Pre-Development Monthly Water Balance Analysis - Thornthwaite and Mather model
Manors of Belfountain, Caledon, ON
Hydrogeological Investigation

Total Site Area (ha)	70.28	
Land Description Factors	**Area A (Agricultural)**	**Sub-Area B (Wooded)**
Topography	0.30	0.10
Soils	0.40	0.40
Cover	0.10	0.20
Sum (Infiltration Factor)	0.80	0.70
Soil Moisture Capacity (mm)	75	250
Site Area	50.27	20.01
Percentage of Total Site Area	72%	28%

100%

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Climate Data (Data from Orangeville MOE Station, Ontario via Environment Canada Website - 2010 to 2015													
Average Daily Temperature (°C)	-8.3	-8.5	-1.8	5.3	13.3	17.0	19.9	18.5	14.3	8.1	2.1	-2.7	**6.4**
Precipitation (mm)	66.8	68.8	48.3	68.2	72.0	114.7	91.5	65.2	79.4	98.8	63.7	60.5	**897.8**
Evapotranspiration Analysis (Sub-Area A)													
Heat Index	0.0	0.0	0.0	1.1	4.4	6.4	8.1	7.2	4.9	2.1	0.3	0.0	**34**
Unadjusted Potential Evapotranspiration (mm)	0.0	0.0	0.0	25.0	65.2	84.5	99.5	92.1	70.8	38.9	9.4	0.0	**485**
Potential Evapotranspiration Adjusting Factor for Latitude	0.80	0.81	1.03	1.13	1.27	1.29	1.31	1.21	1.05	0.94	0.80	0.77	
Adjusted Potential Evapotranspiration (mm)	0	0	0	28	83	109	130	111	74	37	8	0	**580**
PET (Malstrom, 1969) (mm/month)	0	0	0	28	83	109	130	111	74	37	8	0	**580**
Precipitation - PET (mm)	67	69	48	40	-11	5	-39	-46	5	62	56	60	**318**
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	**-259**
Storage (S)	75	75	75	75	65	70	42	23	24	55	75	75	
Change in Storage	0	0	0	0	-10	5	-28	-19.0	2	31	20	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**82**	**109**	**120**	**84**	**74**	**37**	**8**	**0**	**542**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	1	0	0	4	31	36	60	**356**
Potential Infiltration (I)	53	55	39	32	0	0	0	0	3	25	29	48	**285**
Potential Direct Surface Water Runoff (R)	**13**	**14**	**10**	**8**	**0**	**0**	**0**	**0**	**1**	**6**	**7**	**12**	**71**
Evapotranspiration (m^3)	0	0	0	14,125	41,395	54,891	60,079	42,359	37,269	18,454	3,790	0	272,363
Runoff (m^3)	6,714	6,920	4,851	4,030	0	58	0	0	364	3,113	3,663	6,080	35,793
Infiltration (m^3)	26,856	27,681	19,404	16,119	0	232	0	0	1,458	12,451	14,654	24,319	143,173

Evapotranspiration Analysis (Sub-Area B)													
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	
Storage (S)	250	250	250	250	239	244	209	174	178	228	250	250	
Change in Storage	0	0	0	0	-11	5	-35	-35	4	50	22	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**83**	**109**	**127**	**100**	**74**	**37**	**8**	**0**	**565**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	0	0	0	2	12	34	60	**332**
Potential Infiltration (I)	47	48	34	28	0	0	0	0	1	8	24	42	**233**
Potential Direct Surface Water Runoff (R)	**20**	**21**	**14**	**12**	**0**	**0**	**0**	**0**	**0**	**4**	**10**	**18**	**100**
Evapotranspiration (m^3)	0	0	0	5622	16586	21850	25314	20088	14835	7346	1508	0	113149
Runoff (m^3)	4009	4132	2896	2406	0	11	0	0	93	715	2058	3630	19951
Infiltration (m^3)	9354	9641	6758	5614	0	25	0	0	218	1669	4803	8470	46552

Water Balance Total	**Inputs**	**Outputs**
Precipitation (mm)	897.8	
Soil Storage (mm)		0.0
Evapotranspiration+Evaporation (mm)		549
Infiltration (mm)		270
Runoff (mm)		79
Total	**897.8**	**897.8**

Water Balance T	**Inputs**	**Outputs**
Precipitation (m^3)	630980.9	
Soil Storage (m^3)		0.00
Evapotranspiration+Evaporation (m		385512
Infiltration (m^3)		189725
Runoff (m^3)		55744
Total	**630980.9**	**630980.9**

Post-Development Monthly Water Balance Analysis - Thornthwaite and Mather model
Manors of Belfountain, Caledon, ON
Hydrogeological Investigation

Total Site Area (ha)	70.28				
Land Description Factors	**Area A (Residential)**	**Sub-Area B (Open Space)**	**Sub-Area C (Wooded)**	**Sub-Area D (Impervious)**	
Topography	0.30	0.30	0.10	NA	
Soils	0.40	0.40	0.40	NA	
Cover	0.05	0.15	0.20	NA	
Sum (Infiltration Factor)	0.75	0.85	0.70	0.00	
Soil Moisture Capacity (mm)	50	100	250	NA	
Site Area	30.54	7.90	22.28	9.56	
Percentage of Total Site Area	43%	11%	32%	14%	**100%**

