

Report No.: WMPSC-2014-03-01 **Date:** March 3, 2014
To: Grand River Water Management Plan Project Team
From: Louise Heyming
Subject: Best Practice Guide for Reducing Urban Non-point Source Pollution in the Grand and Speed Rivers

SUMMARY:

The Grand River Conservation Authority is facilitating an update of the Grand River Water Management Plan (WMP). The Water Management Plan update process provided an opportunity to engage municipal stormwater managers to collaborate on actions to address impacts of urban stormwater. The following memo describes the process of arriving at an agreed upon set of best practices intended to reduce urban nonpoint source pollutant loads to the receiving rivers. Best practices focus on:

- Sustainable funding to support stormwater management programs;
- Development and implementation of stormwater management master plans;
- Improvements to sediment and erosion control implementation and enforcement;
- Enhanced stormwater communication and education programs;
- Opportunities to retrofit existing uncontrolled areas; and
- Maintenance and operation of facilities

REPORT:

Introduction:

The Grand River Conservation Authority is facilitating an update of the Grand River Water Management Plan (WMP). The goal of the plan is to ensure sustainable water supplies for communities, economies and ecosystems; improve water quality to improve river health and reduce the river's impact on Lake Erie; reduce flood damage potential; and increase resiliency to deal with climate change.

Urban stormwater contributes significantly to the phosphorus and sediment levels in the central Grand River. The water management plan update provided an opportunity to engage watershed stormwater managers to collaborate on actions to address impacts of urban storm water. The result of this collaboration is the *Best Practice Guide for Reducing Urban Non-point Source Pollution in the Grand and Speed Rivers*.

Objective

The objective of the Best Practice Guide is to characterize stormwater management and urban runoff impacts on Grand River water quality and propose best practices for reducing urban non-point sources of pollution.

Stormwater Managers Working Group

The governance structure for the WMP update included a Steering Committee, a Project Team and a number of working groups. A SWM working group chaired by GRCA, with representatives from urban municipalities (Centre Wellington, Waterloo, Guelph, Kitchener, Cambridge, Brantford, and Brant County) was formed in 2012. The Stormwater Managers working group is a community of practice for urban stormwater management in the central Grand River Watershed.

AECOM was retained to work with the SWM working group to characterize urban non point sources of pollution in the Grand River Watershed and to develop a guide of recommended best practices. The recommendations of the Guide were incorporated into the WMP Integrated Action Plan. Additional deliverables included a summary of current SWM practice and programs, documentation of existing urban water quality conditions in the Grand River Watershed and developing conceptual models of the sources, pathways and controls of phosphorus and TSS in the urban landscape. The group was also charged with making recommendations for next steps.

The Guide: Elements of an Ideal SWM Program

To solicit input on the Guide, the SWM working group hosted a Stormwater Management Best Practices Workshop in July 2013. Working group members, storm water practitioners and academics participated. In the process of determining recommended best practices, the working group first defined the components of an ideal SWM program. Barriers and specific recommendations to overcome them, were identified.

Key components of an ideal stormwater program were identified as: defined targets and levels of service; operation and maintenance programs; monitoring programs; erosion and sediment control implementation/enforcement; chloride management; communication and education programs and climate change preparedness.

The Guide: Best Practice Recommendations

The Guide provides a set of actionable operational, capital, and planning recommendations that watershed stakeholders agree to pursue. A total thirteen recommendations to reduce urban NPS pollution in the Grand River were agreed on by the working group members. They were developed with the elements of an ideal municipal SWM program in mind. The recommendations include shared action items as well as specific tasks for individual municipalities, the GRCA and provincial agencies.

An overarching recommendation, viewed as key to implementing many of the recommendations, was the need for the SWM working Group to continue to meet on a semi-annual basis. Working group members recognized the importance of this forum for information sharing and collaboration to move joint action items forward. Maintaining the working group also enables continued stormwater management discussions related to the Clean Water Act and the Water Opportunities Act.

The expected timeline for the recommendations vary. Some recommendations are already underway, others can be completed in the short term (1 - 3 years), but most recommendations will require on-going effort (> 3 years).

Recommended Best Management Practices could be classified as meeting one of three key objectives:

- **Improved Stormwater Management Governance,**

Stormwater management governance and stewardship was identified as an area of improvement by the SWM Working Group. Improvements were suggested at all levels, whether it be the completion of municipal stormwater master plans, updating provincial stormwater guidelines, the expansion and coordination of monitoring efforts or increased enforcement of sediment and erosion control implementation.

- **Sustainable Funding**

The need for sustainable funding was identified as another area of improvement by the SWM Working Group. Establishing sustainable funding is essential to properly implement stormwater best practices.

- **Enhanced Stormwater Management Education**

Stormwater management education was also identified as an area of improvement by the SWM Working Group. Education at all levels is necessary to improve knowledge of proper SWM. This includes educating the public on the importance of stormwater management and the role they can play, as well as communicating academic research to watershed stakeholders.

Next Steps

The Guide provides a set of actionable operational, capital, and planning recommendations that watershed stormwater managers agree to pursue. The collaborative process initiated through the update to the Grand River Water Management Plan will continue. The stormwater managers working group will continue to meet and collaborate, sharing information to advance urban stormwater management for the benefit of the Grand River Watershed.

Prepared by:

Approved by:

Louise Heyming
Subwatershed Planning Coordinator

Gus Rungis, P.Eng.
Senior Water Resources Engineer