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March 24, 2020

Reference No. 1909-W140

Page 1 of 10

Brock Road Duffins Forest Inc.
22 Ross Shiner Lane
Whitchurch-Stouffville, Ontario
L4A 0V5

Attention: Ms. Alison Lin

**Re: Pre- and Post-Development Water Balance Assessment
Proposed Residential Development
2055 Brock Road
City of Pickering**

Dear Sir:

Soil Engineers Ltd. (SEL) was retained to complete a pre- and post-development water balance assessment and an associated mitigation plan for the captioned residential development site in the City of Pickering and our findings and recommendations are presented in this letter report.

○ **Introduction**

The subject site is located approximately 350 m north of the intersection of Finch Avenue and Brock Road, in the City of Pickering. The surrounding land use includes; an institutional property (Pickering Islamic Centre) and residential properties to the north, wooded areas to the east, the West Duffins Creek and residential properties to the south, along with Brock Road, residential properties and a park to the west. The proposed development will comprise of the construction of two stacked townhouse blocks, one street townhouse block, and one, 20-storey high rise residential building with an associated two-level underground parking structure.



- **Background**

SEL concurrently completed a soil investigations for the subject site (Reference No. 1907-S241). A review of the borehole logs indicates that beneath the layer of topsoil and/or earth fill, the native soils underlying the subject site consists of sand, silty clay, and glacial till (sandy silt till/silty sand till), extending to the maximum depth of investigation at 12.7 m below the prevailing ground surface (mbgs). Groundwater levels from the concurrent hydrogeological assessment were measured at depths of 2.93 to 6.61 m below the prevailing ground surface or at elevations of 82.64 to 85.72 m above sea level.

- **Water Balance Assessment**

The water balance assessment for this proposed development site is based on the following equation:

$$P = ET + R + I + \Delta S$$

Where:

- P -- Average Annual Precipitation
- ET -- Evapotranspiration
- R -- Surface Water Runoff
- I -- Infiltration
- Δs -- Change in Groundwater Storage, taken as 0

- **Precipitation**

The Toronto and Region Conservation Authority (TRCA) TRSPA tool was used for the current pre- and post-development water balance assessments. The water balance calculations for the subject site are summarized in the Appendix. Based on the TRCA tool; (<https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/>), a precipitation rate of 873 mm/year was considered for the subject site which was used to complete the current pre- and post-development water balance assessments.



- **Interception**

Based on the adoption of the SWM Planning and Design Manual (MECP, 2003), evapotranspiration includes the evaporation from all sources; including; precipitation, water, snow, vegetation and from water droplets on plant surfaces, plus the transpiration from plants, not involving water droplets retained on leaves. As such, interception was not included for the current pre- and post-development water balance assessments as it has been included in the estimate for evapotranspiration.

- **Groundwater Storage**

Although groundwater storage experiences gains and losses on a short-term basis, the net change in groundwater storage (ΔS) over the long-term is generally zero. For this reason, the change in groundwater storage is shown as zero (0) and has not been included in the water balance calculation.

- **Evapotranspiration**

In general, evapotranspiration (ET) refers to the transfer of water from vegetation and from the soil surface to the atmosphere in the form of water vapour. The term considers evaporation from the soil surface, and from man-made infrastructure surfaces (asphaltic and concrete roads and building roofs), together with the transpiration and interception from plants and trees because of the difficulties in separating these processes. Potential evapotranspiration (PET) refers to the transfer/loss of water from vegetated surfaces to the atmosphere under the condition of unlimited water supply. The actual rate of evapotranspiration (AET) is generally less than PET under dry conditions (i.e., during the summer season when there is a soil moisture deficit). Use of the TRSPA tool suggests that an ET value of 710 mm/year, which has been adopted for the subject site, can be applied for the pre- and post-development water balance assessments.