	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**
Climate Data (Data from Orangeville MOE Climate Station, Ontario via Environment Canada Website - 2010 to 2015													
Average Daily Temperature (°C)	-8.3	-8.5	-1.8	5.3	13.3	17.0	19.9	18.5	14.3	8.1	2.1	-2.7	**6.4**
Precipitation (mm)	66.8	68.8	48.3	68.2	72.0	114.7	91.5	65.2	79.4	98.8	63.7	60.5	**897.8**
Evapotranspiration Analysis (Sub-Area A)													
Heat Index	0.0	0.0	0.0	1.1	4.4	6.4	8.1	7.2	4.9	2.1	0.3	0.0	**34**
Unadjusted Potential Evapotranspiration (mm)	0.0	0.0	0.0	25.0	65.2	84.5	99.5	92.1	70.8	38.9	9.4	0.0	**485**
Potential Evapotranspiration Adjusting Factor for Latitude	0.80	0.81	1.03	1.13	1.27	1.29	1.31	1.21	1.05	0.94	0.80	0.77	
Adjusted Potential Evapotranspiration (mm)	0	0	0	28	83	109	130	111	74	37	8	0	**580**
PET (Malstrom, 1969) (mm/month)	0	0	0	28	83	109	130	111	74	37	8	0	**580**
Precipitation - PET (mm)	67	69	48	40	-11	5	-39	-46	5	62	56	60	**318**
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	**-259**
Storage (S)	50	50	50	50	40	45	21	8	9	32	50	50	
Change in Storage	0	0	0	0	-10	5	-24	-12.4	1	22	18	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**82**	**109**	**116**	**78**	**74**	**37**	**8**	**0**	**531**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	1	0	0	4	40	38	60	**367**
Potential Infiltration (I)	50	52	36	30	0	1	0	0	3	30	28	45	**275**
Potential Direct Surface Water Runoff (R)	**17**	**17**	**12**	**10**	**0**	**0**	**0**	**0**	**1**	**10**	**9**	**15**	**92**
Evapotranspiration (m^3)	0	0	0	8,581	25,037	33,348	35,289	23,705	22,642	11,211	2,302	0	162,115
Runoff (m^3)	5,099	5,255	3,684	3,060	0	64	0	0	332	3,022	2,886	4,617	28,019
Infiltration (m^3)	15,296	15,766	11,052	9,181	0	192	0	0	996	9,066	8,658	13,851	84,057
Evapotranspiration Analysis (Sub-Area B)													
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	
Storage (S)	100	100	100	100	89	95	64	41	43	80	100	100	
Change in Storage	0	0	0	0	-11	5	-30	-24	2	37	20	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**83**	**109**	**122**	**89**	**74**	**37**	**8**	**0**	**549**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	0	0	0	3	25	36	60	**349**
Potential Infiltration (I)	57	59	41	34	0	0	0	0	3	21	30	51	**297**
Potential Direct Surface Water Runoff (R)	**10**	**10**	**7**	**6**	**0**	**0**	**0**	**0**	**0**	**4**	**5**	**9**	**52**
Evapotranspiration (m^3)	0	0	0	2220	6520	8626	9622	7022	5857	2900	596	0	43363
Runoff (m^3)	791	816	572	475	0	5	0	0	36	300	423	717	4135
Infiltration (m^3)	4484	4622	3240	2691	0	29	0	0	206	1698	2397	4061	23430
Evapotranspiration Analysis (Sub-Area C)													
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	
Storage (S)	250	250	250	250	239	244	209	174	178	228	250	250	
Change in Storage	0	0	0	0	-11	5	-35	-35	4	50	22	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**83**	**109**	**127**	**100**	**74**	**37**	**8**	**0**	**565**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	0	0	0	2	12	34	60	**332**
Potential Infiltration (I)	47	48	34	28	0	0	0	0	1	8	24	42	**233**
Potential Direct Surface Water Runoff (R)	**20**	**21**	**14**	**12**	**0**	**0**	**0**	**0**	**0**	**4**	**10**	**18**	**100**
Evapotranspiration (m^3)	0	0	0	6260	18467	24328	28185	22367	16518	8179	1680	0	125985
Runoff (m^3)	4464	4601	3225	2679	0	12	0	0	104	796	2292	4042	22214
Infiltration (m^3)	10415	10735	7525	6251	0	28	0	0	243	1858	5347	9431	51833
Evaporation Analysis (Sub-Area D - Impervious)													
Evaporation Facotr (assume 20% of precipitation is evaporated from Impervious surfaces)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Actual Evaporation (mm)	**13**	**14**	**10**	**14**	**14**	**23**	**18**	**13**	**16**	**20**	**13**	**12**	**180**
Recharge/Runoff Analysis													
Potential Infiltration (I)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Potential Direct Surface Water Runoff (R)	**53**	**55**	**39**	**55**	**58**	**92**	**73**	**52**	**64**	**79**	**51**	**48**	**718**
Evaporation (m^3)	1277	1316	923	1304	1377	2192	1750	1247	1518	1888	1218	1156	17166
Runoff (m^3)	5107	5264	3690	5214	5508	8768	6999	4988	6073	7554	4873	4625	68665
Infiltration (m^3)	0	0	0	0	0	0	0	0	0	0	0	0	0

Water Balance Total	**Inputs**	**Outputs**
Precipitation (mm)	897.8	
Soil Storage (mm)		0.00
Evapotranspiration+Evaporation (mm)		496
Infiltration (mm)		227
Runoff (mm)		175
Total	**897.8**	**897.8**

Water Balance T	**Inputs**	**Outputs**
Precipitation (m^3	630980.9	
Soil Storage (m^3)		0.00
Evapotranspiration+Evaporation (m^		348628.8
Infiltration (m^3)		159320
Runoff (m^3)		123032
Total	**630980.9**	**630980.9**

Post-Development with Mitigation Monthly Water Balance Analysis - Thornthwaite and Mather model
Manors of Belfountain, Caledon, ON
Hydrogeological Investigation

Total Site Area (ha) 70.19

Land Description Factors	Area A (Residential)	Sub-Area B (Open Space)	Sub-Area C (Wooded)	Sub-Area D (Re-Directed Impervious)	Sub-Area E (Impervious)
Topography	0.30	0.30	0.10	NA	NA
Soils	0.40	0.40	0.40	NA	NA
Cover	0.05	0.15	0.20	NA	NA
Sum (Infiltration Factor)	0.75	0.85	0.70	1.00	0.00
Soil Moisture Capacity (mm)	50	100	250	NA	NA
Site Area	30.54	7.90	22.19	6.94	2.62
Percentage of Total Site Area	44%	11%	32%	10%	4%

