addition to typical lot-level and conveyance best management practices (BMPs).

METHODOLOGY

The water budget analysis was completed using the Thornthwaite-Mather (1957) methodology. Both pre-development and post-development annual infiltration values were estimated based on existing and proposed site conditions (land use, topography, soil characteristics, etc.). Refer to the attached model description for further details. The total area analyzed for the water budget analysis is approximately 63.27 ha.

PRE-DEVELOPMENT CONDITIONS

Under pre-development conditions, storm runoff from the site and external drainage areas flows to four (4) distinct outlets, as follows:

- **Outlet A:** Storm runoff from an area of approximately 14.14 ha flows overland towards Lake Park Road and is ultimately conveyed to Mississippi Lake via existing ditches and culverts;
- **Outlet B:** Storm runoff from an area of approximately 38.43 ha flows overland to a low wet area located northeast of Jordan Street;

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- **Outlet C:** Storm runoff from an area of approximately 2.83 ha flows overland towards 10th Line Road and is ultimately conveyed to Mississippi Lake via existing ditches and culverts;
- **Outlet D:** Storm runoff from an area of approximately 7.87 ha flows overland to a small low wet area located northeast of Carlbeck Drive North.

From the geotechnical report (*Geotechnical Investigation*, Paterson Group, August 28, 2025) soils on site generally consist of topsoil underlain by silty sand and/or glacial till followed by bedrock, or topsoil directly underlain by bedrock. Due to the shallow bedrock layer this water budget assessment has used the HSG Soil Type ‘C’.

Based on aerial imagery the site currently consists of dense, mature trees and vegetation and open grassed spaces/meadows with smaller shrubs and vegetation. The four drainage areas as noted above include some existing impervious areas (roofs, driveways) along the boundaries of the site.

The pre-development water budget results indicate that the infiltration for the site under existing conditions is 246 mm/year which translates to 155,794 m^3/year over the entire 63.27 ha area. Refer to attached detailed water budget results.

POST-DEVELOPMENT CONDITIONS

Under proposed conditions, development on the Subject Site is to be comprised of approximately 54 rural estate lots. Runoff from the proposed development will be captured by roadside and rear yard ditches and swales and with the majority of the site conveyed to the existing outlet located at Lake Park Road.

Based on the preliminary subdivision layout, approximately 8% of the site would be impervious, leading to a reduction in natural infiltration compared to pre-development conditions. The water budget assessment results indicate that the post-development infiltration would be 223 mm/year (141,009 m^3/year), resulting in an infiltration deficit of 23 mm/year (14,785 m^3/year). Refer to attached detailed water budget results.

BMP TREATMENT TRAIN

To reduce the impact of the proposed development on the existing on-site wetland and downstream watercourses and features, the following lot-level and conveyance BMPs are recommended:

- Lot grading would be reduced where possible to increase travel time, depression storage and infiltration.
- Roof leaders would be directed to grassed areas. Storm runoff would discharge onto the ground adjacent to the houses and travel through grassed areas prior to reaching a conveyance system.
- Rear yard swales would be designed at a minimum grade where possible to minimize flow velocities and promote the settling of suspended solids in the storm runoff.

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ADDITIONAL INFILTRATION MEASURES

In addition to the proposed BMP treatment train, engineered infiltration measures are suggested to increase post-development infiltration to pre-development levels. Methods for increasing infiltration could include:

- Runoff from the rear yards collected and infiltrated via infiltration trenches underlying the rear yard swales;
- Infiltration within the proposed stormwater management facility (detention area).

Sizing and design of additional infiltration measures will be explored during the detailed design stage.

CONCLUSION

Based on the water budget calculations, the proposed development would generate an annual infiltration deficit of 23mm under post-development conditions. At the detailed design stage, the design and sizing of any additional infiltration measures will be explored.

ATTACHMENTS

1. Water Balance Model Description
2. Pre-Development Water Budget Calculations
3. Post-Development Water Budget Calculations

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Overview

The Thornthwaite-Mather (1957) water balance models are conceptual models that are used to simulate steady-state climatic averages or continuous values of precipitation (rain + snow), snowpack, snowmelt, soil moisture, evapotranspiration, and water surplus (infiltration + runoff) (refer to **Figure 1**). Input parameters consist of daily precipitation *(PRECIP),* temperature *(MAX / MIN TEMP),* potential evapotranspiration *(PET)*, and the available water content *(AWC)* that can also be referred to as the water holding capacity of the soil. All water quantities in the model are based on monthly calculations and are represented as depths (volume per unit area) of liquid water over the area being simulated. *All model units are in millimetres (mm)*.

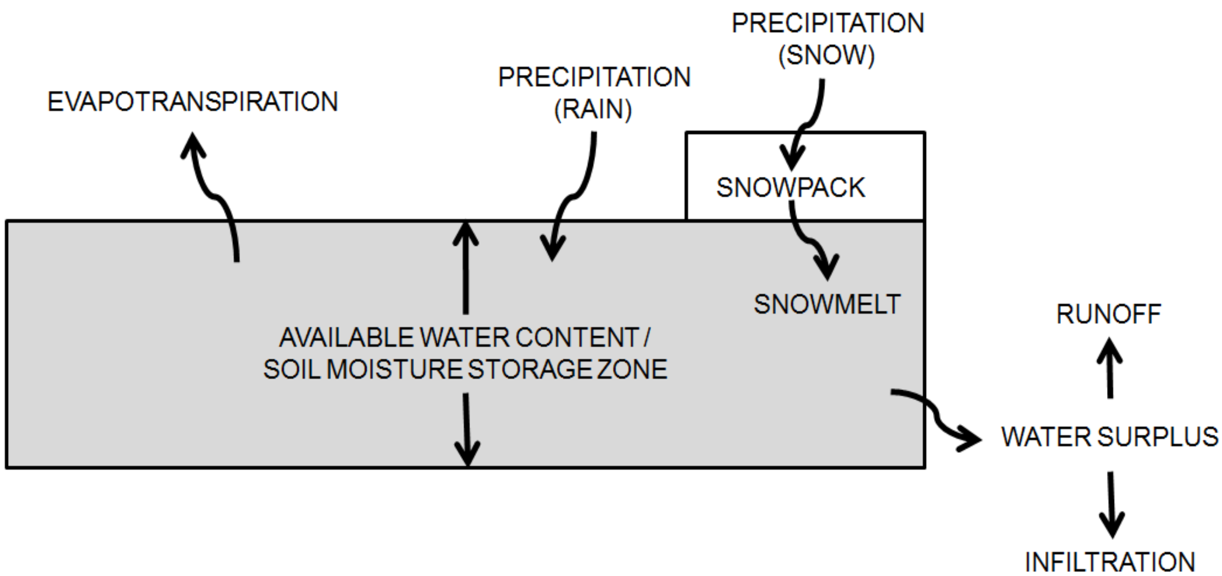

Figure 1: Conceptual Water Balance Model

Available Water Content (Water Holding Capacity)

The available water content (AWC) or water holding capacity of the soil was taken from Table 3.1 from the *Stormwater Management Planning & Design Manual (MOE, 2003)*, which has been reproduced in **Table 1** below. The available water content is the soil-moisture storage zone or the zone between the field capacity and vertical extent of the root zone.

Table 1: Water Holding Capacity Values (MOE, 2003)

Land Use / Soil Type	Hydrologic Soil Group	Water Holding Capacity (mm)
Urban Lawns / Shallow Rooted Crops (spinach, beans, beets, carrots)		
Fine Sand	A	50
Fine Sandy Loam	B	75
Silt Loam	C	125
Clay Loam	CD	100
Clay	D	75

Land Use / Soil Type	Hydrologic Soil Group	Water Holding Capacity (mm)
Moderately Rooted Crops (corn and cereal grains)		
Fine Sand	A	75
Fine Sandy Loam	B	150
Silt Loam	C	200
Clay Loam	CD	200
Clay	D	150
Pasture and Shrubs		
Fine Sand	A	100
Fine Sandy Loam	B	150
Silt Loam	C	250
Clay Loam	CD	250
Clay	D	200
Mature Forests		
Fine Sand	A	250
Fine Sandy Loam	B	300
Silt Loam	C	400
Clay Loam	CD	400
Clay	D	350

Precipitation

Daily precipitation *(PRECIP)* values consist of the total daily rainfall and water equivalent of snowmelt that fell on that day. Based on the mean daily temperature *(MEAN TEMP)* precipitation falls either as rainfall *(RAIN)* or the water equivalent of snowfall *(SNOW)*:

- *RAIN: If (MEAN TEMP >= 0, RAIN, SNOW)*
- *SNOW: If (MEAN TEMP < 0, SNOW, RAIN)*

Snowmelt / Snowpack / Water Input

Snowmelt *(MELT)* occurs if there is available snow (water equivalent) in the snowpack *(SNOWPACK)* and the maximum daily temperature *(MAX TEMP)* is greater than 0. The available snowmelt is limited to the available water in the snowpack.

Snowmelt is computed by a degree-day equation (Haith, 1985):

SNOWMELT (cm/d) = MELT COEFICIENT x [AIR TEMP (^{O}C) – MELT TEMP(^{O}C)]

The melt coefficient is typically 0.45 (cm of depth per degree-day, or cm x C^{-1} x day^{-1}) for northern climates (Haith, 1985). The melt temperature is assumed to be 0^{O}C. The air temperature is assumed to be the max temperature multiplied by a ratio of the max to min temperatures:

AIR TEMP = [*MAX TEMP / (MAX TEMP – MIN TEMP)]*

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Therefore, the snowmelt equation is:

- *MELT: If (MAX TEMP > 0, IF(SNOWPACK > 0, MIN((0.45cm/°C-day*MAX TEMP*[MAX TEMP/(MAX TEMP – MIN TEMP)]*10mm/cm), SNOWPACK), 0), 0)*

Snow accumulates in the snowpack from the previous day if precipitation falls as snow and there is no snowmelt or the amount of snow that falls in a day exceeds the daily snowmelt:

$SNOWPACK_N = SNOWPACK_{N-1} + SNOW - MELT$

The initial snowmelt on day 1 (i.e. January 1) is assumed to be 0. The initial snowpack on day 1 is assumed to be the snowpack on the last day of simulation (i.e. December 31).

