

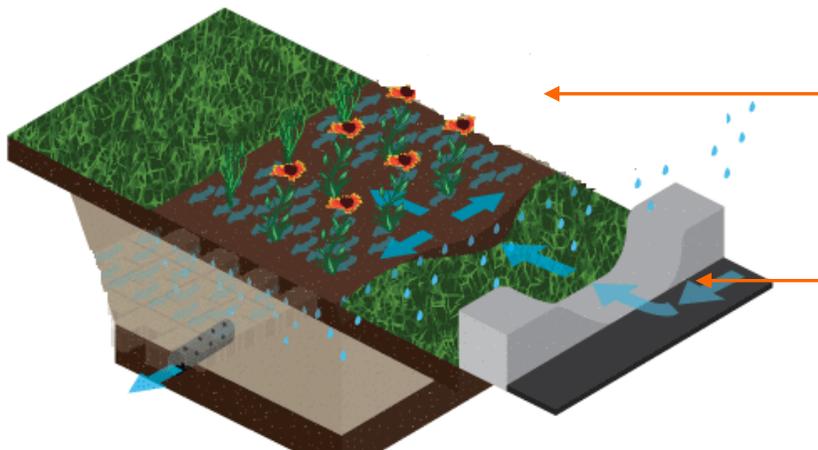
Riverwood

Location: Mississauga



Project Overview

In the Riverwood Conservancy Park in central Mississauga, the main parking lot was retrofitted with a bioswale feature to capture stormwater runoff. The bioswale retrofit includes concrete inlet structures that guide rainwater directly into the feature for better drainage. The swale is designed to reduce the quantity and improve the quality of stormwater runoff from the parking lot to the Riverwood Wetland, MacEwan Creek, and ultimately the Credit River. Monitoring activities at this location were initiated in Spring 2010 and were finalised in December 2012.



BioSwale

The bioswale, located in the main parking lot, absorbs and filters parking lot runoff as the water flows through the plants and soils and back into the ground.

Curb Cuts

Parking lot runoff enters the bioswales through the curb cuts for treatment to reduce stormwater flows

Successes

The successes achieved with this project include:

Innovative project – Constructed in the early 2000's, the Riverwood project was one of the first low impact development (LID) projects on public lands in Mississauga and Ontario. The project has helped to demonstrate that LID practices can be effectively implemented to help mitigate impacts of impervious surfaces such as parking lots.

Stakeholder engagement – The Riverwood retrofit project was a unique partnership between The Riverwood Conservancy, the City of Mississauga and CVC. This project aimed to help educate landowners on how to manage stormwater to protect our environment; providing a template which landowners can employ to cost-effectively address environmental and development issues.

Performance - Results from the monitoring period show that the Riverwood bioswale reduces the volume of rain events by 70%, which is an improvement from a typical parking lot where the majority of runoff travels directly into the storm sewers and into our creeks and streams. This bioswale more closely mimics a natural environment in which 90% of rainfall events are absorbed and filtered.

Demonstration showcase – The bioswale at Riverwood has been showcased through numerous events and site tours, as well as been utilised for a variety of community and education projects. These efforts have helped educate many stakeholders and community members on the benefits of LID.

Infrastructure Assessment

CVC has worked with various experts in order to evaluate the overall performance of the Riverwood bioswale feature.

Objectives include:

- To evaluate the performance the Riverwood bioswale at controlling runoff volume, peak flows, and water quality
- Determine whether the LID feature is working as designed

Performance Findings

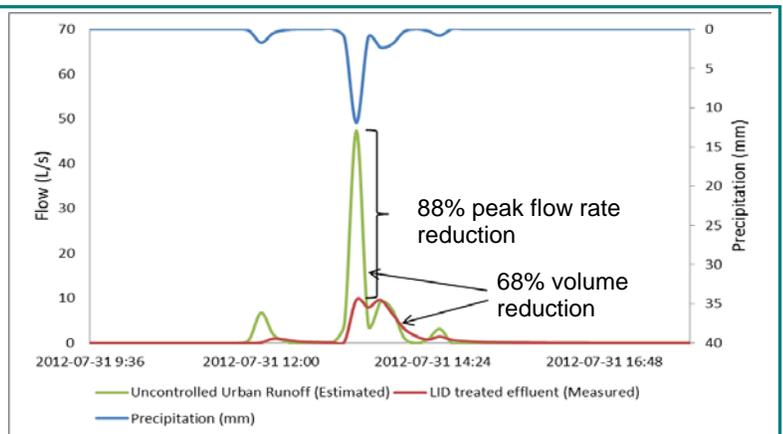
The Riverwood bioswale is allowing an urbanized area to mimic a more natural environment with significant benefits for water quality and water runoff impacts:

- 65% volume reduction for rainfall events ≤ 25 mm in size
- 89% total suspended solids removal
- Median of 80% reduction in peak flows over all events



Volume & Peak Flow Reduction Performance

On July 31, 2012, the Riverwood bioswale experienced a typical high-intensity summer storm event with a rainfall of 22 mm over 14 hours and a peak rainfall intensity of 71.4 mm/hr. As the figure shows, even for this higher-intensity event, the bioswale at Riverwood reduced the storm volume by 68% and reduced the peak flow rate by 88%. In a traditional parking lot, almost all of the rainfall would have runoff adding stress on the municipal system and our rivers



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