
Terms of Reference:

Stormwater Management Reports and Briefs

August 2023

Purpose

A stormwater management report is an evaluation of the effects that the proposed development may have on the natural environment, surrounding lands and the municipal stormwater infrastructure system. The report provides mitigative measures to control stormwater runoff and snowmelt, promotes infiltration of rainwater to recharge the groundwater table, reduces the impacts of flooding and improves the quality of stormwater runoff on the natural environment.

This report may be a standalone document or combined with a Functional Servicing Report.

Who Should Prepare This

All reports and drawings must be stamped, signed and dated by a qualified professional engineer, licensed in the Province of Ontario, with experience in municipal engineering or water resources engineering.

When Required

A Stormwater Management Report may be required to support the following applications for developments:

- Zoning By-law Amendment
- Draft Plan of Subdivision/Condominium
- Site Plan Control
- Site Alteration Permit

The requirement for a Stormwater Management Report may be a condition of initial approval of the proposed development.

If a Stormwater Management Report is required in support of one or more of the above noted applications, Town of Lincoln staff will advise applicants upon Pre-Consultation.

Rationale

The purpose of a Stormwater Management Report is to demonstrate that the stormwater (rainwater and snowmelt) from the development site is controlled in a coordinated manner to prevent the effects of flooding from urban development, to restore pre-development hydrologic functions, and improve water quality with the ultimate goal of maintaining healthy creeks, rivers, and lakes.

A Stormwater Management Report provides staff with a basis on which to assess the increased demands on municipal infrastructure posed by the development, and the need for future report requirements, such as detailed designs.

A Stormwater Management Report is needed to ensure that adequate stormwater infrastructure (public or private) is available for the proposed development. It will identify existing infrastructure, capacity, and any required upgrades or new stormwater (public or private) infrastructure to support approval of the proposed development. It will recommend mitigative measures to reduce erosion, risk of flooding and maintain water quality in receiving stormwater systems.

Required Contents

Prior to undertaking a stormwater management report, please confirm the terms of reference for the report with Town staff to discuss the scope of the report and ensure the design team has the applicable infrastructure planning, area servicing studies and engineering standards.

A Stormwater Management Report shall ensure compliance with the Environmental Protection Act, Ontario Water Resources Act, Planning Act and the Conservation Authorities Act, Provincial Policy Statement, Growth Plan as well as compliance with the Town's Official Plan, by-laws, Design Standards, and watershed/sub-watershed planning studies. The Town of Lincoln adheres to the recommendations of the Province regarding implementation of watershed management planning and the promotion of a comprehensive ecosystem approach.

The level of detail required depends on the type of application and the size of the proposed development. For example, a report in support of an application for an Official Plan and/or Zoning By-law Amendment will be more conceptual than a report in support of an application for a Draft Plan of Subdivision, which will include more details, such as where lot, block or right-of-way dimensions are approved in principle. The scope of the report shall be discussed with Town staff prior to report commencement.

When a development is located adjacent to a Regional roadway, then the report should also address what the impact of storm drainage from the development has on the Regional road and/or associated Regional drainage system.

Calculations not using the units shown in the Municipal Design Standards shall include appropriate conversion factors for Town review.

During pre-application consultation, it will be determined if such a report is required and, if so, the specific requirements of the Report, based on the nature of the proposed application and the context of the report area.

Notes

If the proposed development is revised, the study/report shall reflect the revisions by an updated report or letter from the author indicating the recommendations and conclusions are the same.

Please note that a peer review may be required. The cost of the peer review will be borne by the applicant.

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

STORMWATER MANAGEMENT REPORTS:

The framework for a Stormwater Management Report shall be based on, but is not necessarily limited to, the following components:

A. Introduction

Every report contains a brief introduction which outlines:

- Purpose of Report
- Background Information
- Location/context map and Description of the subject site;
- Background and Standards used in the preparation of the SWM Report
- Information on the magnitude of the proposed development, including preliminary site design, lots and street layout, etc.

B. Stormwater Drainage

The Stormwater Management Report shall ensure compliance with the Environmental Protection Act, Ontario Water Resources Act, Planning Act and the Conservation Authorities Act, Provincial Policy Statement, Growth Plan as well as compliance with the Town's Official Plan, by-laws, Design Standards, and watershed/sub-watershed planning studies. The Town of Lincoln adheres to the recommendations of the Province regarding implementation of watershed management planning and the promotion of a comprehensive ecosystem approach. See resources in Appendix A.