The total water input (W) is rain + snowmelt. This is the available water that fills the soil moisture storage zone each day.

Evaporation

Measured potential evaporation (PE) data (i.e. lake evaporation) is provided with the Environment Canada Climate Normals (see example below for Ottawa CDA). The data represents daily averages for each month over a 20+ year period.

▼ Evaporation

1981 to 2010 Canadian Climate Normals station data

Evaporation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Lake Evaporation (mm)	0	0	0	0	3.6	4.3	4.4	3.7	2.4	1.4	0	0	0	

The daily evaporation data was assumed to represent the middle or 15th of each month and 'smoothed' to represent the transition from month to month (see **Figure 2** below). As shown in **Figure 2**, this produces a more realistic curve of potential evapotranspiration.

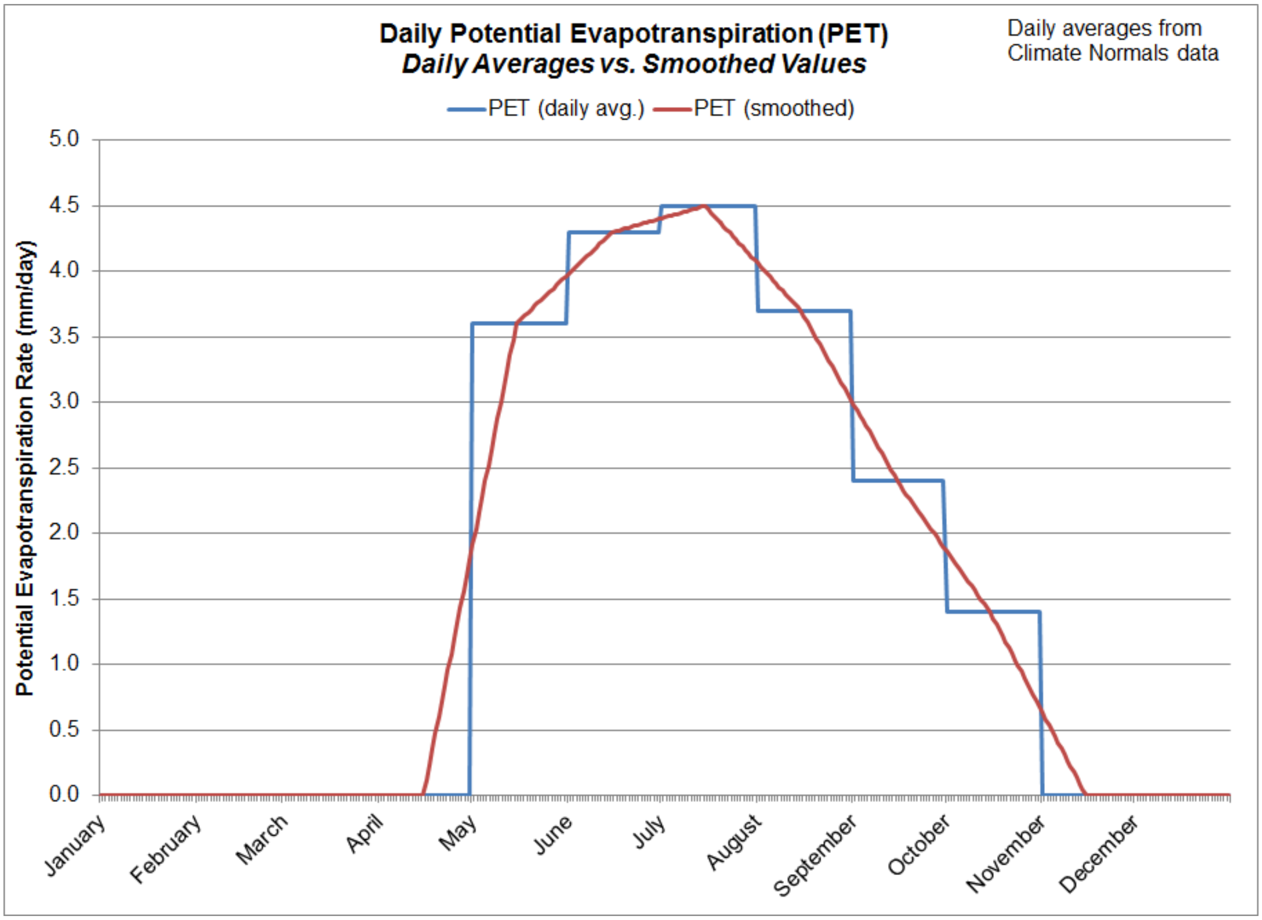

Figure 2: Daily Potential Evapotranspiration Rates (Daily Averages vs. Smoothed Values)

Potential Evapotranspiration

To convert potential evaporation data to potential crop evapotranspiration (PET) data a cover coefficient is applied based on land use and growing / dormant seasons:

PET = PE x Crop Cover Coefficient

Crop cover coefficients are based on the crop growth stages for different crop types (see **Figure 3**). A typical crop coefficient curve is shown in **Figure 4**, which depicts a crop that provides transpiration above the potential evaporation rates during the growing season.

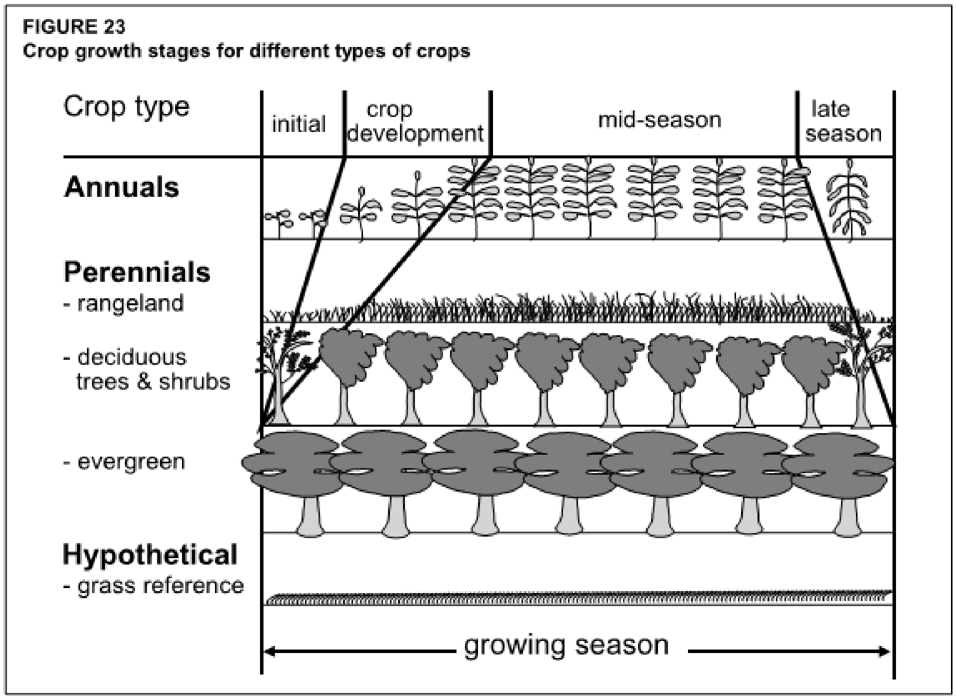

Figure 3: Crop Growth Stages for Different Types of Crops

Source: Food and Agriculture Organization of the United Nations (FAO), 1998, Crop Evapotranspiration - Guidelines for Computing Crop Water Requirements. FAO Irrigation and Drainage paper 56.

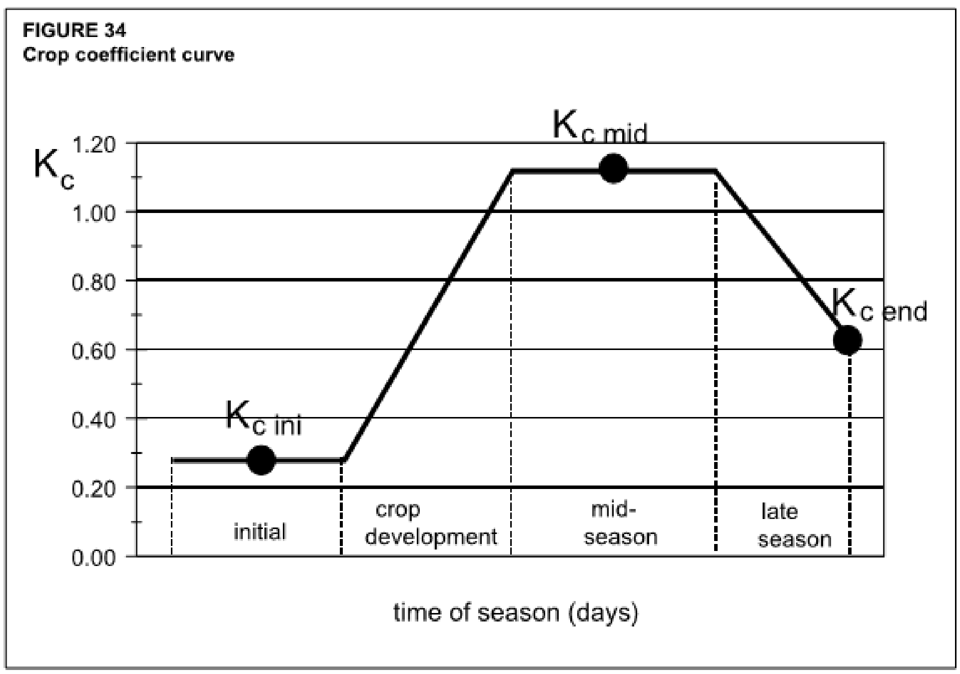

Figure 4: Crop Coefficient Curve

Source: Food and Agriculture Organization of the United Nations (FAO), 1998, Crop Evapotranspiration - Guidelines for Computing Crop Water Requirements. FAO Irrigation and Drainage paper 56.

The crop cover coefficients used in the water budget model for the various land use types is shown in **Table 2**. The growing / dormant seasons are shown in **Table 3**. The crop cover coefficients for the initial growing season are based on the average value of the dormant and middle of the growing season.