100%

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Climate Data (Data from Orangeville MOE Climate Station, Ontario via Environment Canada Website - 2010 to 2015													
Average Daily Temperature (°C)	-8.3	-8.5	-1.8	5.3	13.3	17.0	19.9	18.5	14.3	8.1	2.1	-2.7	**6.4**
Precipitation (mm)	66.8	68.8	48.3	68.2	72.0	114.7	91.5	65.2	79.4	98.8	63.7	60.5	**897.8**
Evapotranspiration Analysis (Sub-Area A)													
Heat Index	0.0	0.0	0.0	1.1	4.4	6.4	8.1	7.2	4.9	2.1	0.3	0.0	**34**
Unadjusted Potential Evapotranspiration (mm)	0.0	0.0	0.0	25.0	65.2	84.5	99.5	92.1	70.8	38.9	9.4	0.0	**485**
Potential Evapotranspiration Adjusting Factor for Latitude	0.80	0.81	1.03	1.13	1.27	1.29	1.31	1.21	1.05	0.94	0.80	0.77	
Adjusted Potential Evapotranspiration (mm)	0	0	0	28	83	109	130	111	74	37	8	0	**580**
PET (Malstrom, 1969) (mm/month)	0	0	0	28	83	109	130	111	74	37	8	0	**580**
Precipitation - PET (mm)	67	69	48	40	-11	5	-39	-46	5	62	56	60	**318**
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	**-259**
Storage (S)	50	50	50	50	40	45	21	8	9	32	50	50	
Change in Storage	0	0	0	0	-10	5	-24	-12.4	1	22	18	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**82**	**109**	**116**	**78**	**74**	**37**	**8**	**0**	**531**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	1	0	0	4	40	38	60	**367**
Potential Infiltration (I)	50	52	36	30	0	1	0	0	3	30	28	45	**275**
Potential Direct Surface Water Runoff (R)	**17**	**17**	**12**	**10**	**0**	**0**	**0**	**0**	**1**	**10**	**9**	**15**	**92**
Evapotranspiration (m^3)	0	0	0	8,581	25,037	33,348	35,289	23,705	22,642	11,211	2,302	0	162,115
Runoff (m^3)	5,099	5,255	3,684	3,060	0	64	0	0	332	3,022	2,886	4,617	28,019
Infiltration (m^3)	15,296	15,766	11,052	9,181	0	192	0	0	996	9,066	8,658	13,851	84,057
Evapotranspiration Analysis (Sub-Area B)													
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	
Storage (S)	100	100	100	100	89	95	64	41	43	80	100	100	
Change in Storage	0	0	0	0	-11	5	-30	-24	2	37	20	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**83**	**109**	**122**	**89**	**74**	**37**	**8**	**0**	**549**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	0	0	0	3	25	36	60	**349**
Potential Infiltration (I)	57	59	41	34	0	0	0	0	3	21	30	51	**297**
Potential Direct Surface Water Runoff (R)	**10**	**10**	**7**	**6**	**0**	**0**	**0**	**0**	**0**	**4**	**5**	**9**	**52**
Evapotranspiration (m^3)	0	0	0	2220	6520	8626	9622	7022	5857	2900	596	0	43363
Runoff (m^3)	791	816	572	475	0	5	0	0	36	300	423	717	4135
Infiltration (m^3)	4484	4622	3240	2691	0	29	0	0	206	1698	2397	4061	23430
Evapotranspiration Analysis (Sub-Area C)													
Accumulated Potential Water Loss (APWL)	0	0	0	0	-11	-6	-44	-90	-85	-23	0	0	
Storage (S)	250	250	250	250	239	244	209	174	178	228	250	250	
Change in Storage	0	0	0	0	-11	5	-35	-35	4	50	22	0	**0**
Actual Evapotranspiration (mm)	**0**	**0**	**0**	**28**	**83**	**109**	**127**	**100**	**74**	**37**	**8**	**0**	**565**
Recharge/Runoff Analysis													
Water Surplus (mm)	67	69	48	40	0	0	0	0	2	12	34	60	**332**
Potential Infiltration (I)	47	48	34	28	0	0	0	0	1	8	24	42	**233**
Potential Direct Surface Water Runoff (R)	**20**	**21**	**14**	**12**	**0**	**0**	**0**	**0**	**0**	**4**	**10**	**18**	**100**
Evapotranspiration (m^3)	0	0	0	6235	18393	24230	28071	22277	16451	8146	1673	0	125476
Runoff (m^3)	4446	4582	3212	2668	0	12	0	0	104	793	2282	4025	22125
Infiltration (m^3)	10373	10691	7495	6226	0	28	0	0	242	1851	5326	9393	51624
Evaporation Analysis (Sub-Area D - Re-Directed Impervious)													
Evaporation Facotr (assume 20% of precipitation is evaporated from Impervious surfaces)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Actual Evaporation (mm)	**13**	**14**	**10**	**14**	**14**	**23**	**18**	**13**	**16**	**20**	**13**	**12**	**180**
Recharge/Runoff Analysis													
Potential Infiltration (I)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Potential Direct Surface Water Runoff (R)	**53**	**55**	**39**	**55**	**58**	**92**	**73**	**52**	**64**	**79**	**51**	**48**	**718**
Evaporation (m^3)	927	955	670	946	1000	1591	1270	905	1102	1371	884	839	12462
Runoff (m^3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Infiltration (m^3)	3708	3821	2679	3785	3999	6365	5081	3621	4408	5484	3538	3357	49846
Evaporation Analysis (Sub-Area E - Impervious)													
Evaporation Facotr (assume 20% of precipitation is evaporated from Impervious surfaces)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Actual Evaporation (mm)	**13**	**14**	**10**	**14**	**14**	**23**	**18**	**13**	**16**	**20**	**13**	**12**	**180**
Recharge/Runoff Analysis													
Potential Infiltration (I)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Potential Direct Surface Water Runoff (R)	**53**	**55**	**39**	**55**	**58**	**92**	**73**	**52**	**64**	**79**	**51**	**48**	**718**
Evaporation (m^3)	350	361	253	357	377	601	480	342	416	518	334	317	4705
Runoff (m^3)	1400	1443	1011	1429	1510	2403	1918	1367	1664	2070	1336	1267	18818
Infiltration (m^3)	0	0	0	0	0	0	0	0	0	0	0	0	0

Water Balance Total	Inputs	Outputs
Precipitation (mm)	897.8	
Soil Storage (mm)		0.00
Evapotranspiration+Evaporation (mm)		489
Infiltration (mm)		227
Runoff (mm)		148
Total	**897.8**	**864.3**