The Report shall include the following:

- A summary of the Town's applicable criteria to be met
- Stormwater Sewer Servicing Plan - Existing Storm Sewer Servicing and Connections
- Stormwater Servicing Plan – Proposed Minor Storm Sewer System
- Stormwater Servicing Plan – Proposed Major Storm Drainage System
 - A plan of the sewer system, stormwater management facilities and overland flow routes
- Storm Drainage Area Plan:
 - A map of existing contours and pre-development catchments including external contributing areas;
 - Identification of floodplain limits of all watercourses, including the erosion hazard;
 - A plan with pre-development and post-development catchments including area and runoff coefficients
- An Erosion and Sediment Control Plan may be required to supplement this report
- Conformance with Master Drainage Plans where applicable

- Verification that major overland flow routes do not impact properties and that road gutter flows are within Town parameters
- Sewer design sheets
- Existing and/ or adjacent property drainage flows and impact to proposed system and receiving system.
- Outline of the operations, maintenance, and monitoring program for the stormwater management facilities, including Oil Grit Separators (OGS) and Low Impact Developments (LIDs)

C. Stormwater Management Plan

- Existing Drainage Pattern and Peak Flows
- Existing Soil Information
- Stormwater Management Criteria and Design Standard conformance
- Proposed Stormwater Management Plan
- Water balance

D. Sustainability Assessment and Summary – Stormwater Management

The Town of Lincoln has experienced extensive damage from Spring flooding over the last few years. The shift towards Low Impact Development is essential to improving the resilience of watercourses to the hydrologic impacts associated with climate change. The Town has developed a guide (Town of Lincoln's LID and Green Infrastructure Design Guidelines, see Appendix A) to assist developers, consultants and landowners in implementing sustainable stormwater management practices in their watersheds. This guide provides a wealth of information on the planning, site selection and design of many LID practices, aiming to streamline the process to encourage widespread adoption of these principles.

This section of the Report will provide an assessment of potential sustainability features and recommendations for implementation. This includes the inclusion of any low impact developments (LIDs) and their function (and included in the modelling) including relevant hydrogeological information. See available resources in Appendix A.

In some cases ,where it is not reasonably feasible to incorporate sustainability features, appropriate rationale must be provided.

E. Recommendations and Conclusions

This section of the Report will provide a summary and concluding remarks.

F. Figures shall include, where applicable:

- Location Plan, Proposed Development Plan
- Existing Storm Servicing

- Proposed Storm Servicing
- Existing Drainage Area Plans (storm) and Proposed Drainage Area Plans (storm)
- Existing Stormwater Management Plan, Proposed Stormwater Management Plan

G. Appendices should include:

- Full references for all background information sources
- Data from field studies
- Individuals and groups engaged during pre-consultation and consultation
- Storm Sewer System Calculations and Design
- Stormwater Management Calculations
- Sustainability Assessment Tool (LID Screening Tool)

FUNCTIONAL SERVICING BRIEFS:

For less complex proposals, a Stormwater Management Brief may be requested instead of a full Report. The Brief may be included as a covering letter with a formal application or as a short report. The Brief shall give a summary of the proposed stormwater management strategy for the site. The requirement for a Functional Servicing Brief will be determined on a case-by-case basis.

Stormwater Management Briefs shall include at a minimum:

- A description of the proposal and site context
- A summary of the proposed stormwater management strategy including calculations of pre-development versus post-development run-off.
- Screening of stormwater management techniques from the Ministry of Environment Stormwater Management Planning and Design Manual shall also be included.

Appendix A - RESOURCES

Municipal Design & Quality Standards: <https://www.lincoln.ca/media/8588>

Town of Lincoln Low Impact Development and Green Infrastructure Design Guidelines:
<https://www.lincoln.ca/media/8368>

Ministry of the Environment – Stormwater Management Planning and Design Manual
(MOE 2003 Guideline):
http://www.ene.gov.on.ca/environment/en/resources/STD01_076363.html

Niagara Region Stormwater Management Guidelines:
<https://niagararegion.ca/projects/stormwater-management-design-guidelines/pdf/final-report.pdf>

Low Impact Development Stormwater Management Planning and Design Guide:
https://wiki.sustainabletechnologies.ca/index.php?title=Main_Page