Table 2: Crop Cover Coefficients

Land Use	Dormant Season	Initial Growing Season	Middle of Growing Season	End of Growing Season
Urban Lawns / Shallow Rooted Crops*	0.40	0.78	1.15	0.55
Moderately Rooted Crops**	0.30	0.73	1.15	0.40
Pasture and Shrubs***	0.40	0.68	0.95	0.90
Mature Forest****	0.30	0.75	1.20	0.30
Impervious Areas	1.00	1.00	1.00	1.00

Reference: Data is based on Table 12 from the Food and Agriculture Organization of the United Nations (FAO), 1998, Crop Evapotranspiration - Guidelines for Computing Crop Water Requirements. FAO Irrigation and Drainage paper 56.

**Table 12, e. Legumes*

***Table 12, i. Cereals*

****Table 12, j. Forages (Alfalfa)*

*****Table 12, o. Wetlands*

Table 3: Crop Growing Season

Month(s)	Crop Growing Season
January – April	Dormant Season
May	Initial Growing Season
June - August	Middle of Growing Season
September	End of Growing Season
October - December	Dormant Season (harvest in October)

Reference: Food and Agriculture Organization of the United Nations (FAO), 1977, Crop Water Requirements. FAO Irrigation and Drainage paper 24.

<u>Actual Evapotranspiration</u>

Following Alley (1984), if the monthly water input (i.e. rain + snowmelt) is greater than the potential evapotranspiration (PET) rate, the actual evapotranspiration (AET) rate takes place at the potential evapotranspiration rate:

IF W > PET, then AET = PET

If the monthly water input is less than the potential evapotranspiration rate (i.e. W < PET) then the actual evapotranspiration rate is the sum of the water input and an increment removed from the available water in the soil moisture storage zone (SOIL WATER):

IF W < PET, then AET = W + ΔSOIL WATER

WHERE: $\Delta SOIL\ WATER = SOIL\ WATER_{N-1} - SOIL\ WATER_{N}$

Figure 5 shows a comparison of the average monthly potential evapotranspiration and actual evapotranspiration rates.

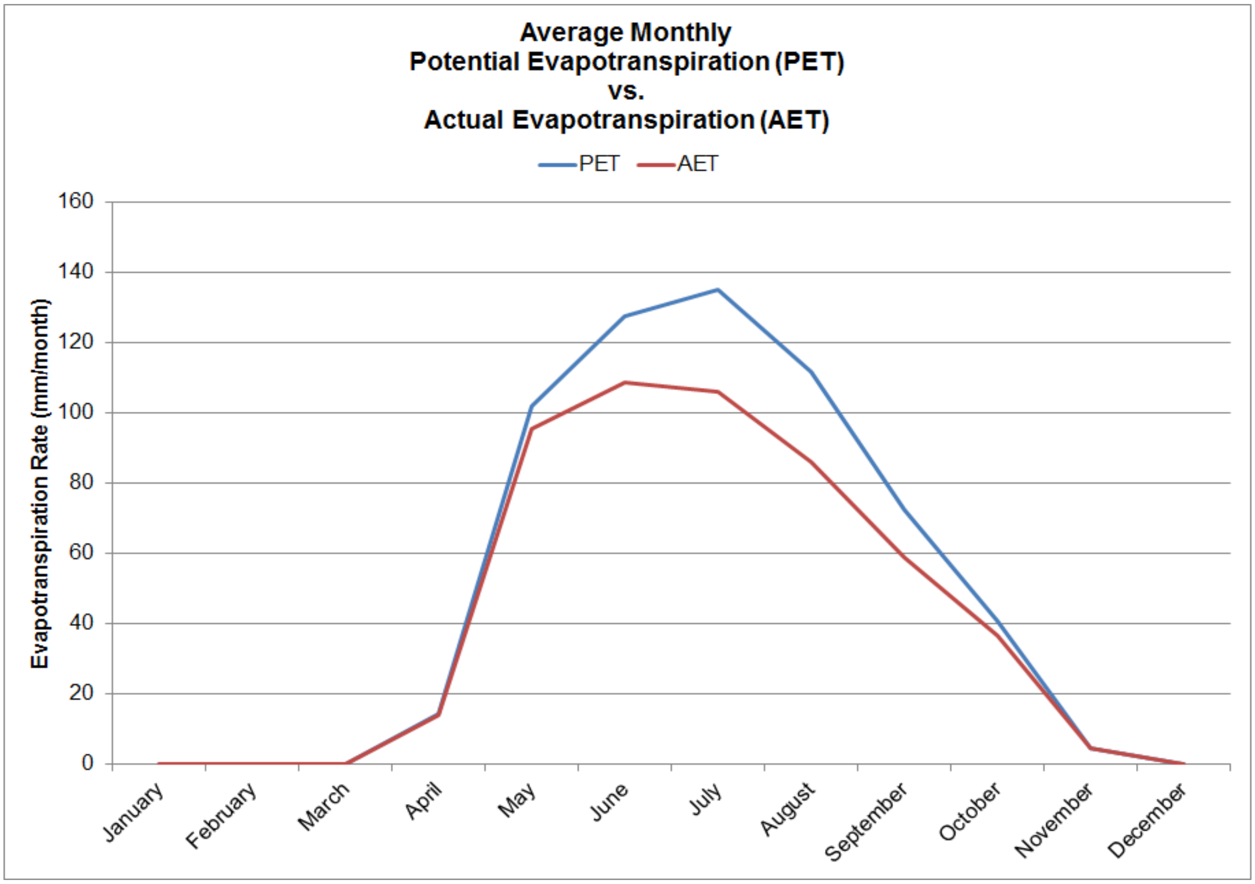

Figure 5: Average Monthly Potential Evapotranspiration vs. Actual Evapotranspiration

<u>Soil Moisture</u>

The soil moisture storage zone (SOIL WATER) is the amount of water available for actual evapotranspiration, but actual evapotranspiration is limited by the potential evapotranspiration rate.

The decrease / change in the soil moisture storage zone (ΔSOIL WATER) is based on the following relationship (Thornthwaite,1948), where AWC represents the available water content:

$$\Delta SOIL\ WATER = SOIL\ WATER_{N-1} \times [1-\exp(-((PET - W) / AWC))]$$

The soil moisture storage zone is replenished with rainwater and snowmelt (i.e. the water input) to the maximum value of the available water content (AWC):

$SOIL\ WATER_N = min[(W - PET) + SOIL\ WATER_{N-1}), AWC]$

Water Surplus

The water surplus (SURPLUS) is defined as the excess water that is greater than the available water content (AWC).

$SURPLUS = W - AET - \Delta SOIL\ WATER$

The water surplus represents the difference between precipitation and evapotranspiration. It is an estimate of the water that is available to contribute to infiltration and runoff (i.e. streamflow).

Infiltration / Runoff

The amount of water surplus that is infiltrated is determined by summing the infiltration factors (IF) based on topography, soils, and land cover. Since the water surplus represents infiltration and runoff; direct runoff is the amount of water surplus remaining after taking into account infiltration: (1.0 – infiltration factor = runoff factor). The infiltration and runoff factors were applied to the average monthly water surplus values:

$INFILTRATION = IF \times SURPLUS$

$RUNOFF = (1.0 - IF) \times SURPLUS$

The infiltration factors are shown in **Table 4**, which was reproduced from Table 3.1 in the *Stormwater Management Planning & Design Manual (MOE, 2003)*. These infiltration factors were initially presented in the document *"Hydrogeological Technical Information Requirements for Land Development Applications" (MOE, 1995)*.

Table 4: Infiltration Factors (MOE, 2003)

Description	Value of Infiltration Factor
Topography	
Flat Land, average slope < 0.6 m/km	0.3
Rolling Land, average slope 2.8 m/km to 3.8 m/km	0.2
Hilly Land, average slope 28 m/km to 47 m/km	0.1
Surficial Soils	
Tight impervious clay	0.1
Medium combination of clay and loam	0.2
Open sandy loam	0.4
Land Cover	
Cultivated Land	0.1
Woodland	0.2

Each soil type been assigned a corresponding infiltration factor as per Table 3.1 in the *Stormwater Management Planning & Design Manual (MOE, 2003),* as shown in **Table 5** below.

Table 5: Soils Infiltration Factors

Soil Type	Hydrologic Soil Group	Infiltration Factor
Coarse Sand	A	0.40
Fine Sand	AB	0.40
Fine Sandy Loam	B	0.40
Loam	BC	0.30
Silt Loam	C	0.20
Clay Loam	CD	0.15
Clay	D	0.10

The land use was combined into five (5) main categories (mature forest, row crops, pasture / meadow, urban lawns, and impervious areas) to be consistent with Table 3.1 in the *Stormwater Management Planning & Design Manual (MOE, 2003)*. The land use infiltration factors are shown in **Table 6** below.

Table 6: Land Use Infiltration Factor

Land Use	Infiltration Factor
Urban Lawns	0.10
Row Crops	0.10
Pasture / Meadow	0.10
Mature Forest	0.20
Impervious Areas	0.00

Land Use / Soils / Topography

The available water content (AWC), infiltration factors (IF), and crop cover coefficients (CROP COEF) are determined based on the combination of land use, soils and topography, as shown in **Table 7**.

