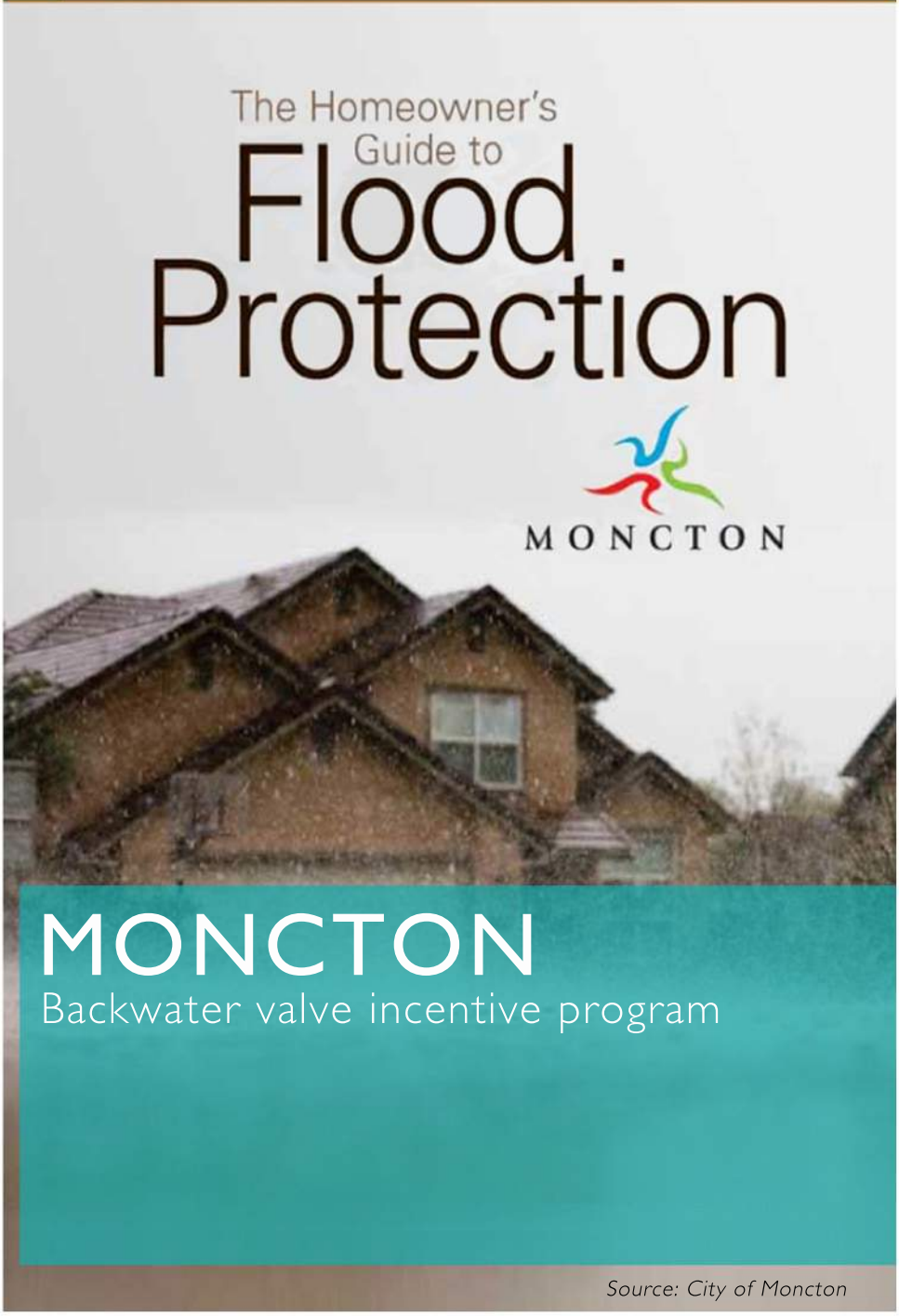


Source: City of Moncton

THE SCIENCE

Backwater valves permit the flow of wastewater away from a home to the municipal sanitary sewer system. During an extreme rainfall event, the valve will close automatically if sewage or water approaches the home through the sanitary or storm lateral. A backwater valve is one of the most effective tools available to reduce the risk of damage to homes from stormwater and sanitary waste. Most homes in Canada, however, do not have a backwater valve.

Backwater valves are particularly cost effective when installed in a new home. This can be encouraged by local by-laws and provincial building codes. Backwater valves are also powerful tools to protect more than eight million existing homes connected to the sanitary or combined sewer system, although the cost of installation is higher than during initial construction. Many communities offer financial incentives to encourage property owners to install backwater valves and other protective devices. The outcome, however, has been disappointing in many communities. Frequently the majority of homeowners do not participate in these programs. The incentive program in Moncton was successful in reaching about half of eligible homes, a higher take up rate than most communities. In part Moncton's success was the result of a rigorous communication effort.

