

## IBC/WINGHAM RAIN BARREL STUDY, 2009–2010

### FACT SHEET

The rain barrel study broke new ground in North America because it was the first attempt to introduce rain barrels to every household in a community and measure the impact on the amount of water entering the storm and sanitary sewer system. The study was conducted in Wingham, Ontario.

Total number of barrels available for study:	<b>1,000</b>
Number of barrels distributed in 2009 and 2010:	<b>924</b>
Number of barrels installed in 2009:	<b>458 (49.6%)</b>
Number of barrels installed in 2010:	<b>534 (57.8%)</b>
Average roof area of Wingham homes:	<b>111.5 square metres</b>
Percentage of rainwater from each roof collected by eaves:	<b>33</b>
Percentage of downspouts disconnected from the sewer system:	<b>70</b>

**Note:** It is unlikely that the percentage listed below for reductions in water going into the sewage treatment plant were the sole result of rain barrel use. Based on surveys conducted during the project, most residents were not emptying their rain barrels after rainfalls; therefore, no more water could be captured from subsequent events. It is more likely that the reductions were due to combined changes in the water table and the disconnection of downspouts from the system for the duration of the project.

Reduction of water flows at sewage treatment plant in 2009 compared with 2008:	<b>26%</b>
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**Note:** This large decrease in 2009 is due to the fact that water tables were high in 2008 because of flooding in Wingham.

## LESSONS LEARNED

The benefit of rain barrels could have been greater if the barrels had been emptied after each rain event in order to maintain their maximum temporary storage capacity. The most cost-effective and likely way to address this shortcoming would be to devise and install a gravity drain valve, which would automatically empty the barrel without the resident having to do it.

Maximum potential capacity of stormwater diversion for a single event if all barrels were installed and properly used:	<b>205,000 litres</b>
Estimated capture using gravity drain valve with rain barrel:	<b>more than 4.5 million litres</b> (enough water to fill two Olympic-sized swimming pools)

Based on knowledge gained from this study, IBC will conduct a second rain barrel research project using barrels equipped with a gravity drain valve. The second study will take place in Atlantic Canada in 2012.