Water Balance T	Inputs	Outputs
Precipitation (m^	630172.8	
Soil Storage (m^3)		0.00
Evapotranspiration+Evaporation (m		348119.8
Infiltration (m^3)		208957
Runoff (m^3)		73096
Total	**630172.8**	**630172.8**

Water Budget Summary
Water Balance/ Water Budget Assessment

Characteristic	Site						
	Pre-Development	Post-Development	Change (Pre- to Post-) (m3/yr)	Change (Pre- to Post-) (%)	Post-Develment with Mitigation	Change (Pre- to Post-with Mitigation) (m3/yr)	Change (Pre- to Post- with Mitigation) (%)
Input (mm)							
Precipitation (m^3/yr)	630981	630981	0	0.0%	630981	0	0.0%
Run-On (m^3/yr)	0	0	0	0.0%		0	0.0%
Other Inputs (m^3/yr) - soil moisture	0	0	0	0.0%		0	0.0%
Total Inputs (m^3/yr)	**630981**	**630981**	0	0.0%	**630981**	0	0.0%
Outputs (Volumes)							
Precipitation Surplus (m^3/yr)			0			0	
Net Surplus (m^3/yr)			0			0	
Evapotranspiration (m^3/yr)	385512	348629	-36883	**-9.6%**	348281.4	-37230	-9.7%
Infiltration (m^3/yr)	189725	159320	-30405	**-16.0%**	208957	19232	**10.1%**
Total Infiltration (m^3/yr)	189725	159320	-30405	**-16.0%**	208957	19232	**10.1%**
Runoff Pervious Areas (m^3/yr)			0			0	
Runoff Impervious Areas (m^3/yr)			0			0	
Total Runoff (m^3/yr)	55744	123032	67288	**120.7%**	73743	17999	32.3%
Total Outputs (m^3/yr)	**630981**	**630981**	0	0.0%	**630981**	0	0.0%

COLE

External Drainage
Ponding Area Volumes

Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Drainage Area ID	Depression Area Name	Cut Factor	Fill Factor	2D Area (m2)	2D Area (ha)	Cut (m3)	Fill (m3)	Net (m3)
1-1	1-1 VOL	1	1	4,044	0.404	2,028	0	2,028
	1-2 VOL	1	1	982	0.098	685	0	685
	1-3 VOL	1	1	9,712	0.971	9,607	0.11	9,607
	1-4 VOL	1	1	132	0.013	18	0	18
	1-5 VOL	1	1	549	0.055	249	0	249
	1-6 VOL	1	1	611	0.061	183	0	183
	1-7 VOL	1	1	1,328	0.133	184	0	184
	1-8 VOL	1	1	282	0.028	85	0	85
	1-9 VOL	1	1	862	0.086	269	0	269
	1-15 VOL	1	1	232	0.023	26	0	26
						TOTAL NET VOLUME :		**13,333**
1-2	1-10 VOL	1	1	6,923	0.692	3,792	0	3,792
	1-11 VOL	1	1	661	0.066	54	0	54
	1-12 VOL	1	1	2,455	0.245	1,248	0	1,248
	1-13 VOL	1	1	274	0.027	154	0	154
	1-14 VOL	1	1	1,309	0.131	826	0	826
						TOTAL NET VOLUME :		**6,074**
3-1	3-1 VOL	1	1	1,446	0.145	769	0	769
	3-2 VOL	1	1	934	0.093	202	0	202
	3-3 VOL	1	1	354	0.035	31	0	31
	3-4 VOL	1	1	138	0.014	12	0	12
	3-5 VOL	1	1	712	0.071	344	0	344
	3-6 VOL	1	1	464	0.046	201	0	201
	3-7 VOL	1	1	251	0.025	40	0	40
						TOTAL NET VOLUME :		**1,599**
3-2	3-9 VOL	1	1	143	0.014	9	0	9
	3-10 VOL	1	1	9,933	0.993	10,268	0	10,268
	3-15 VOL	1	1	437	0.044	141	0	141
	3-16 VOL	1	1	1,532	0.153	413	1.08	412
	3-17 VOL	1	1	551	0.055	103	0	103
	3-18 VOL	1	1	1,267	0.127	713	0	713
	3-20 VOL	1	1	1,783	0.178	443	0	443
	3-21 VOL	1	1	257	0.026	54	0	54
						TOTAL NET VOLUME :		**12,144**
3-3	3-8 VOL	1	1	1,016	0.102	904	0	904
	3-11 VOL	1	1	4,705	0.471	7,577	0	7,577
						TOTAL NET VOLUME :		**8,480**
3-4	3-19 VOL	1	1	855	0.085	195	0	**195**
3-5	3-12 VOL	1	1	5,781	0.578	1,494	0	1,494
	3-13 VOL	1	1	6,539	0.654	8,636	0	8,636
	3-14 VOL	1	1	3,447	0.345	177	0	177
	3-22 VOL	1	1	792	0.079	525	0	525
	3-23 VOL	1	1	784	0.078	332	0	332
						TOTAL NET VOLUME :		**11,164**