- **Infiltration and Runoff**

The TRSPA Tool suggests an infiltration recharge rate of 204 mm/year can be adopted for the site. However, a modified infiltration rate of 90 mm/year was considered for the current water



balance assessment, which is based on the MECP infiltration factors and the water surplus factor or (P-ET) for the site, where the water surplus was estimated at 163 mm/year. Details of the assessment are presented in the Appendix, on pages 1 of 3. Table 2 summarizes the infiltration and runoff estimates based on the considered approach.

The TRSPA Tool suggests a runoff rate of 138 mm/year for the subject site. This value was modified to a runoff factor of 73 mm/year, which is also based on use of the water surplus estimate of 163 mm/year times 1 minus the cumulative infiltration factors, or (1-0.55) (Table 2), which were also considered for the current estimation to conform with the precipitation and ET rates that were adopted from the TRSPA tool and used for the assessment. The average annual depth estimates for infiltration and runoff for the subject site are given in Table 1. The water balance depth estimates for the infiltration and runoff component are provided in Table 2.

The TRSPA tool derived infiltration and runoff depth estimates were not used since the sum of these estimates along with ET do not add up to the TRSPA tool derived estimate for precipitation, which is the reason for the use of the modified approach as described above.

Table 1 - Summary of Water Balance Components that were Adopted from the TRCA TRSPA Tool And Modified Based on the MECP Infiltration Factors for the Site

Precipitation (mm/year)	Evapotranspiration (mm/year)	Runoff (mm/year)	Infiltration (mm/year)
873	710	73	90

Runoff from impervious surfaces is calculated differently than runoff from pervious soil/vegetated covered surfaces. As a general rule, the ET from impervious surfaces, on an average annualized basis is calculated, by taking 10% of the average annual precipitation, while runoff is calculated by taking 90% of the average annual precipitation. The subject site is currently vacant, being covered with grass and weeds. Impervious surfaces are being proposed for construction at the development site. As such, the ET and runoff depth estimates on an average, annualized depth basis for the proposed impervious areas are 87.3 mm/year and 785.7 mm/year, respectively.



Table 2 - Summary of Infiltration and Runoff Estimation

Land Characteristics	MECP Infiltration Factors	Water Surplus Estimate (mm/yr)	Infiltration Estimate (mm/yr.)	Runoff Estimate (mm/yr.)
Soil: (silty clay, sandy silt till/silty sand till)	0.20	163	$I = 0.55 \times 163$	$R = (1 - 0.55) \times 163$
Slope: (rolling land)	0.20			
Vegetation Cover: (Grass land and wooded lot)	0.15			
Cumulative Infiltration Factor	0.55		89.65	73.35

○ **Pre-Development Water Balance**

Since there are no pre-existing structures or paved areas within the undeveloped subject site, the pre-development water balance for the site was calculated by multiplying the existing undeveloped site areas by the various, averaged, annualized depth estimates for Precipitation, ET, infiltration and Runoff. The average annual volumetric estimates for each pre-development water balance component are given in Table 3.

Table 3 - Summary of Pre-Development Volumetric Water Balance Components

Pre-Development Site Areas	Area Coverage (m ²)	Precipitation (m ³ /year)	AET (m ³ /year)	Infiltration (m ³ /year)	Runoff (Pervious) (m ³ /year)
Pervious Areas (Entire Site Area)	50,478.0	44,067.3	35,839.4	4,525.4	3,702.6
Total Area/Volume	50,478.0	44,067.3	35,839.4	4,525.4	3,702.6

The pre-development water balance components for the site were calculated on an annualized depth basis by dividing the volumetric estimates for each water balance component, from above by the total site area. Based on this approach, the depth-based water balance components are presented as follows:

$$P (873.0) = ET (710.0) + I (90.0) + R (73.0)$$



○ **Post-Development Water Balance**

Based on a review of the Enlarged Site Plan & Statistics, prepared by Kohn Partnership Architects Inc., Project No. 17-119, Drawing No. A1 01, the proposed development will consist of the construction of two stacked townhouse blocks, one street townhouse block, and a 20-storey high-rise building, with associated driveways, parking lot/paved areas, and landscaped/green areas. A review of the coverage table from the site statistics indicates that the total lot area is 50,478 m². Of this, 4,745 m² will be developed into buildings, 5,085 m² will be paved, hardscaped areas, and 3,285 m² will be green/ landscaped/ softscaped areas. The remaining 37,363 m² will be conveyed and will remain wooded as is.

