

Day Two - Track One

Thursday, March 23rd, 2017

11:30 a.m. – 12:00 p.m.

The Many Faces of Bioretention: What Monitoring and Research in Ontario is Telling us About Design and Performance

Presenter: Tim Van Seters, Toronto and Region Conservation Authority

Biography



Tim Van Seters manages the Sustainable Technologies Evaluation Program (STEP) at the Toronto and Region Conservation Authority. He has over 15 years experience designing and implementing stormwater technology monitoring studies and developing best practice guidance on the implementation, operation and monitoring of these practices. Throughout his career, Tim has provided advice on the design and construction of stormwater facilities and published several scientific reports and journal articles on hydrology and low impact development stormwater management. He holds a Master's degree specializing in water resource science from the University of Waterloo and a Bachelor of Science degree from the University of Toronto.

Abstract

Managing stormwater runoff with bioretention has become more common in Ontario over the past decade, with new facilities appearing on city street corners, along residential roads, in commercial parking lots and on front lawns. While guidelines have been developed based on monitoring and research across North America, the lack of set standards for design and varying perspectives on how bioretention should be configured for different purposes has led to a wide diversity of applications in the field. This presentation will provide an overview of several different designs and how they have been applied in the field to meet site specific stormwater criteria and objectives. Water quality, quantity and temperature data from intensive monitoring of seven of these facilities will be compared. Recommendations will be provided on how we can expect these facilities to perform and what elements of the design should be standardized to provide a level of assurance that minimum performance expectations are met regardless of design variations.

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Learning Objectives

1. Learn about how bioretention has been designed and applied in Ontario;
2. Understand how bioretention facilities of various designs perform across different land uses, and minimum levels of stormwater control the facilities can be expected to provide; and
3. Identify standard design elements for bioretention and how these may influence overall performance.