COLE

External Drainage
Ponding Area Volumes

Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Drainage Area ID	Depression Area Name	Cut Factor	Fill Factor	2D Area (m2)	2D Area (ha)	Cut (m3)	Fill (m3)	Net (m3)
3-6	3-27 VOL	1	1	1,300	0.130	362	0	362
	3-28 VOL	1	1	18,443	1.844	7,674	0	7,674
	3-29 VOL	1	1	940	0.094	223	0	223
	3-30 VOL	1	1	2,097	0.210	721	0	721
	3-33 VOL	1	1	640	0.064	300	0	300
	3-34 VOL	1	1	1,445	0.145	809	0	809
	3-35 VOL	1	1	528	0.053	55	0	55
	3-38 VOL	1	1	831	0.083	548	0	548
						TOTAL NET VOLUME :		**10,691**
3-7	3-25 VOL	1	1	2,024	0.202	484	0	484
	3-26 VOL	1	1	10,860	1.086	7,307	0	7,307
	3-31 VOL	1	1	4,193	0.419	854	0	854
						TOTAL NET VOLUME :		**8,645**
3-8	3-24 VOL	1	1	76,393	7.639	19,978	0	19,978
	3-32 VOL	1	1	8,936	0.894	1,894	0	1,894
	3-44 VOL	1	1	1,010	0.101	246	0	246
	3-61 VOL	1	1	426	0.043	103	0	103
	3-62 VOL	1	1	109	0.011	10	0	10
	3-63 VOL	1	1	713	0.071	578	0	578
	3-64 VOL	1	1	1,788	0.179	1,624	0	1,624
						TOTAL NET VOLUME :		**24,433**
3-9	3-59 VOL	1	1	4,022	0.402	277	0	277
	3-60 VOL	1	1	5,627	0.563	1,597	0	1,597
						TOTAL NET VOLUME :		**1,875**
3-10	3-36 VOL	1	1	11,798	1.180	10,263	0	10,263
	3-37 VOL	1	1	6,243	0.624	1,896	0	1,896
						TOTAL NET VOLUME :		**12,160**
3-11	3-39 VOL	1	1	1,412	0.141	366	0	366
	3-40 VOL	1	1	14,235	1.423	2,010	0	2,010
	3-41 VOL	1	1	3,134	0.313	839	0	839
	3-42 VOL	1	1	1,359	0.136	379	0	379
	3-43 VOL	1	1	3,747	0.375	1,873	0	1,873
	3-46 VOL	1	1	222	0.022	19	0	19
						TOTAL NET VOLUME :		**5,486**
3-12	3-45 VOL	1	1	992	0.099	351	0	351
	3-50 VOL	1	1	942	0.094	155	0	155
	3-51 VOL	1	1	317	0.032	18	0	18
	3-52 VOL	1	1	1,401	0.140	173	0	173
	3-53 VOL	1	1	4,669	0.467	2,080	0	2,080
	3-54 VOL	1	1	788	0.079	208	0	208
	3-55 VOL	1	1	1,574	0.157	105	0	105
	3-56 VOL	1	1	713	0.071	147	0	147
						TOTAL NET VOLUME :		**3,237**
3-13	3-57 VOL	1	1	1,996	0.200	1,708	0	1,708
	3-58 VOL	1	1	5,550	0.555	1,136	0	1,136
						TOTAL NET VOLUME :		**2,844**
3-14	3-47 VOL	1	1	755	0.075	103	0	103
	3-48 VOL	1	1	4,550	0.455	6,328	0	6,328
						TOTAL NET VOLUME :		**6,431**
3-15	3-49 VOL	1	1	15,385	1.539	12,743	0	**12,743**

COLE

External Drainage
Ponding Area Volumes

Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Drainage Area ID	Depression Area Name	Cut Factor	Fill Factor	2D Area (m2)	2D Area (ha)	Cut (m3)	Fill (m3)	Net (m3)
4-1	4-49 VOL	1	1	73	0.007	16	0	16
	4-50 VOL	1	1	1,239	0.124	159	0	159
							TOTAL NET VOLUME :	**175**
4-2	4-55 VOL	1	1	5,573	0.557	4,722	0	**4,722**
4-3	4-22 VOL	1	1	974	0.097	848	0	848
	4-23 VOL	1	1	1,036	0.104	952	0	952
	4-44 VOL	1	1	146	0.015	26	0	26
	4-45 VOL	1	1	8,751	0.875	4,262	0	4,262
							TOTAL NET VOLUME :	**6,088**
4-4	4-31 VOL	1	1	682	0.068	42	0	42
	4-37 VOL	1	1	1,889	0.189	1,742	0	1,742
	4-48 VOL	1	1	322	0.032	123	0	123
							TOTAL NET VOLUME :	**1,906**
4-5	4-47 VOL	1	1	2,129	0.213	1,477	0	**1,477**
4-6	4-27 VOL	1	1	1,558	0.156	820	0	820
	4-28 VOL	1	1	853	0.085	293	0	293
	4-29 VOL	1	1	658	0.066	274	0	274
	4-30 VOL	1	1	1,459	0.146	488	0	488
	4-32 VOL	1	1	1,142	0.114	768	0	768
	4-33 VOL	1	1	6,249	0.625	4,656	0	4,656
							TOTAL NET VOLUME :	**7,299**
4-7	4-21 VOL	1	1	1,119	0.112	18	0	**18**
4-8	4-12 VOL	1	1	1,209	0.121	742	0	742
	4-13 VOL	1	1	4,282	0.428	3,691	0	3,691
	4-19 VOL	1	1	790	0.079	475	0	475
	4-20 VOL	1	1	2,945	0.294	3,407	0	3,407
	4-24 VOL	1	1	715	0.071	251	0	251
	4-25 VOL	1	1	530	0.053	76	0	76
	4-26 VOL	1	1	1,470	0.147	1,542	0	1,542
	4-34 VOL	1	1	3,929	0.393	3,720	0	3,720
	4-35 VOL	1	1	1,866	0.187	2,094	0	2,094
	4-36 VOL	1	1	1,450	0.145	600	0	600
	4-42 VOL	1	1	418	0.042	51	0	51
	4-46 VOL	1	1	843	0.084	223	0	223
	4-59 VOL	1	1	883	0.088	646	0	646
	4-61 VOL	1	1	684	0.068	97	0	97
							TOTAL NET VOLUME :	**17,615**
4-9	4-39 VOL	1	1	9,705	0.971	11,152	0	11,152
	4-40 VOL	1	1	313	0.031	41	0	41
	4-41 VOL	1	1	291	0.029	32	0	32
	4-43 VOL	1	1	884	0.088	222	0	222
							TOTAL NET VOLUME :	**11,447**
4-10	4-6 VOL	1	1	1,937	0.194	85	0	85
	4-58 VOL	1	1	898	0.090	108	0	108
							TOTAL NET VOLUME :	**192**
4-11	4-8 VOL	1	1	2,230	0.223	904	0	904
	4-9 VOL	1	1	3,189	0.319	3,087	0	3,087
	4-10 VOL	1	1	6,992	0.699	9,551	0	9,551
	4-11 VOL	1	1	845	0.084	472	0	472
							TOTAL NET VOLUME :	**14,015**

