

## 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

<b>Total Site Area:</b>			<b>m<sup>2</sup></b>	<b>Total Number of Drainage Areas</b>		
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DRAINAGE AREA					
Sites with multiple drainage areas must include Appendix A					
EXISTING			PROPOSED		
Area	Area (m <sup>2</sup> )	Runoff Coefficient (C - Value)	Area	Area (m <sup>2</sup> )	Runoff Coefficient (C - Value)
Grassed		0.2	Grassed		0.2
Gravel		0.7	Gravel		0.7
Paved		0.95	Paved		0.95
Rooftop		0.95	Rooftop		0.95
<b>Total</b>			<b>Total</b>		
Soil Type:			Time of Concentration (T):		
Orifice Type:			Orifice Diameter (if applicable):		
*Pre-development runoff (Q <sub>pre</sub> )		L/Sec	Post-development runoff (Q <sub>post</sub> )		L/Sec
5-year required storage		m <sup>3</sup>	100-year required storage		m <sup>3</sup>

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

STORMWATER MANAGEMENT REPORT		
1. Storage design chart, indicating:		
<input type="checkbox"/> Time	<input type="checkbox"/> Intensity	
<input type="checkbox"/> Maximum Required Storage	<input type="checkbox"/> Maximum Provided Storage	
<input type="checkbox"/> Maximum Controlled Peak Outflow (Q <sub>peak</sub> )		
2. Intensity values indicating:		
<input type="checkbox"/> IDF values	<input type="checkbox"/> Formula & breakdown of calculations	
3. Storage volume calculations:		
<input type="checkbox"/> Peak storage	Individual calculations for each storage structure (pipes, catchbasins, etc.)	
4. Site is located within the ERCA regulated area	<input type="checkbox"/> Yes (contact ERCA)	<input type="checkbox"/> No
5. *Combined sewer, roadside ditch or municipal drain outlet	Yes (restrict to 2 year predevelopment flow)	<input type="checkbox"/> 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	
<input type="checkbox"/> 5 year storage calculations <ul style="list-style-type: none"> <li><input type="checkbox"/> The first 32mm are stored exclusively underground</li> <li><input type="checkbox"/> Surface ponding does not exceed maximum depth of 300mm</li> </ul>	
<input type="checkbox"/> 100 year storage calculations <ul style="list-style-type: none"> <li><input type="checkbox"/> Surface ponding does not exceed maximum depth of 300mm</li> </ul>	
Flow restriction calculations complete with:	
<input type="checkbox"/> Calculation formula	<input type="checkbox"/> Orifice Specifications
Please Note: Minimum orifice plate size - 76mm x 76mm (3" x 3") or 100mm dia. (4" dia.)	

DRAWINGS
<b>SITE SERVICING</b>
<input type="checkbox"/> Drainage/catchment areas (size, elevations, etc.)
<input type="checkbox"/> All proposed and existing connections to municipal sewers and watermain. <ul style="list-style-type: none"> <li><input type="checkbox"/> All redundant connections to be abandoned as per <a href="#">Best Practice BP1.3.3</a></li> <li><input type="checkbox"/> Wye connections to combined sewers as per <a href="#">Best Practice BP1.1.1</a></li> <li><input type="checkbox"/> Windsor Utilities Commission (WUC) approval is required for any water works</li> </ul>
<input type="checkbox"/> Sanitary sampling manhole (non residential only) <ul style="list-style-type: none"> <li><input type="checkbox"/> In accordance with <a href="#">Best Practice BP1.1.2</a></li> </ul>
<input type="checkbox"/> Existing and new pipe information, including the diameter, slope, material & intended use (storm, sanitary, water, etc.)
<input type="checkbox"/> Any quantity and/or quality control measures identified with the model number
<input type="checkbox"/> Location, elevation and description of all catchbasins, manholes, underground storage units and any other structures, labelled existing or new
<input type="checkbox"/> Dimensions of all driveways at the property line and curb line <ul style="list-style-type: none"> <li><input type="checkbox"/> Straight flares, with no raised curbs in the ROW as per <a href="#">AS-204</a></li> <li><input type="checkbox"/> If the subject site fronts a rural cross section, <a href="#">AS-203</a> may be acceptable</li> <li><input type="checkbox"/> Ditch fills and culverts in accordance with <a href="#">AS-209A</a> and <a href="#">Best Practice BP3.3.3</a></li> </ul>
<input type="checkbox"/> Poles, pedestals and other vertical obstructions within the right-of-way (if applicable)
<input type="checkbox"/> Any removals within the right-of-way, including encroachments, sidewalks/leadwalks and redundant driveway approaches
<input type="checkbox"/> Property lines, including any required land conveyances
<b>LOT GRADING</b>
<input type="checkbox"/> Existing and proposed elevations, drainage areas, surface ponding, with maximum depths (5 & 100 year ponding elevations)
<input type="checkbox"/> All catchbasins, manholes, underground storage units and any other structures, labelled existing or new

ADDITIONAL INFORMATION