Stormwater Management Submission Requirements

Rational Method

For sites under 2 hectares, the following information must be included in the stormwater management submission from the Engineering Consultant on behalf of the Developer and shall be completed in accordance with the **Windsor/Essex Region Stormwater Standards Manual**, including any addendums issued thereafter. Additionally, the submission shall adhere to the City of Windsor's **Standard Specifications** & **Engineering Best Practices**. **Stormwater management review fees** will be collected with the SWM plan submission for review by the City.

Please Note: This checklist **does not apply** to the following circumstances and the Stormwater Management Submission Requirements - **Modeling Method** must be referenced for further information.

1. Site area is greater than 2 ha
2. Time of concentration exceeds two times the appropriate maximum inlet time per graph 3.2.2.6 within the Windsor/Essex Region Stormwater Standards Manual
3. Modeling Method has been used

Total Site Area:	**719.3 m^2**	**Total Number of Drainage Areas**	**1**

DRAINAGE AREA **Sites with multiple drainage areas must include Appendix A**					
EXISTING			**PROPOSED**		
Area	Area (m^2)	Runoff Coefficient (C - Value)	Area	Area (m^2)	Runoff Coefficient (C - Value)
Grassed	719.3	0.2	Grassed	282.3	0.2
Gravel		0.7	Gravel	0	0.7
Paved		0.95	Paved	183.1	0.95
Rooftop		0.95	Rooftop	253.9	0.95
Total	**719.3**	**0.2**	**Total**	**719.3**	**0.66**
Soil Type:	D		Time of Concentration (T):		3.6
Orifice Type:			Orifice Diameter (if applicable):		
*Pre-development runoff (Q_{pre})		3.4 L/Sec	Post-development runoff (Q_{post})		5.6 L/Sec
5-year required storage		8.9 m^3	100-year required storage		26 m^3

Check all boxes to confirm information has been provided within the submission:

STORMWATER MANAGEMENT REPORT		
1. Storage design chart, indicating:		
☑ Time	☑ Intensity	
☑ Maximum Required Storage	☑ Maximum Provided Storage	
☑ Maximum Controlled Peak Outflow (Q_{peak})		
2. Intensity values indicating:		
☑ IDF values	☑ Formula & breakdown of calculations	
3. Storage volume calculations:		
☑ Peak storage	☑ Individual calculations for each storage structure (pipes, catchbasins, etc.)	
4. Site is located within the ERCA regulated area	☐ Yes (contact ERCA)	☑ No
5. *Combined sewer, roadside ditch or municipal drain outlet	☐ Yes (restrict to 2 year predevelopment flow)	☑ No
Please Note: Sanitary flows must be taken into consideration when determining the allowable release rate for any development that outlets to a municipal combined sewer		

STORMWATER MANAGEMENT REPORT - CONTINUED	
☑ 5 year storage calculations ☑ The first 32mm are stored exclusively underground ☑ Surface ponding does not exceed maximum depth of 300mm	
☑ 100 year storage calculations ☑ Surface ponding does not exceed maximum depth of 300mm	
Flow restriction calculations complete with:	
☑ Calculation formula	☐ Orifice Specifications
Please Note: Minimum orifice plate size - 76mm x 76mm (3” x 3”) or 100mm dia. (4” dia.)	

DRAWINGS
SITE SERVICING
☑ Drainage/catchment areas (size, elevations, etc.)
☑ All proposed and existing connections to municipal sewers and watermains. o All redundant connections to be abandoned as per Best Practice BP1.3.3 o Wye connections to combined sewers as per Best Practice BP1.1.1 o Windsor Utilities Commission (WUC) approval is required for any water works
☐ Sanitary sampling manhole (non residential only) o In accordance with Best Practice BP1.1.2
☑ Existing and new pipe information, including the diameter, slope, material & intended use (storm, sanitary, water, etc.)
☑ Any quantity and/or quality control measures identified with the model number
☑ Location, elevation and description of all catchbasins, manholes, underground storage units and any other structures, labelled existing or new
☑ Dimensions of all driveways at the property line and curb line o Straight flares, with no raised curbs in the ROW as per AS-204 o If the subject site fronts a rural cross section, AS-203 may be acceptable o Ditch fills and culverts in accordance with AS-209A and Best Practice BP3.3.3
☐ Poles, pedestals and other vertical obstructions within the right-of-way (if applicable)
☐ Any removals within the right-of-way, including encroachments, sidewalks/leadwalks and redundant driveway approaches
☑ Property lines, including any required land conveyances
LOT GRADING
☑ Existing and proposed elevations, drainage areas, surface ponding, with maximum depths (5 & 100 year ponding elevations)
☑ All catchbasins, manholes, underground storage units and any other structures, labelled existing or new

ADDITIONAL INFORMATION