The post-development water balance components were calculated using the same, depth-based components that were used for the pre-development water balance calculations, i.e., average annual precipitation and average annual ET. Following site development, with no infiltration through the impervious areas, the depth estimates for runoff and ET become 90% and 10% of the average annual precipitation, respectively, giving depth estimates of 87.3 mm/year and 785.7 mm/year for ET and runoff respectively for proposed impervious developed surfaces. The estimated post-development water balance volumes for the developed site are provided, as follows in Table 4:

Table 4 - Summary of Post-Development Volumetric Water Balance Components

Post-Development Site Areas	Area Coverage (m²)	Precipitation (m³/year)	AET (Impervious) (m³/year)	AET (Pervious) (m³/year)	Infiltration (m³/year)	Runoff (Pervious) (m³/year)	Runoff (Impervious) (m³/year)
<u>Impervious Area (Building Area)</u>	4,745.0	4,142.4	414.2	0.0	0.0	0.0	3,728.1
<u>Impervious Area (Hardscaped Area)</u>	5,085.0	4,439.2	443.9	0.0	0.0	0.0	3,995.3
<u>Pervious Area (Softscaped Area)</u>	3,285.0	2,867.8	0.0	2,332.4	295.7	239.8	0.0
<u>Conveyed Area (Wooded Area)</u>	37,363.0	32,617.9	0.0	26,527.7	3,362.7	2,727.5	0.0
Total Area/Volume	50,478.0	44,067.3	858.1	28,860.1	3,658.4	2,967.3	7,723.4



From the volumetric water balance estimates presented in Table 4, the depth-based post-development water balance estimates were determined after dividing volumetric total amounts by the total site area, presented as follows:

$$P (873.00) = ET (588.74) + I (72.48) + R (211.79)$$

Comparison of the pre- and post-development water balances shows a decrease of 121.3 mm/year, or 17.1 %, in annual evapotranspiration, a decrease of 17.2 mm/year, or 19.2 %, in annual infiltration, and a gain in runoff of 138.4 mm/year, or 288.7 %. The volumetric comparisons of evapotranspiration, infiltration and runoff between the pre-developed and post-developed site are summarized in Table 5. A review of the findings indicates that after development, decreases of 6,121.2 m³/year and 867.0 m³/year are anticipated for ET and infiltration, respectively. An increase of 6,988.2 m³/year is also expected for runoff for the post-developed site compared with the pre-developed site. The anticipated infiltration deficit between the pre and post developed site is 867.0 m³/year.

Table 5 - Comparison Summary of Pre- and Post-Development Water Balance/ Budget Components

	Precipitation (m³/year)	ET (m³/year)	Infiltration (m³/year)	Runoff (m³/year)
Pre-development	44,067.3	35,839.4	4,525.4	3,702.6
Post- development	44,067.3	29,718.2	3,658.4	10,690.8
Volumetric Change in Pre- and Post- Development Water Balance Parameters	-	-6,121.1	-867.0	+6,988.2

- loss
+ gain

○ **Mitigation Plan**

The difference between the pre- and post- development water balances can be attributed to establishment of impervious surfaces, such as paved areas, building footprints and building rooftops. Proposed LID measures to maintain the pre-development water balance should consider the low permeability for the existing surface soil, comprised, mainly of silty clay and glacial till (silty sand till/sandy silt till), which may limit the amount of infiltration and groundwater recharge to the subsurface.



