



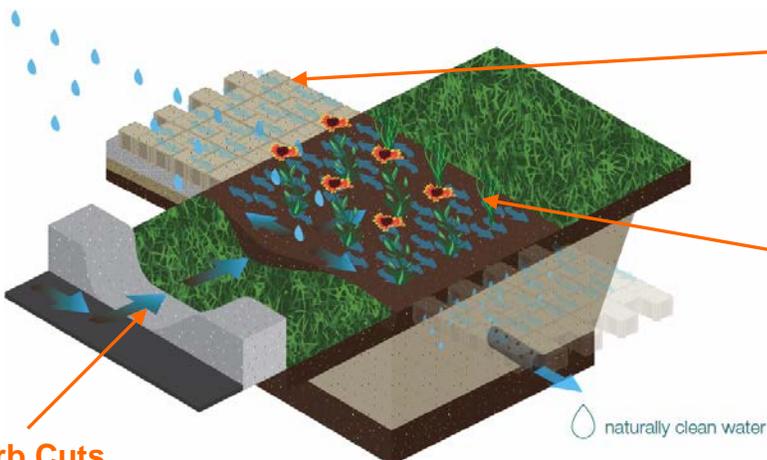
Lakeview

Location: Mississauga
Constructed: August 2012



Project Overview

In the Lakeview community in Mississauga, portions of older residential roads with roadside ditches were upgraded with low impact development (LID) features within the road right-of way. The LID retrofits include permeable paver driveways and boulevard bioretention units, both of which help reduce stormwater runoff and improve water quality flowing into Lake Ontario. Construction of the Lakeview green street project was completed in August 2012 with LID monitoring beginning in the same month.



Curb Cuts

Street runoff enters the bioretention units through the curb cuts.

Permeable Pavers

An alternative to traditional asphalt this LID allows rainfall and road runoff to be filtered as it flows through the pavers and returns to the ground.

Boulevard Bioretention Units

The bioretention units, located in the boulevard, absorb and filter rainfall and road runoff as the water flows through the plants and soils and back into the ground.

Successes

The successes achieved with this project include:

Innovative project – the Lakeview project was one of the first residential green street retrofits in Ontario. The project will help to demonstrate that LID practices can be effectively implemented to help upgrade older roads with roadside ditches.

Community engagement – residents of the Lakeview community were extensively consulted to ensure buy-in before the boulevard bioretention units were constructed. Residents were also given the opportunity to select the desired landscape for the bioretention boulevard units in front of their property.

Reduce costs by 25% – by retrofitting the road using LID as opposed to typical curb-and-gutter, the City was able to reduce the cost of the road resurfacing by 25%, while providing additional stormwater management benefits.

Demonstration showcase – The LID features at Lakeview have been showcased through numerous presentations, events and site tours. These efforts have helped educate many stakeholders on the benefits of LID.

Infrastructure Assessment

CVC is working with an expert advisory committee consisting municipalities, regional government, the MOE, consultants, universities and industry to assess the performance of the LID features at Lakeview. Objectives include:

- To evaluate the performance of LID at controlling runoff volume, peak flows, quality, erosion and restoring the natural water balance.
- Determine whether the LID practices are working as designed and maintenance requirements for optimal LID performance
- Evaluate the degree to which LID reduces the impacts of extreme weather events due to climate change and builds resiliency in municipal infrastructure
- Meet the objectives of CVC's monitoring strategy report (available at www.bealeader.ca)

Performance Findings (2012-2014)

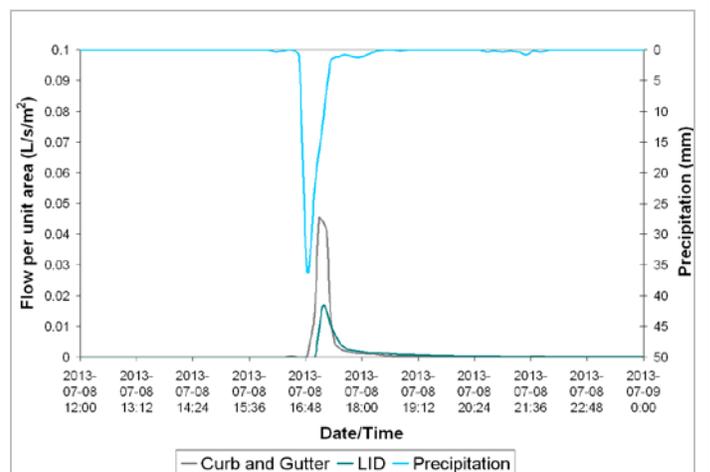
LID practices are exceeding all design expectations, providing significant benefits:

- Rainfall events up to 25 mm (~90% of all events) have little to no stormwater runoff
- 99% total suspended solids removal (not including the July 8 2013 storm event)
- 97% total overall runoff volume reduction
- 100% reduction in peak flows for events <25 mm (excluding winter events)

100 Year Event - July 8, 2013

On July 8, 2013 an extreme event occurred over Lakeview - 104 mm over 5 hours, peak intensity of 240 mm/hr for a duration of 10 minutes. Preliminary analysis indicates that this storm event exceeded the 100-year design storm.

As the figure shows, even for this extreme event, the LIDs at Lakeview helped to provide some peak flow control.



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