COLE

External Drainage
Ponding Area Volumes

Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Drainage Area ID	Depression Area Name	Cut Factor	Fill Factor	2D Area (m2)	2D Area (ha)	Cut (m3)	Fill (m3)	Net (m3)
4-12	4-7 VOL	1	1	12,357	1.236	9,303	0	**9,303**
4-13	4-4 VOL	1	1	9,616	0.962	1,064	0	1,064
	4-5 VOL	1	1	3,282	0.328	293	0	293
	4-14 VOL	1	1	776	0.078	73	0	73
	4-15 VOL	1	1	862	0.086	177	0	177
	4-16 VOL	1	1	2,980	0.298	1,601	0	1,601
	4-38 VOL	1	1	10,563	1.056	919	0	919
	4-60 VOL	1	1	934	0.093	238	0	238
						TOTAL NET VOLUME :		**4,363**
4-14	4-17 VOL	1	1	1,949	0.195	1,179	0	1,179
	4-18 VOL	1	1	1,004	0.100	546	0	546
						TOTAL NET VOLUME :		**1,725**
4-15	4-3 VOL	1	1	2,664	0.266	1,154	0	1,154
	4-56 VOL	1	1	213	0.021	42	0	42
	4-57 VOL	1	1	1,211	0.121	329	0	329
						TOTAL NET VOLUME :		**1,524**
4-16	4-1 VOL	1	1	5,986	0.599	519	0	519
	4-2 VOL	1	1	147,647	14.765	14,869	0	14,869
	4-52 VOL	1	1	701	0.070	197	0	197
	4-53 VOL	1	1	1,653	0.165	403	0	403
						TOTAL NET VOLUME :		**15,988**
4-17	4-51 VOL	1	1	3,215	0.322	804	0	804
	4-54 VOL	1	1	3,719	0.372	1,418	0	1,418
						TOTAL NET VOLUME :		**2,222**
				TOTAL	**59.507**	**241,614**	**1.19**	**241,613**

COLE

Prepared by: Jessica Lysecki, P.Eng.

Visual OTTHYMO
NASHYD Input Parameters

Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Drainage Area ID	Area (m^2)	Area (ha)	Cpre	Hydrologic Soil Group	Landuse	CN	L (m)	Upper Elev. (m)	Lower Elev. (m)	Elev. Change (m)	Sw (%)	Tc Airport (min)	Tc BW (min)	TP (hr)	DT (min)	DWF (cms)	Ponding Area Volume (m^3)	IA (mm)	N	Rain (mm/hr)
1-1	92658	9.26	0.20	A	forest, poor cover	45	281.6	422.78	410.91	11.87	4.22	30.63	9.64	0.34	5	0	13333.1	143.9	3	0-Without Rainfall
1-2	65264	6.53	0.20	A	forest, poor cover	45	512.5	421.00	403.73	17.27	3.37	44.48	18.99	0.49	5	0	6073.8	93.1	3	0-Without Rainfall
3-1	119397	11.94	0.20	A	forest, poor cover	45	671.0	423.39	402.90	20.49	3.05	52.58	23.88	0.58	5	0	1598.5	13.4	3	0-Without Rainfall
3-2	67490	6.75	0.20	A	forest, poor cover	45	441.4	423.76	410.97	12.79	2.90	43.39	16.80	0.48	5	0	12143.5	179.9	3	0-Without Rainfall
3-3	25239	2.52	0.20	A	forest, poor cover	45	287.2	420.00	410.00	10.00	3.48	32.94	11.63	0.37	5	0	8480.4	336.0	3	0-Without Rainfall
3-4	2523	0.25	0.20	A	forest, poor cover	45	25.9	422.00	420.45	1.55	5.99	8.27	1.18	0.09	5	0	194.9	77.3	3	0-Without Rainfall
3-5	70850	7.09	0.20	A	forest, poor cover	45	425.8	427.05	414.67	12.38	2.91	42.57	16.12	0.47	5	0	11164.2	157.6	3	0-Without Rainfall
3-6	96719	9.67	0.20	A	forest, poor cover	45	472.6	429.46	415.38	14.08	2.98	44.49	17.26	0.49	5	0	10691.2	110.5	3	0-Without Rainfall
3-7	69910	6.99	0.20	A	forest, poor cover	45	273.8	429.07	417.08	11.99	4.38	29.82	9.56	0.33	5	0	8644.6	123.7	3	0-Without Rainfall
3-8	209369	20.94	0.20	D	forest, poor cover	82	672.7	436.13	422.23	13.90	2.07	59.89	24.47	0.67	5	0	24433.2	116.7	3	0-Without Rainfall
3-9	35029	3.50	0.20	A	forest, poor cover	45	280.2	437.57	428.84	8.73	3.12	33.75	11.22	0.38	5	0	1874.6	53.5	3	0-Without Rainfall
3-10	70960	7.10	0.20	A	forest, poor cover	45	362.6	433.33	418.40	14.93	4.12	35.02	12.80	0.39	5	0	12159.5	171.4	3	0-Without Rainfall
3-11	79721	7.97	0.20	A	forest, poor cover	45	365.4	434.00	421.00	13.00	3.56	36.89	13.13	0.41	5	0	5486.1	68.8	3	0-Without Rainfall
3-12	87272	8.73	0.20	A	pasture, poor condition	38	528.1	435.14	424.62	10.52	1.99	53.71	21.12	0.60	5	0	3236.5	37.1	3	0-Without Rainfall
3-13	43222	4.32	0.20	A	forest, poor cover	45	268.6	434.07	425.44	8.63	3.21	32.71	10.47	0.36	5	0	2844.2	65.8	3	0-Without Rainfall
3-14	16690	1.67	0.20	A	forest, poor cover	45	189.4	435.80	430.94	4.86	2.57	29.59	8.50	0.33	5	0	6431.0	385.3	3	0-Without Rainfall
3-15	39506	3.95	0.20	A	pasture, poor condition	38	147.3	435.56	428.98	6.58	4.47	21.74	5.43	0.24	5	0	12743.1	322.6	3	0-Without Rainfall
4-1	91286	9.13	0.20	A	cultivated land	62	612.3	418.66	405.30	13.36	2.18	56.12	23.94	0.62	5	0	175.4	1.9	3	0-Without Rainfall
4-2	26714	2.67	0.20	A	forest, poor cover	45	247.4	421.81	409.99	11.82	4.78	27.54	9.35	0.31	5	0	4722.2	176.8	3	0-Without Rainfall
4-3	83509	8.35	0.20	A	forest, poor cover	45	180.9	424.86	413.16	11.70	6.47	21.32	5.74	0.24	5	0	6088.4	72.9	3	0-Without Rainfall
4-4	19077	1.91	0.20	A	forest, poor cover	45	207.4	436.26	422.21	14.05	6.78	22.47	7.56	0.25	5	0	1906.1	99.9	3	0-Without Rainfall
4-5	12371	1.24	0.20	A	forest, poor cover	45	148.3	430.90	419.71	11.19	7.55	18.34	5.52	0.20	5	0	1476.5	119.4	3	0-Without Rainfall
4-6	54605	5.46	0.20	A	open spaces/lawns, fair condition	62	332.2	436.19	426.94	9.25	2.78	38.14	13.02	0.42	5	0	7299.4	133.7	3	0-Without Rainfall
4-7	14026	1.40	0.20	A	forest, poor cover	45	187.1	425.53	416.20	9.33	4.98	23.62	7.48	0.26	5	0	17.9	1.3	3	0-Without Rainfall
4-8	188539	18.85	0.20	A	open spaces/lawns, fair condition	62	587.1	440.13	417.00	23.13	3.94	45.22	18.97	0.50	5	0	17615.4	93.4	3	0-Without Rainfall
4-9	65815	6.58	0.20	A	forest, poor cover	45	386.9	434.81	416.51	18.30	4.73	34.56	13.39	0.38	5	0	11447.0	173.9	3	0-Without Rainfall
4-10	41713	4.17	0.20	A	forest, poor cover	45	364.7	430.51	418.72	11.79	3.23	38.05	14.25	0.42	5	0	192.3	4.6	3	0-Without Rainfall
4-11	58083	5.81	0.20	A	forest, poor cover	45	289.0	439.39	429.24	10.15	3.51	32.95	10.74	0.37	5	0	14014.9	241.3	3	0-Without Rainfall
4-12	46224	4.62	0.20	A	pasture, poor condition	38	284.7	437.03	424.97	12.06	4.24	30.74	10.43	0.34	5	0	9303.3	201.3	3	0-Without Rainfall
4-13	194308	19.43	0.20	A	forest, poor cover	45	896.7	436.26	424.69	11.57	1.29	80.77	36.10	0.90	5	0	4363.1	22.5	3	0-Without Rainfall
4-14	16688	1.67	0.20	A	cultivated land	62	141.0	437.75	430.70	7.05	5.00	20.49	5.53	0.23	5	0	1724.7	103.3	3	0-Without Rainfall
4-15	31127	3.11	0.20	A	forest, good cover	30	279.8	437.86	426.86	11.00	3.93	31.23	10.82	0.35	5	0	1524.4	49.0	3	0-Without Rainfall
4-16	355508	35.55	0.20	A	forest, good cover	30	684.4	436.78	426.12	10.66	1.56	66.32	24.98	0.74	5	0	15987.7	45.0	3	0-Without Rainfall
4-17	42312	4.23	0.20	A	forest, poor cover	45	343.0	430.21	427.77	2.44	0.71	60.81	18.12	0.68	5	0	2222.0	52.5	3	0-Without Rainfall

