

# City of Ottawa's solutions for inflow to combined sewers

By Will Curry

The City of Ottawa has older combined sewers in its downtown core and for years has had to find solutions for the undersized sewer pipe system.

In 1986, City Council approved the installation of tin covers under catch basins to prevent heavy rainfall events from overtaxing the combined sewer system and thereby causing sewer backups in homes. The tin cover with a small hole opening was simply placed under the cast iron frame on the roadway catch basin (Figures 1 and 2). This product was a maintenance issue for staff and is rarely used anymore.

Various devices are available in today's market for this type of flow restriction for all types of sewer systems. The concept is basically to restrict the amount of water that gets into the catch basins.

**Products used by the City of Ottawa**

A similar product is an inlet control device such as a PVC plug placed in the

pipe opening in the catch basin. (Figure 3) This is commonly used for stormwater management practices to restrict water inflow. It is relatively easy to install for existing catch basins or in new residential development areas. It is placed directly in the outlet pipe inside the catch basin. These plug type inlet control devices can achieve a flow restriction in the range of 15 L/s to 50 L/s. However, if the hole is too small, it becomes a maintenance issue and can ultimately block from floatable debris that gets washed into the catch basin from the road.

To obtain low flow restrictions a vortex device can be installed in the catch basins. Vortex devices can achieve very low flow restrictions but the City of Ottawa limits the lowest flow control to 6 L/s, otherwise these may also become plugged and/or blocked by floatables in the catch basin. This device also restricts unwanted odours from the combined sewers as it has an extended intake arm

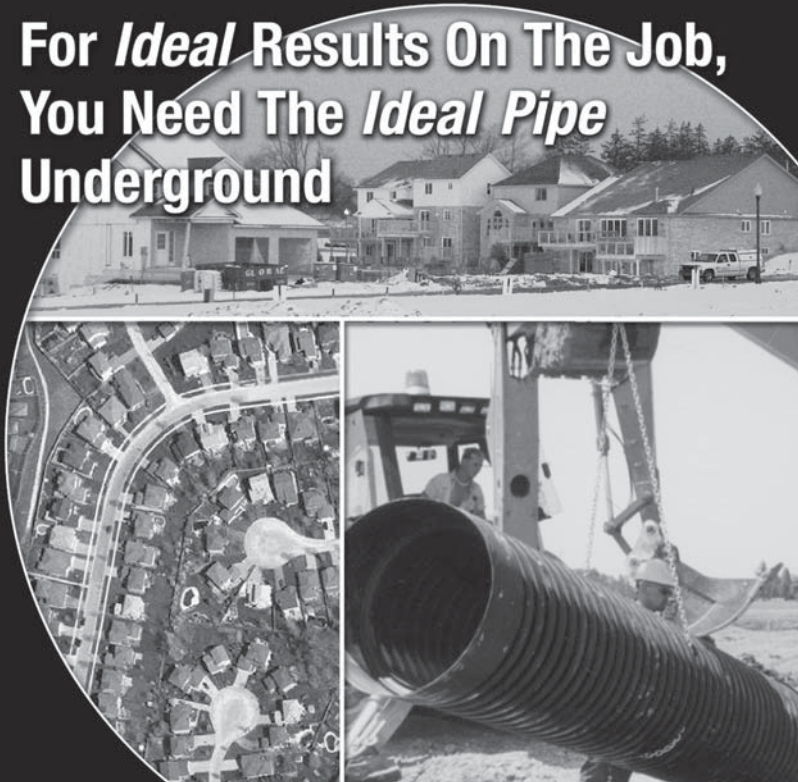


Figure 1.



Figure 2.

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Figure 3.



Figure 5.



Figure 7.



Figure 4.



Figure 6.

that is submerged under the water level. (Figures 4 and 5)

Another product that has been modified over the years is what the City of Ottawa refers to as “the trap assembly” which it fabricated to limit the flow in

catch basins, act as an odour trap, and for control of floatable debris. (Figure 6)

The latest version of the trap assembly mounted to a display board is ideal for achieving different flow restrictions just by selecting a different hole size on the

front face. It also has a very good gasket and is easily removed by City operations staff if need be. It has proven to be ideal for the control of floatables. (Figure 7)

In addition to restricting inflow into the catch basins, the City uses an insert under the manhole covers for both sanitary and storm sewer systems.

The City has also introduced various low flow covers for catch basins and manholes to help minimize inflow into the sewer systems.

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