Table 7: Model Parameters based on Land Use / Soils (existing areas)

Land Use	Soils (HSG)	AWC (mm)	IF (Land Use)	IF (Soils)	Crop Cover Coefficient			
					Dormant Season	Initial Growing Season	Middle of Growing Season	End of Growing Season
Urban Lawns	A	50	0.10	0.40	0.40	0.78	1.15	0.55
	AB	62.5		0.40				
	B	75		0.40				
	BC	100		0.30				
	C	125		0.20				
	CD	100		0.15				
	D	75		0.10				
Row Crops	A	75	0.10	0.40	0.30	0.73	1.15	0.40
	AB	112.5		0.40				
	B	150		0.40				
	BC	175		0.30				
	C	200		0.20				
	CD	200		0.15				
	D	150		0.10				
Pasture / Meadow	A	100	0.10	0.40	0.40	0.68	0.95	0.90
	AB	125		0.40				
	B	150		0.40				
	BC	200		0.30				
	C	250		0.20				
	CD	250		0.15				
	D	200		0.10				
Mature Forest	A	250	0.20	0.40	0.30	0.75	1.20	0.30
	AB	275		0.40				
	B	300		0.40				
	BC	350		0.30				
	C	400		0.20				
	CD	400		0.15				
	D	350		0.10				
Impervious Areas	A	1.57	0.00	0.00	1.00	1.00	1.00	1.00
	AB	1.57						
	B	1.57						
	BC	1.57						
	C	1.57						
	CD	1.57						
	D	1.57						

**For impervious areas, potential evapotranspiration is equal to potential evaporation (i.e. crop cover coefficient = 1.00).*

Beckwith 10th Line Subdivision (122190)
Water Balance Model Parameters
Pre-Development Conditions

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Potential Evaporation Rates (AVG. mm/d)[3]

January	February	March	April	May	June	July	August	September	October	November	December
0.0	0.0	0.0	0.0	3.6	4.3	4.4	3.7	2.4	1.4	0.0	0.0

Surface Type	Area ID	Catchment Parameters						Infiltration Factor[1]				Crop Cover Coefficient[2]				Potential Evapotranspiration (AVG. mm/d)											
		AREA (m^2)	AREA (ha)	SOILS (HSG)	LAND USE	TOPOGRAPHY	AWC[1]	IF (soils)	IF (cover)	IF (topo)	IF (Total)	Dormant Season	Initial Growing Season	Middle of Growing Season	End of Growing Season	January	February	March	April	May	June	July	August	September	October	November	December
Pervious (open space / meadow)	1	285666	28.57	C	MEADOW	MODERATE	250.00	0.20	0.10	0.20	0.50	0.40	0.68	0.95	0.90	0.00	0.00	0.00	0.00	2.45	4.09	4.18	3.52	2.16	0.56	0.00	0.00
Pervious (forest)	2	340046	34.00	C	FOREST	MODERATE	400.00	0.20	0.20	0.20	0.60	0.30	0.75	1.20	0.30	0.00	0.00	0.00	0.00	2.70	5.16	5.28	4.44	0.72	0.42	0.00	0.00
Impervious (roofs / driveways / roads)	3	6994	0.70	C	IMPERVIOUS	MODERATE	1.57	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	3.60	4.30	4.40	3.70	2.40	1.40	0.00	0.00

[1]Available Water Content (AWC) and Infiltration Factors (IF) for pervious areas based on Table 3.1 from the Stormwater Management Planning and Design Manual (MOE, 2003)

[2]Crop Cover Coefficients based on Table 12 from the Food and Agriculture Organization of the United Nations (FAO), 1998, Crop Evapotranspiration - Guidelines for Computing Crop Water Requirements - FAO Irrigation and Drainage paper 56

[3]Measured Potential Evaporation Data (i.e. Lake Evaporation) from the Environment Canada Canadian Climate Normals (Ottawa CDA, 1981-2010)

Beckwith 10th Line Subdivision (122190)
Water Balance Model Results
Pre-Development Conditions

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Water Balance for Area 1: Pervious (open space / meadow)

Average Monthly Results												
Month	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
January	63.3	0.0	10.9	52.4	47.1	58.0	58.0	0.0	0.0	58.0	29.0	29.0
February	51.9	0.0	10.1	41.8	42.7	52.7	52.7	0.0	0.0	52.7	26.4	26.4
March	60.0	0.0	24.8	35.2	61.5	86.4	86.4	0.0	0.0	86.4	43.2	43.2
April	76.6	9.8	73.1	3.5	6.7	79.8	70.1	-3.4	9.7	73.5	36.7	36.7
May	78.2	74.5	78.2	0.0	0.0	78.2	3.7	-16.9	71.6	23.5	11.7	11.7
June	96.0	117.4	96.0	0.0	0.0	96.0	-21.4	-23.2	105.7	13.5	6.8	6.8
July	91.1	126.3	91.1	0.0	0.0	91.1	-35.2	-19.5	105.5	5.2	2.6	2.6
August	87.2	105.3	87.2	0.0	0.0	87.2	-18.1	-3.1	85.6	4.7	2.4	2.4
September	88.2	63.0	88.2	0.0	0.0	88.2	25.2	28.5	53.2	6.5	3.2	3.2
October	88.7	20.5	87.8	0.9	0.6	88.4	67.9	32.6	19.3	36.5	18.3	18.3
November	73.9	1.9	58.3	15.5	12.9	71.2	69.3	5.1	1.9	64.3	32.1	32.1
December	71.0	0.0	20.5	50.5	28.3	48.8	48.8	0.0	0.0	48.8	24.4	24.4
ANNUAL TOTAL	**926.1**	**518.7**	**726.2**	**199.8**	**199.8**	**926.0**	**407.4**	**0.0**	**452.4**	**473.6**	**236.8**	**236.8**

Total Number of Years = 30

Average Annual Results												
Year	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
1988	836.1	518.7	713.0	123.1	133.9	846.9	328.2	0.0	452.2	394.7	197.4	197.4
1989	817.1	518.7	620.0	197.1	153.8	773.8	255.1	0.0	439.2	334.6	167.3	167.3
1990	976.7	518.7	777.6	199.1	232.7	1010.3	491.6	0.0	445.1	565.2	282.6	282.6
1991	820.2	518.7	619.1	201.1	204.0	823.1	304.5	0.0	400.4	422.8	211.4	211.4
1992	908.3	518.7	651.9	256.4	260.2	912.1	393.5	0.0	472.8	439.4	219.7	219.7
1993	1019.3	518.7	754.0	265.3	266.3	1020.3	501.6	0.0	453.7	566.6	283.3	283.3
1994	909.5	518.7	681.6	227.9	234.2	915.8	397.1	0.0	482.7	433.1	216.5	216.5
1995	1038.4	518.7	809.4	229.0	138.2	947.6	429.0	0.0	453.8	493.8	246.9	246.9
1996	1004.7	518.7	866.9	137.8	213.7	1080.6	561.9	0.0	470.0	610.6	305.3	305.3
1997	773.0	518.7	475.9	297.1	309.5	785.4	266.7	0.0	387.8	397.6	198.8	198.8
1998	841.6	518.7	630.0	211.6	192.8	822.8	304.1	0.0	447.1	375.7	187.8	187.8
1999	830.5	518.7	623.3	207.2	219.8	843.1	324.4	0.0	429.6	413.5	206.7	206.7
2000	987.4	518.7	783.0	204.4	162.0	945.0	426.4	0.0	481.9	463.1	231.6	231.6
2001	753.6	518.7	580.3	173.3	213.1	793.4	274.8	0.0	409.5	383.9	192.0	192.0
2002	867.9	518.7	687.7	180.2	189.6	877.3	358.7	0.0	435.6	441.8	220.9	220.9
2003	1068.5	518.7	820.4	248.1	255.3	1075.7	557.0	0.0	465.1	610.6	305.3	305.3
2004	919.7	518.7	756.2	163.5	124.4	880.6	362.0	0.0	450.6	430.0	215.0	215.0
2005	939.6	518.7	784.9	154.7	175.8	960.7	442.0	0.0	454.6	506.1	253.1	253.1
2006	1152.0	518.7	970.6	181.4	183.1	1153.7	635.0	0.0	482.5	671.2	335.6	335.6
2007	901.0	518.7	728.8	172.2	170.0	898.8	380.2	0.0	457.9	440.9	220.5	220.5
2008	1057.6	518.7	681.6	376.0	391.5	1073.1	554.4	0.0	475.7	597.3	298.7	298.7
2009	946.5	518.7	800.3	146.2	93.4	893.7	375.1	0.0	483.0	410.7	205.3	205.3
2010	970.2	518.7	867.0	103.2	159.0	1026.0	507.3	0.0	464.0	561.9	281.0	281.0
2011	878.2	518.7	676.6	201.6	179.8	856.4	337.8	0.0	434.9	421.5	210.8	210.8
2012	807.5	518.7	596.6	210.9	147.0	743.6	224.9	0.0	420.0	323.6	161.8	161.8
2013	881.4	518.7	704.2	177.2	217.5	921.7	403.0	0.0	468.4	453.3	226.6	226.6
2014	903.1	518.7	759.5	143.6	189.0	948.5	429.8	0.0	478.6	469.9	234.9	234.9
2015	785.7	518.7	648.3	137.4	108.6	756.9	238.2	0.0	455.2	301.7	150.9	150.9
2016	917.9	518.7	656.4	261.5	262.2	918.6	400.0	0.0	431.6	487.1	243.5	243.5
2017	1268.5	518.7	1061.5	207.0	214.0	1275.5	756.8	0.0	489.0	786.5	393.2	393.2
AVERAGE	**926.1**	**518.7**	**726.2**	**199.8**	**199.8**	**926.0**	**407.4**	**0.0**	**452.4**	**473.6**	**236.8**	**236.8**

PRECIP	Total Precipitation
PET	Potential Evapotranspiration
W	Water Input (Rain + Snowmelt)
Soil Water (SW)	Available Water in the Soil Moisture Storage Zone
ΔSoil Water	Change in Soil Water
AET	Actual Evapotranspiration

The water balance calculations are conducted on a daily time step
All units in mm

Beckwith 10th Line Subdivision (122190)
Water Balance Model Results
Pre-Development Conditions

Water Balance for Area 2: Pervious (forest)