COLE

Visual OTTHYMO
STANDHYD Input Parameters
Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Town of Caledon Standard Runoff Coefficients
Pervious (<4ha) 0.25
Impervious 0.90

Area Description	Area (ha)	Runoff Coefficient	TIMP Total Impervious Area	XIMP Impervious Area (Direct Connection)	LGI Overland Flow Length (Impervious)	SLPI Average Slope (Impervious)	DT Time Step Increment	DWF Dry Weather Flow (Base Flow)	LOSS Rainfall Loss Method	SLPP Average Slope (Pervious)	LGP Overland Flow Length (Pervious)	MNP Mannings Roughness Coefficient (Pervious)	DPSI Depression Storage (Pervious)	MNI Manning's Roughness Coefficient (Impervious)	Receiving OGS Unit	Receiver of Minor Flow	Receiver of Major Flow	Receiver of Emergency Flow
Shaws Creek Road (North)	0.62	0.65	0.62	0.62	64.4	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-4	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Shaws Creek Road (South)	0.73	0.65	0.62	0.62	69.8	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-4	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Lots 23-27 to DICB1	2.00	0.37	0.18	0.12	115.5	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-1	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Street 'A' to DICB2	0.21	0.37	0.18	0.18	37.4	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-1	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Lots 28-30 to DICB4	0.91	0.37	0.18	0.12	77.9	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-1	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Lots 1-4,14 to RLCB1	2.08	0.37	0.18	0.12	117.8	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-1	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Lots 30-32 to Culvert	1.27	0.37	0.18	0.12	92.0	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	n/a	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Street 'B' (North) to DICB3	0.09	0.37	0.18	0.18	24.5	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-1	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Street 'B' (Mid) to DICB5	0.23	0.37	0.18	0.18	39.2	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-5	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Lots 5,6,9-13 to RLCB3	2.87	0.37	0.18	0.12	138.2	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-5	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Lots 7,8 to RLCB2	0.76	0.37	0.18	0.12	71.0	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-5	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Street 'C' / 'B' to DICB5	0.65	0.37	0.18	0.18	65.8	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-5	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Street 'B' (South) to Culvert	0.67	0.37	0.18	0.18	66.8	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	n/a	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Block 81 Channel	0.43	0.37	0.18	0.18	53.5	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	n/a	Block 80 SWM Pond	Block 80 SWM Pond	Block 80 SWM Pond
Lots 34-41 to RLCB6	3.07	0.37	0.18	0.12	143.1	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-5	Block 80 SWM Pond	Block 80 SWM Pond	Block 81 Channel
Lots 15-21 to DICB16	3.55	0.37	0.18	0.12	153.9	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-2	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'C' / 'D' to DICB15	0.42	0.37	0.18	0.18	53.1	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-2	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond

