

## Ottawa, ON

### Downtown flooding issues eliminated by Hydro-Brake® vortex flow controls

#### Project Profile

##### Objective

Storm events were soaking downtown basements in Canada's capital due to CSO overflows.

##### Solution

930 Hydro-Brake® Optimum flow control valves were installed as part of a three-phase construction project to eliminate CSO overflows.

Ottawa receives over ninety inches of snow per year, and nearly 30 inches (76 cm) of precipitation. All of this rain and snow were straining Ottawa's CSO sewage system, and angering downtown residents and businesses with repeated basement flooding events. As the capital of Canada, downtown flooding issues were not acceptable.

Hydro International, a leading provider of environmentally sustainable products and innovative solutions that control and treat stormwater, wastewater and combined sewer overflows has completed the third stage of a program to supply the City of Ottawa, Canada, with 930 Hydro-Brake® Optimum flow control inlet control devices to alleviate basement flooding in the downtown area.

The City of Ottawa installed 485 Hydro-Brake® Optimum devices in early 2009, and recently purchased a second and third round of valves totaling 445 units. The city used the inlet control devices as part of a large-scale upgrade of the drainage system in the O'Connor Street area, just south of the St. Lawrence River.

Hydro International's Hydro-Brake® Optimum flow control solution provided the city with a very cost effective alternative to completely separating their CSO and SSO systems.

The City has reported a large number of basement flooding incidents over the years in the combined sewer area resulting from overwhelmed combined sewers, which carry wastewater and stormwater in the same pipes. When too much stormwater enters streetside catchbasins, the sewer can reach its capacity, finding relief in basements located in the low-lying areas of the City.

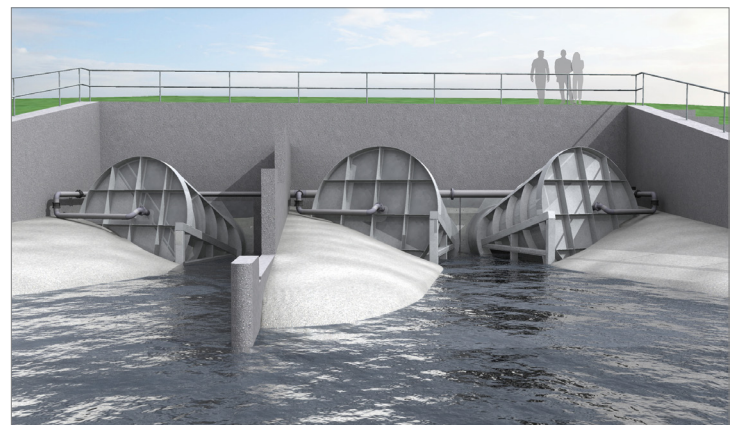
##### Project Highlights

- The project protects the downtown area of Ottawa, a city of 800,000 from CSO system flooding

The City is using the Hydro-Brake® Optimum flow control valves to restrict the stormwater flows into the combined sewers. Under low flow conditions, the Hydro-Brake® Optimum acts as a large orifice where water and debris pass directly from the inlet to the outlet. As flow increases a vortex with an air filled core is formed inside the unit which starts to throttle the flow. As the head increases, the air core fully stabilizes and the valve discharge is throttled to that of a smaller orifice.

"Our combined sewers were simply taking in too much run-off through the city's catchbasins, and we needed a reliable, cost-effective solution," said Darryl Shurb, a Senior Project Manager in the City of Ottawa Public Works and Services Department. "Our first round of Hydro-Brake® flow control valves made a measurable difference in our basement flooding problem, and we're looking forward to even more improved results with this second shipment of valves."

"We are proud to have completed this landmark flow-control project for the City of Ottawa," said Neil Raymond, General Manager of Hydro International's wet weather operations based in Portland, Maine. "The Hydro-Brake® flow control valve has been a worldwide success, with more than 18,000 installations. We think the performance in Ottawa will serve as blueprint for other communities looking to reduce flows into their combined sewer systems."



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Darryl Shurb, Senior Project Manager, City of Ottawa Public Works