Day Two - Track One
Thursday, March 22nd, 2018
1:00 p.m. – 1:30 p.m.

Incorporating Riverine Flow Requirements into Stormwater Management using LID and Environmental Flows

Presenter: David Lembcke, Lake Simcoe Region Conservation Authority

Biography

David Lembcke has been with Lake Simcoe Region Conservation Authority for 20 years, the last five of which as Manager of Environmental Science and Monitoring. In his earliest days, David spent his time wading through rivers, streams and stormwater ponds, collecting data for LSRCA's science and research program. Now he spends his time at the other end of the spectrum wading through the vast amounts of data collected by his staff, and presenting the findings at events like this. David has authored and co-authored a number of reports, studies and journal articles about the Lake Simcoe watershed.

Abstract

It is well recognized that land use changes alter the natural flow regime of rivers, most significantly of which is the impact of urbanization and the associated increase in impervious surfaces. Mitigation typically relies on stormwater controls and facilities designed principally to control flooding and sedimentation. In contrast river management has focused largely on setting flow targets that are focused on a single low flow target with the primary goal of maintaining baseflow volumes. This misalignment has arguably led to a disassociation between stormwater management objectives and an understanding of the ecological needs of the receiving watercourse. However, the recent shift in stormwater management towards LID, and in river management towards an Environmental Flows approach has the potential to align both disciplines towards a common outcome. The application of Environmental Flow Assessments for river management has required a paradigm shift away from the exclusive use of low flow thresholds to recognizing the importance of maintaining a wide range of flows, flow durations and event timing to maintain the ecological integrity of the river. While this is a huge step forward, the majority of work in Environmental Flows has focused on rivers where the initial stressor is to low flows. Indeed the vast majority of implementation tools developed to date involve changes to dam management or water taking.

Learning Objectives

1. The impacts of land use change on stream hydrology;
2. Use of Environmental Flows to assess stream flow alteration; and
3. How the implementation of LID can also be a tool for implementing an Environmental Flow regime.