THE TRIGGER

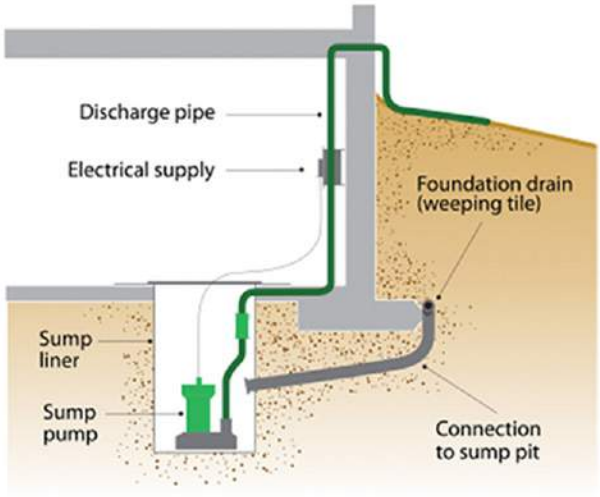
Similar to many Canadian communities, extreme rainfall and basement flooding occurs regularly in Moncton. Significant basement flood damage in 2008 in the Pearlview West area led to a City pilot project of financial incentives for homeowners to install backwater valves and other measures to reduce the risk of basement flooding.

The initial success of the pilot project combined with damage across the City the following year from sub-tropical storm Danny led to a comprehensive effort by Moncton to address the risk of loss and damage from basement flooding.

THE APPROACH

Backwater valves were offered to 100 homeowners in Pearlview West. Approximately 50 percent of the eligible homes agreed to participate in the program. This is a high uptake rate relative to most other communities. No basement flooding occurrences have since been reported in these homes.

The pilot program included a number of other measures to assist homeowners in the reduction of basement flooding risks. This included active public education about backwater valves, weeping tiles and sump pumps. Requirements for lot grading and window well covers were also adopted. The pilot was successful in determining actions Moncton could use in city-wide efforts to reduce the risk of basement flood damage. In particular, the City focused on the opportunity for financial incentives to be a mechanism for Moncton to secure the participation of residents in the implementation of actions to reduce the risk of basement flooding, such as installing backwater valves on private property.



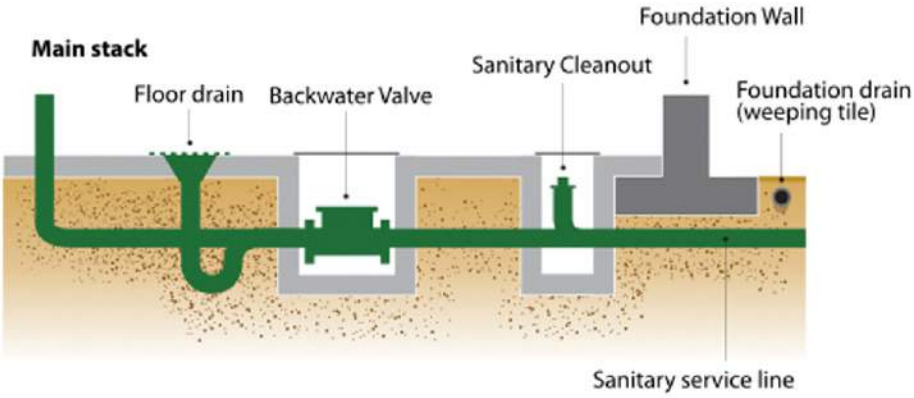


Figure 10 : *Actions that can be taken by property owners to reduce the risk of water damage. From top to bottom: sump pump installation and backwater valve installation. (Source: Homeowner's Guide to Flood Protection, City of Moncton)*

THE OUTCOME

Following the success of the pilot program in Pearlview West and the extensive damage to homes the following year from Danny, various initiatives were undertaken to promote and encourage the use of backwater valves in the City. In 2009, a by-law was implemented to require the installation of normally open backwater valves in sanitary laterals for new homes. In 2010, Moncton established a $250 rebate for backwater valve installation on household sanitary and combined

laterals. The rebate was later increased to $500, which represents half of the estimated cost of installing a backwater valve in Moncton, to increase the number of homeowners that use the program. The program was expanded beyond a normally open backwater valve on the sanitary lateral to also provide a $150 rebate for installation of a normally closed backwater valve on the storm sewer connection.

Moncton also developed literature -- The Homeowner's Guide to Flood Protection -- to educate the public about the best methods to reduce the frequency and severity of basement flooding. The materials explain why basements flood, how municipal drainage systems work and provides a list of actions that can be conducted by property owners to reduce the risk of water damage. This includes information about lot grading, downspout disconnection, and the installation of backwater valves and sump pumps. The broad objective of the City was to empower homeowners with the information needed to participate in protecting their property from damage during extreme rainfall events.

In addition to the rebates provided for the installation of backwater valves, Moncton City Council launched a new program that was directed to homeowners who had been denied sewer backup coverage by their insurance provider. If it was found that homeowners were ineligible for insurance coverage for sewer backup damage, residents may qualify for the installation of a backwater valve at no cost.

Moncton also embarked on a number of projects working directly with the insurance industry to demonstrate the City's commitment to confronting the risk of basement flooding. This included partnership with ICLR's Showcase Homes program and work with the Insurance Bureau of Canada toward development of its Municipal Risk Assessment Tool (MRAT) for combating urban flooding.

A WORD FROM MONCTON

When asked what advice she would give to municipalities that would be interested in implementing a similar incentive program, Sherry Sparks, Director of Building Inspection for the City of Moncton, spoke about the importance of effective communication with the public. "In Moncton, information about the incentive and grant program was included in all water bills with a link to the program's website. This same link was also included in staff members' electronic signatures. In addition, the City used media to reach out to the community, including twitter, radio and television interviews, and local bilingual newspapers."