The results of the current hydrogeological assessment indicate that groundwater was measured at depth elevations of 82.64 to 85.72 masl. The results for hydraulic conductivity estimates for the silty clay and glacial till layers at the depths of the well screen intervals, indicates that the estimated hydraulic conductivity ranges from 1.8×10^{-7} to 8.5×10^{-7} m/sec, confirming the low permeability for the native subsoil horizon which might be considered for any proposed infiltration infrastructure design to promote groundwater recharge to the subsurface at the developed site.

The proposed development will consist of the construction of two stacked townhouse blocks, one street townhouse block, and a 20-storey high-rise building, having associated parking lot/paved areas, and landscaped/green areas. An area of 4,745 m², has been considered as rooftop/building areas, with an estimated area of 5,085 m², being considered for paved/hardscaped areas following site development. The anticipated runoff volumes, derived from the rooftop and paved areas (i.e. 90% of annual precipitation), is provided in Table 6.

Table 6 - Anticipated Volumetric Runoff from Proposed Rooftops and Paved Areas

Proposed Building Rooftop/ Paved Areas	Approximate Area Coverage (m²)	Runoff Rate (mm/year)	Estimated Runoff (Building Areas and Paved Areas) (m³/year)
Proposed Building Rooftop Area	4,745.0	785.7	3,728.1
Proposed Hardscaped Areas	5,085.0	785.7	3,995.3
Total	9,830.0	785.7	7,723.4

Review of the approved Storm Water Management Report provided by GHD in 2015 for Kindwin Development Inc, shows that an infiltration target of 1,240 m³/ year was applied to the subject site. As a part of the detailed design process of those lands, the Kindwin Development met all infiltration requirements for both their site (2077 Brock Road), and for the subject site (2055 Brock Road). This was designed and approved such that no on-site infiltration would be required for the subject site as all available clean water will be directed towards the wetland.

As shown above, the predevelopment infiltration estimate for the undeveloped site is 4,525.4 m³/year and an infiltration deficit of 867 m³/year was assessed for the developed site relative to the undeveloped site. Therefore, the 1,240 m³/year accounted for by the Kindwin Development



on behalf of the subject site was more than sufficient to meet the infiltration targets for 2055 Brock Road. Therefore, no further infiltration measures are required for the subject site.

For all details surrounding the infiltration techniques implemented by the Kindwin Lands, refer to the approved Kindwin Stormwater Management Report, Drawing SWM-101, Drawing SWM-102 and Appendix C prepared by GHD Inc.

Based on the proposed mitigation plan, the post development mitigated water balance volumes are summarized in the Table 7 below.

Table 7- Mitigated Post Development Water Balance

Post-Development Site Areas	Area Coverage (m²)	Precipitation (m³/year)	AET (Impervious) (m³/year)	AET (Pervious) (m³/year)	Infiltration (m³/year)	Runoff (Pervious) (m³/year)	Runoff (Impervious) (m³/year)
<u>Impervious Area (Building Area)</u>	4,745.0	414.2	414.2	0.0	0.0	0.0	3,728.1
<u>Impervious Area (Hardscaped Area)</u>	5,085.0	4,439.2	443.9	0.0	0.0	0.0	3,995.3
<u>Pervious Area (Softscaped Area)</u>	3,285.0	2,867.8	0.0	2,332.4	295.7	239.8	0.0
<u>Conveyed Area (Wooded Area)</u>	37,363.0	36,346.1	0.0	26,527.7	7,090.8	2,727.5	0.0
Total Area/Volume	50,478.0	44,067.3	858.1	28,860.1	7,386.5	2,967.3	7,723.4

Impervious runoff from Roof Areas of 3,728.1 m³/year re-directed to natural area, giving net mitigated runoff of 6,962.6 m³/year

Based on the mitigation plan and estimated water balance volumes summarized in Table 7, the mitigated depth-based post development water balance components are provided as follows.

$$P (873.0) = ET (588.74) + I (146.33) + R (137.93)$$

Comparison of the pre- and mitigated post-development water balances shows a decrease of 121.3 mm/year, or 17.1 %, in annual evapotranspiration, a gain of 56.7 mm/year, or 63.2 %, in annual infiltration, and gain in runoff of 64.6 mm/year, or 188.0 %. The volumetric comparisons of evapotranspiration, infiltration and runoff between the pre, post and mitigated post development water balance are summarized in Table 8, below.