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Average Monthly Results												
Month	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
January	63.3	0.0	10.9	52.4	47.1	58.0	58.0	0.4	0.0	57.7	34.6	23.1
February	51.9	0.0	10.1	41.8	42.7	52.7	52.7	0.0	0.0	52.7	31.6	21.1
March	60.0	0.0	24.8	35.2	61.5	86.4	86.4	0.0	0.0	86.4	51.8	34.5
April	76.6	10.8	73.1	3.5	6.7	79.8	69.0	-3.8	10.8	72.9	43.8	29.2
May	78.2	85.0	78.2	0.0	0.0	78.2	-6.8	-23.2	82.4	19.0	11.4	7.6
June	96.0	146.9	96.0	0.0	0.0	96.0	-50.9	-43.5	132.9	6.7	4.0	2.7
July	91.1	159.6	91.1	0.0	0.0	91.1	-68.4	-41.4	131.0	1.6	0.9	0.6
August	87.2	124.2	87.2	0.0	0.0	87.2	-37.0	-9.8	97.0	0.0	0.0	0.0
September	88.2	33.0	88.2	0.0	0.0	88.2	55.2	57.8	27.1	3.3	2.0	1.3
October	88.7	12.2	87.8	0.9	0.6	88.4	76.1	50.1	11.5	26.7	16.0	10.7
November	73.9	1.4	58.3	15.5	12.9	71.2	69.8	12.8	1.4	57.1	34.2	22.8
December	71.0	0.0	20.5	50.5	28.3	48.8	48.8	0.8	0.0	48.0	28.8	19.2
ANNUAL TOTAL	**926.1**	**573.2**	**726.2**	**199.8**	**199.8**	**926.0**	**352.9**	**0.0**	**494.0**	**432.0**	**259.2**	**172.8**

Total Number of Years = 30

Average Annual Results												
Year	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
1988	836.1	573.2	713.0	123.1	133.9	846.9	273.7	0.0	480.7	366.2	219.7	146.5
1989	817.1	573.2	620.0	197.1	153.8	773.8	200.6	0.0	475.8	298.0	178.8	119.2
1990	976.7	573.2	777.6	199.1	232.7	1010.3	437.1	0.0	478.7	531.6	319.0	212.6
1991	820.2	573.2	619.1	201.1	204.0	823.1	250.0	0.0	445.4	377.8	226.7	151.1
1992	908.3	573.2	651.9	256.4	260.2	912.1	339.0	0.0	501.7	410.4	246.3	164.2
1993	1019.3	573.2	754.0	265.3	266.3	1020.3	447.1	0.0	495.5	524.7	314.8	209.9
1994	909.5	573.2	681.6	227.9	234.2	915.8	342.6	0.0	536.9	378.9	227.3	151.6
1995	1038.4	573.2	809.4	229.0	138.2	947.6	374.5	0.0	499.3	448.3	269.0	179.3
1996	1004.7	573.2	866.9	137.8	213.7	1080.6	507.4	0.0	507.3	573.3	344.0	229.3
1997	773.0	573.2	475.9	297.1	309.5	785.4	212.2	-10.6	435.9	360.1	216.1	144.0
1998	841.6	573.2	630.0	211.6	192.8	822.8	249.6	10.6	486.4	325.9	195.5	130.4
1999	830.5	573.2	623.3	207.2	219.8	843.1	269.9	0.0	465.8	377.3	226.4	150.9
2000	987.4	573.2	783.0	204.4	162.0	945.0	371.8	0.0	528.6	416.5	249.9	166.6
2001	753.6	573.2	580.3	173.3	213.1	793.4	220.3	0.0	462.2	331.3	198.8	132.5
2002	867.9	573.2	687.7	180.2	189.6	877.3	304.2	0.0	495.6	381.7	229.0	152.7
2003	1068.5	573.2	820.4	248.1	255.3	1075.7	502.5	0.0	501.9	573.8	344.3	229.5
2004	919.7	573.2	756.2	163.5	124.4	880.6	307.4	0.0	491.0	389.7	233.8	155.9
2005	939.6	573.2	784.9	154.7	175.8	960.7	387.5	0.0	489.8	470.8	282.5	188.3
2006	1152.0	573.2	970.6	181.4	183.1	1153.7	580.5	0.0	520.5	633.1	379.9	253.3
2007	901.0	573.2	728.8	172.2	170.0	898.8	325.7	0.0	497.1	401.7	241.0	160.7
2008	1057.6	573.2	681.6	376.0	391.5	1073.1	499.9	0.0	520.1	553.0	331.8	221.2
2009	946.5	573.2	800.3	146.2	93.4	893.7	320.6	0.0	532.3	361.4	216.9	144.6
2010	970.2	573.2	867.0	103.2	159.0	1026.0	452.8	0.0	494.2	531.7	319.0	212.7
2011	878.2	573.2	676.6	201.6	179.8	856.4	283.3	0.0	479.3	377.2	226.3	150.9
2012	807.5	573.2	596.6	210.9	147.0	743.6	170.4	0.0	459.9	283.7	170.2	113.5
2013	881.4	573.2	704.2	177.2	217.5	921.7	348.5	0.0	514.5	407.2	244.3	162.9
2014	903.1	573.2	759.5	143.6	189.0	948.5	375.3	0.0	520.6	427.9	256.7	171.1
2015	785.7	573.2	648.3	137.4	108.6	756.9	183.7	0.0	493.6	263.3	158.0	105.3
2016	917.9	573.2	656.4	261.5	262.2	918.6	345.5	0.0	464.1	454.5	272.7	181.8
2017	1268.5	573.2	1061.5	207.0	214.0	1275.5	702.3	0.0	545.6	729.9	437.9	292.0
AVERAGE	**926.1**	**573.2**	**726.2**	**199.8**	**199.8**	**926.0**	**352.9**	**0.0**	**494.0**	**432.0**	**259.2**	**172.8**

PRECIP	Total Precipitation
PET	Potential Evapotranspiration
W	Water Input (Rain + Snowmelt)
Soil Water (SW)	Available Water in the Soil Moisture Storage Zone
ΔSoil Water	Change in Soil Water
AET	Actual Evapotranspiration

The water balance calculations are conducted on a daily time step
All units in mm

Beckwith 10th Line Subdivision (122190)
Water Balance Model Results
Pre-Development Conditions

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Water Balance for Area 3: Impervious (roofs / driveways / roads)

Average Monthly Results												
Month	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
January	63.3	0.0	10.9	52.4	47.1	58.0	58.0	0.0	0.0	58.0	0.0	58.0
February	51.9	0.0	10.1	41.8	42.7	52.7	52.7	0.0	0.0	52.7	0.0	52.7
March	60.0	0.0	24.8	35.2	61.5	86.4	86.4	0.0	0.0	86.4	0.0	86.4
April	76.6	14.4	73.1	3.5	6.7	79.8	65.4	-1.0	8.0	72.9	0.0	72.9
May	78.2	102.1	78.2	0.0	0.0	78.2	-23.9	0.0	35.9	42.4	0.0	42.4
June	96.0	127.0	96.0	0.0	0.0	96.0	-31.0	-0.1	43.3	52.7	0.0	52.7
July	91.1	133.0	91.1	0.0	0.0	91.1	-41.8	-0.2	40.6	50.7	0.0	50.7
August	87.2	111.4	87.2	0.0	0.0	87.2	-24.2	-0.1	33.4	53.9	0.0	53.9
September	88.2	72.4	88.2	0.0	0.0	88.2	15.8	0.5	28.1	59.5	0.0	59.5
October	88.7	40.8	87.8	0.9	0.6	88.4	47.6	0.1	22.2	66.0	0.0	66.0
November	73.9	4.7	58.3	15.5	12.9	71.2	66.5	0.8	3.3	67.1	0.0	67.1
December	71.0	0.0	20.5	50.5	28.3	48.8	48.8	0.0	0.0	48.8	0.0	48.8
ANNUAL TOTAL	**926.1**	**605.8**	**726.2**	**199.8**	**199.8**	**926.0**	**320.3**	**0.0**	**214.9**	**711.2**	**0.0**	**711.2**

Total Number of Years = *30*

Average Annual Results												
Year	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
1988	836.1	605.8	713.0	123.1	133.9	846.9	241.1	0.0	205.8	641.1	0.0	641.1
1989	817.1	605.8	620.0	197.1	153.8	773.8	168.0	0.0	180.5	593.3	0.0	593.3
1990	976.7	605.8	777.6	199.1	232.7	1010.3	404.5	0.0	207.6	802.7	0.0	802.7
1991	820.2	605.8	619.1	201.1	204.0	823.1	217.4	0.0	191.6	631.5	0.0	631.5
1992	908.3	605.8	651.9	256.4	260.2	912.1	306.4	0.0	211.4	700.8	0.0	700.8
1993	1019.3	605.8	754.0	265.3	266.3	1020.3	414.5	0.0	243.6	776.7	0.0	776.7
1994	909.5	605.8	681.6	227.9	234.2	915.8	310.1	0.0	224.9	690.9	0.0	690.9
1995	1038.4	605.8	809.4	229.0	138.2	947.6	341.9	0.0	197.5	750.2	0.0	750.2
1996	1004.7	605.8	866.9	137.8	213.7	1080.6	474.8	0.0	220.2	860.4	0.0	860.4
1997	773.0	605.8	475.9	297.1	309.5	785.4	179.7	0.0	178.1	607.3	0.0	607.3
1998	841.6	605.8	630.0	211.6	192.8	822.8	217.1	0.0	209.4	613.4	0.0	613.4
1999	830.5	605.8	623.3	207.2	219.8	843.1	237.3	0.0	192.7	650.4	0.0	650.4
2000	987.4	605.8	783.0	204.4	162.0	945.0	339.3	0.0	240.8	704.2	0.0	704.2
2001	753.6	605.8	580.3	173.3	213.1	793.4	187.7	0.0	195.0	598.5	0.0	598.5
2002	867.9	605.8	687.7	180.2	189.6	877.3	271.6	0.0	194.6	682.8	0.0	682.8
2003	1068.5	605.8	820.4	248.1	255.3	1075.7	469.9	0.0	233.9	841.8	0.0	841.8
2004	919.7	605.8	756.2	163.5	124.4	880.6	274.9	0.0	220.1	660.5	0.0	660.5
2005	939.6	605.8	784.9	154.7	175.8	960.7	354.9	0.0	218.2	742.5	0.0	742.5
2006	1152.0	605.8	970.6	181.4	183.1	1153.7	547.9	0.0	241.1	912.6	0.0	912.6
2007	901.0	605.8	728.8	172.2	170.0	898.8	293.1	0.0	205.7	693.1	0.0	693.1
2008	1057.6	605.8	681.6	376.0	391.5	1073.1	467.3	0.0	234.1	838.9	0.0	838.9
2009	946.5	605.8	800.3	146.2	93.4	893.7	288.0	0.0	256.2	637.5	0.0	637.5
2010	970.2	605.8	867.0	103.2	159.0	1026.0	420.2	0.0	245.4	780.5	0.0	780.5
2011	878.2	605.8	676.6	201.6	179.8	856.4	250.7	0.0	217.9	638.6	0.0	638.6
2012	807.5	605.8	596.6	210.9	147.0	743.6	137.8	0.0	208.6	535.0	0.0	535.0
2013	881.4	605.8	704.2	177.2	217.5	921.7	316.0	0.0	231.7	690.0	0.0	690.0
2014	903.1	605.8	759.5	143.6	189.0	948.5	342.7	0.0	230.4	718.0	0.0	718.0
2015	785.7	605.8	648.3	137.4	108.6	756.9	151.2	0.0	200.5	556.4	0.0	556.4
2016	917.9	605.8	656.4	261.5	262.2	918.6	312.9	0.0	171.9	746.8	0.0	746.8
2017	1268.5	605.8	1061.5	207.0	214.0	1275.5	669.7	0.0	236.8	1038.7	0.0	1038.7
AVERAGE	**926.1**	**605.8**	**726.2**	**199.8**	**199.8**	**926.0**	**320.3**	**0.0**	**214.9**	**711.2**	**0.0**	**711.2**

