

Stormwater Management Report

Terms of Reference

PREAMBLE

The objective of a Stormwater Management (SWM) Report is to identify, evaluate, and mitigate the effects of a proposed development on the existing stormwater infrastructure and the environment, and to recommend how to manage rainwater/snowmelt for the proposed development, consistent with the Town requirements and those of the applicable conservation authority, provincial and federal regulations. The SWM report is to demonstrate that the appropriate SWM controls can be implemented to meet the Town, LSRCA / NVCA, and MECP design guidelines.

It provides staff with a basis on which to assess the increased demands on municipal infrastructure posed by the development and the need for future study requirements such as detailed designs. The study recommends improvements to the municipal infrastructure and mitigative measures to reduce erosion, risk of flooding and maintain water quality in receiving stormwater systems. The Stormwater Management Report provides detailed design calculations/modelling and drawings for all Stormwater infrastructure identified within the Functional Servicing Report and/or the Master Environmental Servicing Plan and to contain and manage runoff from the proposed development.

REQUIRED BY LEGISLATION

- The Ontario Planning Act, Ontario Water Resources Act and the Lake Simcoe Protection Plan.
-

WHO SHOULD PREPARE THIS REPORT?

The Stormwater Management (SWM) Report shall be prepared by a registered Professional Engineer qualified in civil/water resources/environmental engineering. All drawings must be stamped, signed, and dated by a professional engineer, licensed in the Province of Ontario. The study may be provided as a separate document or may form part of the Functional Servicing Report.

WHEN IS THIS REQUIRED?

To support the following applications:

- Official Plan Amendment.
 - Zoning By-law Amendment.
 - Draft Plan of Subdivision / Condominium.
 - Detailed Subdivision Engineering Review.
-

Stormwater Management Report

Terms of Reference

- Site Plan Control.
- Other process as may be required or identified by the Town.

WHY DO WE NEED THIS REPORT?

- To identify the quality and quantity impacts of the change in stormwater runoff on existing infrastructure and watercourses due to a proposed development.
- To determine the requirement of new infrastructure and/or improvements to existing municipal servicing infrastructure required to support the proposed level of development, where applicable.
- To determine mitigation measures to minimize any negative impacts on the drainage system
- To identify opportunities for enhancement of stormwater management facilities and features in redevelopment sites.
- If conducted in an area with an existing Master Environmental Servicing Plan (MESP), to further develop the strategy established in the MESP and confirm the viability of the SWM mitigation plan and targets.

HOW SHOULD THIS REPORT BE PREPARED?

A Stormwater Management Report should, at a minimum, contain the headings and respective information as follows:

Introduction

- Municipal address of the subject property.
- Development Application Number (if available).
- General site location of the subject property and neighbouring properties.
- Project Name (if applicable).
- Applicant and owner's contact information.
- Author name, title, qualifications, company name and appropriate stamp.
- Brief description of the proposal.
- Overview of the study area and connected external drainage areas.
- Purpose of the study.

Stormwater Management Report

Terms of Reference

- Reference background studies/reports (watershed, subwatershed study, MESP, Functional Servicing Report (FSR), other master planning documents etc.).
- Reference related supporting studies such as geotechnical, hydrogeological, Environmental Impact Study (EIS) etc.
- Location and context map.

Proposal Description and Context

- A description of the proposal, development statistics (such as number of units, site area) type of development proposed, imperviousness ratio, height, FSI, parking areas, access points, location of amenity areas, proposed phasing etc.
- A description of the existing on-site conditions as well as surrounding areas, development limits, soil conditions, natural heritage features, groundwater, roads, buildings, parking areas, minor and major drainage systems, SWM facilities etc.
- Concept Plan for the development including building location, parking, access, amenity areas, grading and natural features and any natural hazards, proposed minor and major drainage system, location of SWM facilities.

Investigation/Evaluation

- Identify with a map existing contours and pre-development catchments, including external contributing area.
- Design parameters (e.g., calculation of the time of concentration for pre-development conditions, intensity, design storm, etc.).
- Proposed grading/contours and post development catchments area.
- Identify flood plain limits of all watercourses and update, if necessary, based on ground established topographic mapping.
- Identify and provide a plan with pre-development and post-development catchments, including area, catchment ID's, and runoff coefficients.
- Identify and provide a plan with the existing and proposed major and minor systems, overland flow routes, including storm sewers, stormwater management facilities, low impact development measures, approved inlets / outlets, etc.
- Identify all internal and external drainage areas under existing and future development conditions.