Table 8 - Comparison Summary of Pre- and Post-Development Water Balance/ Budget Components

	Precipitation (m ³ /year)	ET (m ³ /year)	Infiltration (m ³ /year)	Runoff (m ³ /year)
Pre-development	44,067.3	35,839.4	4,525.4	3,702.6
Post- development	44,067.3	29,718.2	3,658.4	10,690.7
Post Development with Mitigation	44,067.3	29,718.2	7,386.5	6,962.6
Volumetric Change in Pre- and Post- Development Water Balance Parameters	-	-6,121.1	-867.0	+6,988.6
Volumetric Change in Pre- and Post- Development Water Balance Parameters After Mitigation	-	-6,121.1	+2,861.1	+3,260.0

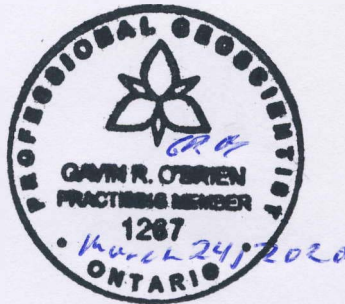
- loss
+ gain

We trust the above satisfies your present requirements. Should you have any further queries, please feel free to contact this office.

Yours truly,
SOIL ENGINEERS LTD.

Vivian Yu, B.Sc.

Gavin O'Brien, M.Sc., P.Geo.
VY/GO



ENCLOSURES






Site Location Plan..... Drawing No. 1
Pre- and Post-Development Water Balance Assessment..... Appendix

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



-  Approximate Boundary of Subject Site
-  Waterbody
-  Watercourse
-  Major Road
-  Local Road

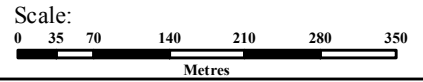


Title: Site Location Plan

Project:
 Hydrogeological Assessment
 Proposed Residential Development
 2055 Brock Road
 City of Pickering

Reference No. 1909-W140

Date: November 20, 2019



Drawing No. 1

C:\GIS\2019\1909-W140

2055 Brock Rd, City of Pickering

Precipitation, Recharge, Runoff and Infiltration Rates adopted from TRCA TRSPA Tool

Address	Precipitation (mm/yr)	ET (mm/yr)	Runoff (mm/yr)	Infiltration/Recharge (mm/yr)	ET+Runoff+Infiltration (mm/yr)
2055 Brock Road	873	710	138	204	1052
Modified	873	710	73.35	89.65	873

Source: <https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/>

Pre-Development Water Balance/Budget

2055 Brock Rd, City of Pickering

Evapotranspiration Adopted from TRSPA WB TRCA tool	710 mm/yr
Infiltration Adopted from MECP Infiltration Factors	90 mm/yr
Runoff Adopted from MECP Infiltration Factors	73 mm/yr

Avg Annual Precipitation	873 mm/yr	Adopted from TRSPA WB Tool
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ET	pervious surfaces	0.1	10%
R	impervious surfaces	0.9	90%

Site Area	50,478.00 m²
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Site Areas	Areas m ²	Impervious factor	Assigned ET mm/yr	Water Surplus mm/yr	Infiltration Adopted from MECP Factors mm/yr
Existing Pervious Areas	50,478.0	0	710.0	163.0	89.65
Existing Impervious Area	0.0	1	87.3	785.7	0
Total Area	50,478.0				