PRECIP	Total Precipitation
PET	Potential Evapotranspiration
W	Water Input (Rain + Snowmelt)
Soil Water (SW)	Available Water in the Soil Moisture Storage Zone
ΔSoil Water	Change in Soil Water
AET	Actual Evapotranspiration

The water balance calculations are conducted on a daily time step
All units in mm

Beckwith 10th Line Subdivision (122190)
Water Balance Model Parameters
Post-Development Conditions

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																Potential Evaporation Rates (AVG. mm/d)[3]											
																0.0	0.0	0.0	0.0	3.6	4.3	4.4	3.7	2.4	1.4	0.0	0.0
Surface Type	**Area ID**	**Catchment Parameters**						**Infiltration Factor[1]**				**Crop Cover Coefficient[2]**				**Potential Evapotranspiration (AVG. mm/d)**											
		AREA (m^2)	**AREA (ha)**	**SOILS (HSG)**	**LAND USE**	**TOPOGRAPHY**	**AWC[1]**	**IF (soils)**	**IF (cover)**	**IF (topo)**	**IF (Total)**	**Dormant Season**	**Initial Growing Season**	**Middle of Growing Season**	**End of Growing Season**	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Impervious (roofs / driveways / roads)	1	52809	5.28	C	IMPERVIOUS	MODERATE-RES	1.57	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	3.60	4.30	4.40	3.70	2.40	1.40	0.00	0.00
Pervious (open space / lawns)	2	244012	24.40	C	LAWNS	MODERATE-RES	125.00	0.20	0.10	0.15	0.45	0.40	0.78	1.15	0.55	0.00	0.00	0.00	0.00	2.81	4.95	5.06	4.26	1.32	0.56	0.00	0.00
Pervious (forest)	3	335839	33.58	C	FOREST	MODERATE	400.00	0.20	0.20	0.20	0.60	0.30	0.75	1.20	0.30	0.00	0.00	0.00	0.00	2.70	5.16	5.28	4.44	0.72	0.42	0.00	0.00

[1]Available Water Content (AWC) and Infiltration Factors (IF) for pervious areas based on Table 3.1 from the Stormwater Management Planning and Design Manual (MOE, 2003)

[2]Crop Cover Coefficients based on Table 12 from the Food and Agriculture Organization of the United Nations (FAO), 1998, Crop Evapotranspiration - Guidelines for Computing Crop Water Requirements - FAO Irrigation and Drainage paper 56

[3]Measured Potential Evaporation Data (i.e. Lake Evaporation) from the Environment Canada Canadian Climate Normals (Ottawa CDA, 1981-2010)

Beckwith 10th Line Subdivision (122190)
Water Balance Model Results
Post-Development Conditions

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Water Balance for Area 1: Impervious (roofs / driveways / roads)

Average Monthly Results												
Month	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
January	63.3	0.0	10.9	52.4	47.1	58.0	58.0	0.0	0.0	58.0	0.0	58.0
February	51.9	0.0	10.1	41.8	42.7	52.7	52.7	0.0	0.0	52.7	0.0	52.7
March	60.0	0.0	24.8	35.2	61.5	86.4	86.4	0.0	0.0	86.4	0.0	86.4
April	76.6	14.4	73.1	3.5	6.7	79.8	65.4	-1.0	8.0	72.9	0.0	72.9
May	78.2	102.1	78.2	0.0	0.0	78.2	-23.9	0.0	35.9	42.4	0.0	42.4
June	96.0	127.0	96.0	0.0	0.0	96.0	-31.0	-0.1	43.3	52.7	0.0	52.7
July	91.1	133.0	91.1	0.0	0.0	91.1	-41.8	-0.2	40.6	50.7	0.0	50.7
August	87.2	111.4	87.2	0.0	0.0	87.2	-24.2	-0.1	33.4	53.9	0.0	53.9
September	88.2	72.4	88.2	0.0	0.0	88.2	15.8	0.5	28.1	59.5	0.0	59.5
October	88.7	40.8	87.8	0.9	0.6	88.4	47.6	0.1	22.2	66.0	0.0	66.0
November	73.9	4.7	58.3	15.5	12.9	71.2	66.5	0.8	3.3	67.1	0.0	67.1
December	71.0	0.0	20.5	50.5	28.3	48.8	48.8	0.0	0.0	48.8	0.0	48.8
ANNUAL TOTAL	**926.1**	**605.8**	**726.2**	**199.8**	**199.8**	**926.0**	**320.3**	**0.0**	**214.9**	**711.2**	**0.0**	**711.2**
Total Number of Years = 30											*0%*	*77%*

Average Annual Results												
Year	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
1988	836.1	605.8	713.0	123.1	133.9	846.9	241.1	0.0	205.8	641.1	0.0	641.1
1989	817.1	605.8	620.0	197.1	153.8	773.8	168.0	0.0	180.5	593.3	0.0	593.3
1990	976.7	605.8	777.6	199.1	232.7	1010.3	404.5	0.0	207.6	802.7	0.0	802.7
1991	820.2	605.8	619.1	201.1	204.0	823.1	217.4	0.0	191.6	631.5	0.0	631.5
1992	908.3	605.8	651.9	256.4	260.2	912.1	306.4	0.0	211.4	700.8	0.0	700.8
1993	1019.3	605.8	754.0	265.3	266.3	1020.3	414.5	0.0	243.6	776.7	0.0	776.7
1994	909.5	605.8	681.6	227.9	234.2	915.8	310.1	0.0	224.9	690.9	0.0	690.9
1995	1038.4	605.8	809.4	229.0	138.2	947.6	341.9	0.0	197.5	750.2	0.0	750.2
1996	1004.7	605.8	866.9	137.8	213.7	1080.6	474.8	0.0	220.2	860.4	0.0	860.4
1997	773.0	605.8	475.9	297.1	309.5	785.4	179.7	0.0	178.1	607.3	0.0	607.3
1998	841.6	605.8	630.0	211.6	192.8	822.8	217.1	0.0	209.4	613.4	0.0	613.4
1999	830.5	605.8	623.3	207.2	219.8	843.1	237.3	0.0	192.7	650.4	0.0	650.4
2000	987.4	605.8	783.0	204.4	162.0	945.0	339.3	0.0	240.8	704.2	0.0	704.2
2001	753.6	605.8	580.3	173.3	213.1	793.4	187.7	0.0	195.0	598.5	0.0	598.5
2002	867.9	605.8	687.7	180.2	189.6	877.3	271.6	0.0	194.6	682.8	0.0	682.8
2003	1068.5	605.8	820.4	248.1	255.3	1075.7	469.9	0.0	233.9	841.8	0.0	841.8
2004	919.7	605.8	756.2	163.5	124.4	880.6	274.9	0.0	220.1	660.5	0.0	660.5
2005	939.6	605.8	784.9	154.7	175.8	960.7	354.9	0.0	218.2	742.5	0.0	742.5
2006	1152.0	605.8	970.6	181.4	183.1	1153.7	547.9	0.0	241.1	912.6	0.0	912.6
2007	901.0	605.8	728.8	172.2	170.0	898.8	293.1	0.0	205.7	693.1	0.0	693.1
2008	1057.6	605.8	681.6	376.0	391.5	1073.1	467.3	0.0	234.1	838.9	0.0	838.9
2009	946.5	605.8	800.3	146.2	93.4	893.7	288.0	0.0	256.2	637.5	0.0	637.5
2010	970.2	605.8	867.0	103.2	159.0	1026.0	420.2	0.0	245.4	780.5	0.0	780.5
2011	878.2	605.8	676.6	201.6	179.8	856.4	250.7	0.0	217.9	638.6	0.0	638.6
2012	807.5	605.8	596.6	210.9	147.0	743.6	137.8	0.0	208.6	535.0	0.0	535.0
2013	881.4	605.8	704.2	177.2	217.5	921.7	316.0	0.0	231.7	690.0	0.0	690.0
2014	903.1	605.8	759.5	143.6	189.0	948.5	342.7	0.0	230.4	718.0	0.0	718.0
2015	785.7	605.8	648.3	137.4	108.6	756.9	151.2	0.0	200.5	556.4	0.0	556.4
2016	917.9	605.8	656.4	261.5	262.2	918.6	312.9	0.0	171.9	746.8	0.0	746.8
2017	1268.5	605.8	1061.5	207.0	214.0	1275.5	669.7	0.0	236.8	1038.7	0.0	1038.7
AVERAGE	**926.1**	**605.8**	**726.2**	**199.8**	**199.8**	**926.0**	**320.3**	**0.0**	**214.9**	**711.2**	**0.0**	**711.2**

PRECIP	Total Precipitation
PET	Potential Evapotranspiration
W	Water Input (Rain + Snowmelt)
Soil Water (SW)	Available Water in the Soil Moisture Storage Zone
ΔSoil Water	Change in Soil Water
AET	Actual Evapotranspiration

The water balance calculations are conducted on a daily time step
All units in mm