COLE

Visual OTTHYMO
STANDHYD Input Parameters
Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Town of Caledon Standard Runoff Coefficients
Pervious (<4ha) 0.25
Impervious 0.90

Area Description	Area (ha)	Runoff Coefficient	TIMP Total Impervious Area	XIMP Impervious Area (Direct Connection)	LGI Overland Flow Length (Impervious)	SLPI Average Slope (Impervious)	DT Time Step Increment	DWF Dry Weather Flow (Base Flow)	LOSS Rainfall Loss Method	SLPP Average Slope (Pervious)	LGP Overland Flow Length (Pervious)	MNP Mannings Roughness Coefficient (Pervious)	DPSI Depression Storage (Pervious)	MNI Manning's Roughness Coefficient (Impervious)	Receiving OGS Unit	Receiver of Minor Flow	Receiver of Major Flow	Receiver of Emergency Flow
Street 'D' (West) to DICB7	0.28	0.37	0.18	0.18	43.2	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-2	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'D' (East) / Street 'E' (South) to DICB8	0.38	0.37	0.18	0.18	50.3	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-2	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'E' (Lot 45) to Culvert/DICB8	0.17	0.37	0.18	0.12	33.7	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-2	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Lots 45-47 to Culvert/DICB8	0.74	0.37	0.18	0.12	70.2	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-2	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Lots 48-51 to Culvert/DICB10	0.53	0.37	0.18	0.12	59.4	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'F' (Northwest) to DICB9	0.13	0.37	0.18	0.18	29.4	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'E' / 'F' (Northwest) to DICB10	0.46	0.37	0.18	0.18	55.4	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Lots 52-56 to Culvert/DICB13	2.33	0.37	0.18	0.12	124.6	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'E' / 'F' (Southeast) to DICB13	0.35	0.37	0.18	0.18	48.3	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Lots 69-72 to DICB14	1.66	0.37	0.18	0.12	105.2	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Lots 68-69 to DICB14	0.59	0.37	0.18	0.12	62.6	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'F' (East) to DICB13	0.11	0.37	0.18	0.18	27.2	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Lots 66-67 to DICB12	1.16	0.37	0.18	0.12	87.9	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'F' (Mid) to DICB11	0.24	0.37	0.18	0.18	40.3	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'F' / 'F' (North) to DICB11	0.13	0.37	0.18	0.18	29.3	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'F' / 'F' (South) to DICB12	0.12	0.37	0.18	0.18	28.0	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Street 'F' (Southwest) to DICB9	0.21	0.37	0.18	0.18	37.4	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond

COLE

Visual OTTHYMO
STANDHYD Input Parameters
Manors of Belfountain
File No. 2017-0701
Date: March, 2020

Town of Caledon Standard Runoff Coefficients
Pervious (<4ha) 0.25
Impervious 0.90

Area Description	Area (ha)	Runoff Coefficient	TIMP Total Impervious Area	XIMP Impervious Area (Direct Connection)	LGI Overland Flow Length (Impervious)	SLPI Average Slope (Impervious)	DT Time Step Increment	DWF Dry Weather Flow (Base Flow)	LOSS Rainfall Loss Method	SLPP Average Slope (Pervious)	LGP Overland Flow Length (Pervious)	MNP Mannings Roughness Coefficient (Pervious)	DPSI Depression Storage (Pervious)	MNI Manning's Roughness Coefficient (Impervious)	Receiving OGS Unit	Receiver of Minor Flow	Receiver of Major Flow	Receiver of Emergency Flow
Street 'F' (Southeast) to DICB10	0.20	0.37	0.18	0.18	36.2	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-3	Block 79 SWM Pond	Block 79 SWM Pond	Block 79 SWM Pond
Lots 42-44 to RLCB4	1.24	0.37	0.18	0.12	90.9	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-1	Block 80 SWM Pond	Block 80 SWM Pond	Block 79 SWM Pond
Lots 57-65 to RLCB5	3.36	0.37	0.18	0.12	149.7	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	OGS-1	Block 80 SWM Pond	Block 80 SWM Pond	Block 79 SWM Pond
Block 80 SWM Pond	1.00	0.58	0.50	0.50	81.6	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	n/a	Block 80 SWM Pond	Block 80 SWM Pond	Shaws Creek Road
Block 79 SWM Pond	4.20	0.58	0.50	0.50	167.3	1.0%	5	0	Loss = 2 (SCS Curve Method) CN=38 IA = 1.5mm	2.0%	40	0.25	1 mm	0.013	n/a	Block 79 SWM Pond	Block 79 SWM Pond	Block 81 Channel

COLE

Prepared by: Jessica Lysecki, P.Eng.

Block 82 SWM Pond
Stage-Storage-Discharge

Manors of Belfountain
File No. 2017-0701
Date: May, 2020

Description	Elevation (m)	Area (m^2)	Volume (m^3)	Volume (ha.m)	Average Infiltration Rate (mm/hr)	Safety Factor	Design Infiltration Rate (mm/hr)	SWM Pond Release Rate (L/s)
Bottom of Pond	398.30	3,356.2	0.0	0.0000	103	1.5	68	57.3
	398.40	4,596.7	452.1	0.0452				
Max. WL	400.80	8,623.1	16,161.2	1.6161				
Top of Pond	401.10	10,040.0	18,958.8	1.8959				

COLE

Prepared by: Jessica Lysecki, P.Eng.

Block 81 SWM Pond
Stage-Storage-Discharge

Manors of Belfountain
File No. 2017-0701
Date: May, 2020

Description	Elevation (m)	Area (m^2)	Volume (m^3)	Volume (ha.m)	Average Infiltration Rate (mm/hr)	Safety Factor	Design Infiltration Rate (mm/hr)	SWM Pond Release Rate (L/s)
Bottom of Pond	399.80	22,262.9	0.0	0.0000	91	1.5	61	337.7
	399.90	25,785.9	2,557.8	0.2558				
Max. WL	402.30	36,256.7	76,861.8	7.6862				
Top of Pond	402.60	41,983.0	88,593.3	8.8593				