Runoff mm/yr	precipitation m ³ /yr	Infilt Vol m ³ /yr	RO Vol m ³ /yr	ET Vol m ³ /yr	
73.4	44,067.29	4,525.4	3,702.6	35,839.4	
785.7	0.0	0.0	0.0	0.0	
859.1	44,067.29	4,525.4	3,702.6	35,839.4	check
percentages		0	0	1	1

Parcel A: Pre Development Water Balance/Budget									
P	=	ET	+	I	+	R	+	ΔS	Check
873	=	710	+	89.65	+	73.35	+	0.0	873.0

Source: <https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/>

Post-Development Water Balance/Budget

2055 Brock Rd, City of Pickering

Avg Annual Precipitation	873	mm/yr	Adopted from TRSPA WB Tool	
ET	impervious surfaces	0.1	10%	
R	impervious surfaces	0.9	90%	

Evapotranspiration Adopted from TRSPA WB TRCA tool	710 mm/yr
Infiltration Adopted from MECP Infiltration Factors	90 mm/yr
Runoff Adopted from MECP Infiltration Factors	73 mm/yr

Future Developed Site Areas	Areas m ²	Impervious factor	Assigned ET Pervious Portion mm/yr	Water Surplus mm/yr	Infiltration - Pervious Portion mm/yr	ET - Impervious Portion mm/yr	Runoff - Impervious Areas mm/yr	Runoff Pervious Portion mm/yr	precipitation m ³ /yr	Pervious Area			Impervious Area		Total Et and Ro.	
										Infil Vol. Pervious Areas m ³ /yr	RO Vol. Pervious Areas m ³ /yr	ET Vol Pervious Areas m ³ /yr	RO Vol. Impervious Areas m ³ /yr	ET Vol Imperv Areas m ³ /yr	Total ET m ³ /yr	Total RO m ³ /yr
Proposed Building Areas	4,745.0	1.0	0.0	785.7	0.0	87.3	785.7	0.0	4,142.4	0.0	0.0	0.0	3,728.1	414.2	414.2	3,728.1
Proposed Hardscaped Areas	5,085.0	1.0	0.0	785.7	0.0	87.3	785.7	0.0	4,439.2	0.0	0.0	0.0	3,995.3	443.9	443.9	3,995.3
Proposed Softscaped Areas	3,285.0	0.0	710.0	163.0	90.0	0.0	0.0	73.0	2,867.8	295.7	239.8	2,332.4	0.0	0.0	2,332.4	239.8
Proposed Conveyed Areas (Wooded)	37,363.0	0.0	710.0	163.0	90.0	0.0	0.0	73.0	32,617.9	3,362.7	2,727.5	26,527.7	0.0	0.0	26,527.7	2,727.5
Total Area	50,478.0							Total	44,067.3	3,658.4	2,967.3	28,860.1	7,723.4	858.1	29,718.2	10,690.7

Parcel A: Post Development Water Balance/Budget										
P	=	ET	+	I	+	R	+	ΔS		Check
873	=	588.74	+	72.48	+	211.79	+	0.0		873.0

Pre Development Water Balance/Budget										
P	=	ET	+	I	+	R	+	ΔS		Check
873	=	710	+	89.65	+	73.35	+	0.0		873.0

Totals													Total RO	10,690.7	Total ET	29,718.2
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Loss/Gain in Post		ET		I		R		ΔS
	loss:	121.3		17.2	gain:	138.4		0
	% loss:	17.1		19.2	%gain	288.7		