Beckwith 10th Line Subdivision (122190)
Water Balance Model Results
Post-Development Conditions

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Water Balance for Area 2: Pervious (open space / lawns)

Average Monthly Results											
Month	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
January	63.3	0.0	10.9	52.4	47.1	58.0	58.0	0.0	0.0	58.0	26.1	31.9
February	51.9	0.0	10.1	41.8	42.7	52.7	52.7	0.0	0.0	52.7	23.7	29.0
March	60.0	0.0	24.8	35.2	61.5	86.4	86.4	0.0	0.0	86.4	38.9	47.5
April	76.6	11.2	73.1	3.5	6.7	79.8	68.6	-3.9	11.1	72.7	32.7	40.0
May	78.2	86.6	78.2	0.0	0.0	78.2	-8.4	-19.4	78.6	19.0	8.5	10.4
June	96.0	141.6	96.0	0.0	0.0	96.0	-45.6	-23.1	109.7	9.5	4.3	5.2
July	91.1	152.9	91.1	0.0	0.0	91.1	-61.8	-13.6	101.2	3.5	1.6	1.9
August	87.2	121.8	87.2	0.0	0.0	87.2	-34.6	3.3	79.6	4.2	1.9	2.3
September	88.2	46.5	88.2	0.0	0.0	88.2	41.7	40.0	35.7	12.4	5.6	6.8
October	88.7	17.6	87.8	0.9	0.6	88.4	70.8	15.9	16.9	55.6	25.0	30.6
November	73.9	1.9	58.3	15.5	12.9	71.2	69.3	0.7	1.9	68.6	30.9	37.8
December	71.0	0.0	20.5	50.5	28.3	48.8	48.8	0.0	0.0	48.8	21.9	26.8
ANNUAL TOTAL	**926.1**	**580.0**	**726.2**	**199.8**	**199.8**	**926.0**	**346.0**	**0.0**	**434.7**	**491.4**	**221.1**	**270.2**
Total Number of Years =	*30*										*24%*	*29%*

Average Annual Results											
Year	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
1988	836.1	580.0	713.0	123.1	133.9	846.9	266.8	0.0	429.1	417.8	188.0	229.8
1989	817.1	580.0	620.0	197.1	153.8	773.8	193.8	0.0	408.7	365.1	164.3	200.8
1990	976.7	580.0	777.6	199.1	232.7	1010.3	430.2	0.0	425.1	585.2	263.3	321.8
1991	820.2	580.0	619.1	201.1	204.0	823.1	243.1	0.0	353.1	470.1	211.5	258.5
1992	908.3	580.0	651.9	256.4	260.2	912.1	332.1	0.0	463.2	448.9	202.0	246.9
1993	1019.3	580.0	754.0	265.3	266.3	1020.3	440.2	0.0	429.2	591.1	266.0	325.1
1994	909.5	580.0	681.6	227.9	234.2	915.8	335.8	0.0	496.0	419.8	188.9	230.9
1995	1038.4	580.0	809.4	229.0	138.2	947.6	367.6	0.0	439.9	507.7	228.5	279.2
1996	1004.7	580.0	866.9	137.8	213.7	1080.6	500.5	0.0	456.1	624.5	281.0	343.5
1997	773.0	580.0	475.9	297.1	309.5	785.4	205.4	0.0	338.9	446.5	200.9	245.6
1998	841.6	580.0	630.0	211.6	192.8	822.8	242.8	0.0	420.0	402.8	181.3	221.5
1999	830.5	580.0	623.3	207.2	219.8	843.1	263.0	0.0	391.5	451.6	203.2	248.4
2000	987.4	580.0	783.0	204.4	162.0	945.0	365.0	0.0	489.1	455.9	205.2	250.7
2001	753.6	580.0	580.3	173.3	213.1	793.4	213.4	0.0	369.4	424.1	190.8	233.2
2002	867.9	580.0	687.7	180.2	189.6	877.3	297.3	0.0	419.1	458.3	206.2	252.0
2003	1068.5	580.0	820.4	248.1	255.3	1075.7	495.6	0.0	450.7	625.0	281.3	343.8
2004	919.7	580.0	756.2	163.5	124.4	880.6	300.6	0.0	425.7	454.9	204.7	250.2
2005	939.6	580.0	784.9	154.7	175.8	960.7	380.7	0.0	431.1	529.6	238.3	291.3
2006	1152.0	580.0	970.6	181.4	183.1	1153.7	573.6	0.0	483.5	670.1	301.6	368.6
2007	901.0	580.0	728.8	172.2	170.0	898.8	318.8	0.0	438.6	460.3	207.1	253.1
2008	1057.6	580.0	681.6	376.0	391.5	1073.1	493.0	0.0	472.4	600.6	270.3	330.4
2009	946.5	580.0	800.3	146.2	93.4	893.7	313.7	0.0	489.9	403.9	181.7	222.1
2010	970.2	580.0	867.0	103.2	159.0	1026.0	445.9	0.0	445.8	580.1	261.1	319.1
2011	878.2	580.0	676.6	201.6	179.8	856.4	276.4	0.0	409.1	447.4	201.3	246.1
2012	807.5	580.0	596.6	210.9	147.0	743.6	163.5	0.0	378.5	365.1	164.3	200.8
2013	881.4	580.0	704.2	177.2	217.5	921.7	341.7	0.0	465.4	456.3	205.4	251.0
2014	903.1	580.0	759.5	143.6	189.0	948.5	368.4	0.0	473.1	475.3	213.9	261.4
2015	785.7	580.0	648.3	137.4	108.6	756.9	176.9	0.0	437.2	319.7	143.8	175.8
2016	917.9	580.0	656.4	261.5	262.2	918.6	338.6	0.0	400.1	518.5	233.3	285.2
2017	1268.5	580.0	1061.5	207.0	214.0	1275.5	695.4	0.0	510.8	764.7	344.1	420.6
AVERAGE	**926.1**	**580.0**	**726.2**	**199.8**	**199.8**	**926.0**	**346.0**	**0.0**	**434.7**	**491.4**	**221.1**	**270.2**

PRECIP	Total Precipitation
PET	Potential Evapotranspiration
W	Water Input (Rain + Snowmelt)
Soil Water (SW)	Available Water in the Soil Moisture Storage Zone
ΔSoil Water	Change in Soil Water
AET	Actual Evapotranspiration

The water balance calculations are conducted on a daily time step
All units in mm

Beckwith 10th Line Subdivision (122190)
Water Balance Model Results
Post-Development Conditions

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Water Balance for Area 3: Pervious (forest)

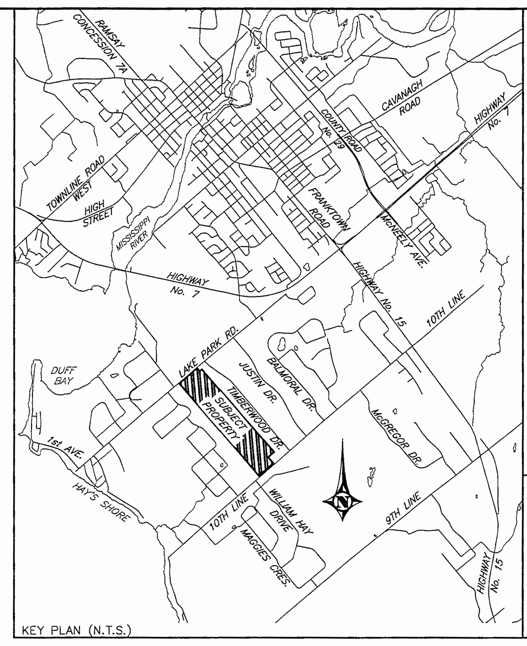
Average Monthly Results											
Month	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
January	63.3	0.0	10.9	52.4	47.1	58.0	58.0	0.4	0.0	57.7	34.6	23.1
February	51.9	0.0	10.1	41.8	42.7	52.7	52.7	0.0	0.0	52.7	31.6	21.1
March	60.0	0.0	24.8	35.2	61.5	86.4	86.4	0.0	0.0	86.4	51.8	34.5
April	76.6	10.8	73.1	3.5	6.7	79.8	69.0	-3.8	10.8	72.9	43.8	29.2
May	78.2	85.0	78.2	0.0	0.0	78.2	-6.8	-23.2	82.4	19.0	11.4	7.6
June	96.0	146.9	96.0	0.0	0.0	96.0	-50.9	-43.5	132.9	6.7	4.0	2.7
July	91.1	159.6	91.1	0.0	0.0	91.1	-68.4	-41.4	131.0	1.6	0.9	0.6
August	87.2	124.2	87.2	0.0	0.0	87.2	-37.0	-9.8	97.0	0.0	0.0	0.0
September	88.2	33.0	88.2	0.0	0.0	88.2	55.2	57.8	27.1	3.3	2.0	1.3
October	88.7	12.2	87.8	0.9	0.6	88.4	76.1	50.1	11.5	26.7	16.0	10.7
November	73.9	1.4	58.3	15.5	12.9	71.2	69.8	12.8	1.4	57.1	34.2	22.8
December	71.0	0.0	20.5	50.5	28.3	48.8	48.8	0.8	0.0	48.0	28.8	19.2
ANNUAL TOTAL	**926.1**	**573.2**	**726.2**	**199.8**	**199.8**	**926.0**	**352.9**	**0.0**	**494.0**	**432.0**	**259.2**	**172.8**