Stormwater Management Report

Terms of Reference

- Identify constraints and potential opportunities – quantitative, qualitative, erosion sensitivity, thermal mitigation and environmental concerns related to stormwater for interim and/or ultimate development conditions.
- Identify existing stormwater management requirements and/or criteria that apply specifically to the site (applicable watershed and local drainage constraints).
- Include computer modelling and/or calculations required to achieve the previously established SWM criteria (Note: instructions on modelling and/or calculations will be discussed with the Town).
- Assess compliance to municipal Consolidated Linear Infrastructure Environmental Compliance Act (CLI ECA) (for existing municipal or to be municipally owned infrastructure) for pre-authorization.

Impacts and Mitigation Measures

- Indicate the design assumptions and the engineering schemes to achieve stormwater management criteria including, but not limited to quantity, quality, erosion control, water balance, Low Impact Development (LID) techniques, etc.
- Identify mitigation measures to achieve the SWM criteria.
- Demonstrate that the proposal has followed the SWM hierarchy of optimized source control measures, and then consideration of conveyance control measures and end-of-pipe measures to achieve SWM objectives.
- Indicate if off-site land or works are required to implement the stormwater management proposal and comment to what extent (e.g., easements, dedication, land acquisition, etc.).
- Identify the necessary erosion and sediment control measures required during the construction phase to minimize downstream impacts.
- Indicate if other agencies have jurisdiction and if their approvals or permits are required and provide record of approvals (e.g., Ministry of Transportation Ontario (MTO), Ministry of Environment, Conservation and Parks (MECP), Department of Fisheries and Oceans (DFO), Conservation Authorities (CAs) etc.).
- The Stormwater Management Report (SWM) needs to identify SWM facilities in accordance with municipal requirements for performance monitoring.
- Provide an Operation and Maintenance manual for the proposed SWM facilities.

Stormwater Management Report

Terms of Reference

Recommendations

- Recommendations for mitigation or upgrades.
- Summary of the identified stormwater management strategy for the proposed development.

Drawings and Supporting Information

- Submit all drawings, figures, reference reports, computer modelling results and design calculations to support the proposed Stormwater Management scheme.

WHAT ELSE SHOULD WE KNOW?

The scope of the study should be discussed with the local municipal engineers, planners and/or other staff or agencies as part of the pre-consultation process.

The level of detail for the Stormwater Management Report depends on the type and scope of application, the size of the development, and the types of stormwater management schemes proposed. For example, a report for a Plan of Subdivision will typically be more complex than a report in support of a Site Plan Control application.

A Stormwater Management Report must include the basic quantity and quality assumptions upon which the report is based, and all appropriate functional plans of infrastructure elements for major and minor flow, which could have an impact on the layout of the Plan of Subdivision or site and building design.

These infrastructure elements may include stormwater management facilities, all water resources, features, and functions.

(i.e., watercourses, riparian areas, recharge/discharge areas), existing overland flow routes, surface features (i.e., top of bank of valleys) and existing infrastructure (i.e., water and wastewater infrastructure and underground utilities).

Pre-consultation with the Lake Simcoe Region Conservation Authority and/or the Nottawasaga Valley Conservation Authority is strongly recommended to ensure that all requirements are incorporated into the first draft of the study. The Lake Simcoe Region Conservation Authority (LSRCA) has a Phosphorus Offsetting Policy that may be applicable to the subject property.

Stormwater Management Report

Terms of Reference

ADDITIONAL TERMS

If the proposed development is revised, the study/report shall reflect the revisions by an updated report or letter from the author indicating the changes and whether the recommendations and conclusions are the same (Note: this is subject to the extent of the revisions).

A peer review may be required. and all costs associated with the peer review may be the responsibility of the applicant.

If the submitted study is incomplete, is authored by an unqualified individual, or does not contain adequate analysis, the applications will be considered incomplete and may be returned to the applicant.

SUBMISSION INSTRUCTIONS

- Follows the Digital File Naming Convention.
 - All submission materials shall be submitted through an FTP site.
-

WHAT OTHER RESOURCES ARE THERE?

- Professional Engineers of Ontario – Why employ a professional engineer?
- Ministry of the Environment Stormwater Management Planning and Design Manual Stormwater Management Guidelines.
- Stormwater Management Criteria, TRCA LID Design Guide, CVC/TRCA.
- Lake Simcoe Technical Guidelines for Stormwater Management Submissions Lake Simcoe Protection Act, 2008, S.O. 2008, c. 23.
- The Town of Bradford West Gwillimbury Engineering Design Criteria Manual, as amended.
- The Town of Bradford West Gwillimbury Sewer Use By-Law, as amended.
- Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains for Alterations Authorized under an Environmental Compliance Approval, as amended.

Stormwater Management Report

Terms of Reference

About these Terms of Reference:

These Terms of Reference were developed by the Town of Bradford West Gwillimbury based on the Terms of Reference prepared by York Region.