Source: <https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/>

Post-Development Water Balance/Budget With Mitigation																																									
2055 Brock Rd, City of Pickering																																									
Evapotranspiration Adopted from TRSPA WB TRCA tool 710 mm/yr		Avg Annual Precipitation 873 mm/yr Adopted from TRSPA WB Tool																																							
Infiltration Adopted from MECP Infiltration Factors 90 mm/yr		ET impervious surfaces 0.1 10% R impervious surfaces 0.9 90%																																							
Runoff Adopted from MECP Infiltration Factors 73 mm/yr																																									
Re-direction of rooftop Runoff 2055 Brock Road to infiltration Gallery at 2077 Brock Road (Considered to recharge Wetland)																																									
applied to wooded area of site for mitigation plan Local Depths																																									
<table border="1" style="width:100%; border-collapse: collapse; margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 10%;">Infiltration</th> <th style="width: 10%;">Runoff</th> <th style="width: 10%;">ET</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">189.78</td> <td style="text-align: center;">73.0</td> <td style="text-align: center;">710.0</td> </tr> </tbody> </table>																			Infiltration	Runoff	ET		189.78	73.0	710.0																
	Infiltration	Runoff	ET																																						
	189.78	73.0	710.0																																						
Future Developed Site Areas	Areas	Impervious factor	Assigned ET Pervious Portion	Water Surplus	Infiltration - Pervious Portion	ET - Impervious Portion	Runoff - Impervious Areas	Runoff Pervious Portion	precipitation	Pervious Area			Impervious Area		Mitigated	Total Et and Ro.																									
	m ²		mm/yr	mm/yr	mm/yr	mm/yr	mm/yr	mm/yr	mm/yr	m ³ /yr	Infiltr. Pervious Areas m ³ /yr	RO Vol. Pervious Areas m ³ /yr	ET Vol Pervious Areas m ³ /yr	RO Vol. Impervious Areas m ³ /yr	ET Vol Imperv Areas m ³ /yr	Re-Directed Runoff m ³ /yr	Total ET m ³ /yr	Total RO m ³ /yr																							
Proposed Building Areas	4,745.0	1.0	0.0	785.7	0.0	87.3	785.7	0.0	414.2	0.0	0.0	0.0	3,728.1	414.2	3,728.1	414.2	3,728.1																								
Proposed Hardscaped Areas	5,085.0	1.0	0.0	785.7	0.0	87.3	785.7	0.0	4,439.2	0.0	0.0	0.0	3,995.3	443.9		443.9	3,995.3																								
Proposed Softscaped Areas	3,285.0	0.0	710.0	163.0	90.0	0.0	0.0	73.0	2,867.8	295.7	239.8	2,332.4	0.0	0.0		2,332.4	239.8																								
Proposed Conveyed Areas (Wooded)	37,363.0	0.0	710.0	163.0	90.0	0.0	0.0	73.0	36,346.1	7,090.8	2,727.5	26,527.7	0.0	0.0		26,527.7	2,727.5																								
Total Area	50,478.0							Total	44,067.3	7,386.5	2,967.3	28,860.1	7,723.4	858.1		29,718.2	10,690.7																								
										Totals																															
Parcel A: Post Development Water Balance/Budget- Mitigated																																									
P	=	ET	+	I	+	R	+	ΔS	Check																																
873	=	588.74	+	146.33	+	137.93	+	0.0	873.0			Total RO		10,690.7		Total ET		29,718.2																							
Pre Development Water Balance/Budget																																									
P	=	ET	+	I	+	R	+	ΔS	Check																																
873	=	710	+	89.65	+	73.35	+	0.0	873.0			Mitigated RO		6,962.6		Total ET		29,718.2																							
<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 10%; text-align: center;">ET</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">I</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">R</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">ΔS</td> </tr> <tr> <td>Loss/Gain in Post</td> <td>loss: -121.3</td> <td></td> <td>loss: 56.7</td> <td></td> <td>gain: 64.6</td> <td></td> <td>0</td> </tr> <tr> <td></td> <td>% loss: -17.1</td> <td></td> <td>% loss: 63.2</td> <td></td> <td>% gain: 188.0</td> <td></td> <td></td> </tr> </table>																			ET		I		R		ΔS	Loss/Gain in Post	loss: -121.3		loss: 56.7		gain: 64.6		0		% loss: -17.1		% loss: 63.2		% gain: 188.0		
	ET		I		R		ΔS																																		
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Source: https://trca.ca/conservation/drinking-water-source-protection/trspa-water-balance-tool/																																									