Total Number of Years = *30*

Average Annual Results											
Year	**Precip.**	**PET**	**Rain**	**Snow**	**Snowmelt**	**Water Input**	**W-PET**	**ΔSoil Water**	**AET**	**Surplus**	**Infiltration**	**Runoff**
1988	836.1	573.2	713.0	123.1	133.9	846.9	273.7	0.0	480.7	366.2	219.7	146.5
1989	817.1	573.2	620.0	197.1	153.8	773.8	200.6	0.0	475.8	298.0	178.8	119.2
1990	976.7	573.2	777.6	199.1	232.7	1010.3	437.1	0.0	478.7	531.6	319.0	212.6
1991	820.2	573.2	619.1	201.1	204.0	823.1	250.0	0.0	445.4	377.8	226.7	151.1
1992	908.3	573.2	651.9	256.4	260.2	912.1	339.0	0.0	501.7	410.4	246.3	164.2
1993	1019.3	573.2	754.0	265.3	266.3	1020.3	447.1	0.0	495.5	524.7	314.8	209.9
1994	909.5	573.2	681.6	227.9	234.2	915.8	342.6	0.0	536.9	378.9	227.3	151.6
1995	1038.4	573.2	809.4	229.0	138.2	947.6	374.5	0.0	499.3	448.3	269.0	179.3
1996	1004.7	573.2	866.9	137.8	213.7	1080.6	507.4	0.0	507.3	573.3	344.0	229.3
1997	773.0	573.2	475.9	297.1	309.5	785.4	212.2	-10.6	435.9	360.1	216.1	144.0
1998	841.6	573.2	630.0	211.6	192.8	822.8	249.6	10.6	486.4	325.9	195.5	130.4
1999	830.5	573.2	623.3	207.2	219.8	843.1	269.9	0.0	465.8	377.3	226.4	150.9
2000	987.4	573.2	783.0	204.4	162.0	945.0	371.8	0.0	528.6	416.5	249.9	166.6
2001	753.6	573.2	580.3	173.3	213.1	793.4	220.3	0.0	462.2	331.3	198.8	132.5
2002	867.9	573.2	687.7	180.2	189.6	877.3	304.2	0.0	495.6	381.7	229.0	152.7
2003	1068.5	573.2	820.4	248.1	255.3	1075.7	502.5	0.0	501.9	573.8	344.3	229.5
2004	919.7	573.2	756.2	163.5	124.4	880.6	307.4	0.0	491.0	389.7	233.8	155.9
2005	939.6	573.2	784.9	154.7	175.8	960.7	387.5	0.0	489.8	470.8	282.5	188.3
2006	1152.0	573.2	970.6	181.4	183.1	1153.7	580.5	0.0	520.5	633.1	379.9	253.3
2007	901.0	573.2	728.8	172.2	170.0	898.8	325.7	0.0	497.1	401.7	241.0	160.7
2008	1057.6	573.2	681.6	376.0	391.5	1073.1	499.9	0.0	520.1	553.0	331.8	221.2
2009	946.5	573.2	800.3	146.2	93.4	893.7	320.6	0.0	532.3	361.4	216.9	144.6
2010	970.2	573.2	867.0	103.2	159.0	1026.0	452.8	0.0	494.2	531.7	319.0	212.7
2011	878.2	573.2	676.6	201.6	179.8	856.4	283.3	0.0	479.3	377.2	226.3	150.9
2012	807.5	573.2	596.6	210.9	147.0	743.6	170.4	0.0	459.9	283.7	170.2	113.5
2013	881.4	573.2	704.2	177.2	217.5	921.7	348.5	0.0	514.5	407.2	244.3	162.9
2014	903.1	573.2	759.5	143.6	189.0	948.5	375.3	0.0	520.6	427.9	256.7	171.1
2015	785.7	573.2	648.3	137.4	108.6	756.9	183.7	0.0	493.6	263.3	158.0	105.3
2016	917.9	573.2	656.4	261.5	262.2	918.6	345.5	0.0	464.1	454.5	272.7	181.8
2017	1268.5	573.2	1061.5	207.0	214.0	1275.5	702.3	0.0	545.6	729.9	437.9	292.0
AVERAGE	**926.1**	**573.2**	**726.2**	**199.8**	**199.8**	**926.0**	**352.9**	**0.0**	**494.0**	**432.0**	**259.2**	**172.8**

PRECIP	Total Precipitation
PET	Potential Evapotranspiration
W	Water Input (Rain + Snowmelt)
Soil Water (SW)	Available Water in the Soil Moisture Storage Zone
ΔSoil Water	Change in Soil Water
AET	Actual Evapotranspiration

The water balance calculations are conducted on a daily time step
All units in mm



DRAFT PLAN OF SUBDIVISION OF
PART OF THE
SOUTHWEST HALF LOT 11
CONCESSION 10
TOWNSHIP OF BECKWITH
COUNTY OF LANARK

TO BE SUBDIVIDED INTO:

LOTS 1–54 FOR SINGLE DETACHED RESIDENTIAL DWELLINGS
BLOCK 55 FOR STORMWATER MANAGEMENT
BLOCKS 56 AND 57 FOR TRAIL BLOCKS
BLOCK 58 FOR STORM WATER RETENTION
BLOCK 59 FOR ROAD WIDENING
BLOCKS 59–63 FOR RESERVES
STREET A – 20 METRES

APPLICANT AND PROPERTY OWNER

1384341 ONTARIO LTD.
9094 CAVANAGH ROAD
ASHTON, ONTARIO
KOA 1BO

OWNERS CERTIFICATE

I HEREBY AUTHORIZE THE PREPARATION AND SUBMISSION OF THIS PLAN TO THE COUNCIL OF THE COUNTY OF LANARK.

DATED AT ASHTON THIS 14th DAY OF OCTOBER, 2025

JEFFREY CAVANAGH, PRESIDENT
I HAVE THE AUTHORITY TO BIND THE CORPORATION

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJOINING LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

OCTOBER 8, 2025
DATE

JACK GAUTHIER
ONTARIO LAND SURVEYOR

LEGEND AND NOTES

RF	DENOTES	RAIL FENCE
SRF	DENOTES	SNAKE RAIL FENCE
N,S,E,W	DENOTES	NORTH, SOUTH, EAST, WEST

BEARINGS AND ELEVATIONS

BEARINGS ARE GRID BEARINGS DERIVED FROM REAL TIME NETWORK OBSERVATIONS AND ARE REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 18 (75° 00 WEST LONGITUDE) NAD 83 (CSRS) (2010.0)

ELEVATIONS, CONTOURS AND EXISTING TOPOGRAPGHIC FEATURES SHOWN ON THIS PLAN ARE DERIVED FROM M.N.R.F DRAPE RASTER, 2014.

SCALE 1 : 1200

0 25 50 75 100 Metres

METRIC :

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 (17) OF THE PLANNING ACT

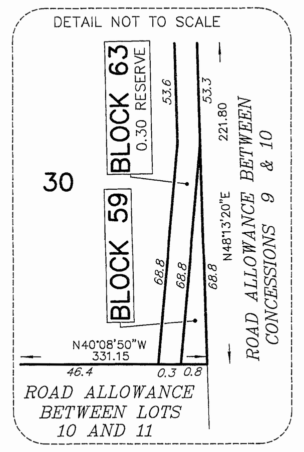
A. AS SHOWN ON THE DRAFT PLAN
B. AS SHOWN ON THE DRAFT PLAN
C. AS SHOWN ON THE DRAFT PLAN
D. AS DESCRIBED ON THE TITLE BLOCK
E. AS SHOWN ON THE DRAFT PLAN
F. AS SHOWN ON THE DRAFT PLAN
G. AS SHOWN ON THE DRAFT PLAN
H. PRIVATE WELLS TO SUPPLY DOMESTIC WATER
I. TOPSOIL UNDERLAIN BY SILTY SAND AND/OR GLACIAL TILL FOLLOWED BY BEDROCK, OR TOPSOIL DIRECTLY UNDERLAIN BY BEDROCK.
J. AS SHOWN ON THE DRAFT PLAN
K. MUNICIPAL WATER AND WASTEWATER SERVICES ARE NOT AVAILABLE
L. NO RESTRICTIONS APPLY.

SCHEDULE OF AREAS

LOT	FRONTAGE (m)	AREA (m^2)
1	47.6	5,475
2	45.6	6,978
3	45.6	6,787
4	47.2	6,536
5	50.7	6,148
6	50.2	5,372
7	48.1	4,889
8	48.4	4,991
9	51.9	5,662
10	53.6	6,818
11	50.3	7,835
12	48.1	8,116
13	52.6	7,576
14	55.0	6,370
15	49.6	5,385
16	49.4	5,278
17	57.7	6,503
18	50.4	7,552
19	46.3	7,859
20	47.8	7,448
21	47.9	6,925
22	47.9	6,438
23	46.6	6,196
24	45.5	6,238
25	53.2	7,346
26	48.5	7,598
27	45.5	10,307
28	58.4	4,368
29	60.9	4,492
30	46.1	5,898
31	45.5	5,740
32	45.5	5,681
33	45.6	5,637
34	46.8	5,858
35	47.7	6,428
36	46.3	6,931
37	45.7	7,008
38	46.9	6,640
39	47.0	6,085
40	47.0	5,526
41	80.0	6,208
42	48.1	6,973
43	45.5	7,303
44	45.7	5,132
45	48.3	5,559
46	51.1	6,528
47	49.7	7,549
48	46.1	8,126
49	46.2	8,119
50	48.2	7,577
51	49.2	6,967
52	45.9	6,081
53	45.6	5,961
54	45.5	5,960
TOTAL LOT AREA		**350,961**
AVERAGE LOT AREA		**6,499**

BLOCK	FRONTAGE	AREA (m^2)
55	N/A	6,242
56	N/A	935
57	N/A	836
58	N/A	27,062
59	N/A	28
60	N/A	33
61	N/A	37
62	N/A	20
63	N/A	37

STREET	LENGTH (m)	AREA (m^2)
STREET A	1,460	29,230
TOTAL AREA (m^2)		**415,421**
TOTAL AREA (ha)		**41.54**



REVISIONS

No.	DESCRIPTION	DATE	BY
1.	UPDATED LOT 55 TO BLOCK 55	03/07/2025	MP
2.	DETAIL REMOVED	09/25/2025	MP
3.	ADD BLOCK 59 FOR ROAD WIDENING AND REVISE AREAS AND LOT FRONTAGES	10/02/2025	DL

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www.egis-group.com
3240 Drummond Con. 5A, R.R. #7
Perth, ON K7H 3C9
Tel: 613-267-6524 Fax: 613-267-7992

PROJECT				DRAWN:
10TH LINE SUBDIVISION				DL, MP
				CHECKED: JG
DATE	PAPER SIZE	SCALE	PROJECT No.	DWG No.
2025	36"x60"	1:1200	22–0321 DRAFT PLAN	01