



KITCHENER/WATERLOO

Sustainable stormwater funding system

THE SCIENCE

Canadian municipalities are responsible for the construction and maintenance of their stormwater management infrastructure. Municipalities across the country are struggling with aging infrastructure unable to cope with existing stresses and loads. For example, the Federation of Canadian Municipalities recently reported that more than \$50 billion is needed to replace or repair municipal storm and wastewater infrastructure. Many wastewater and stormwater systems are approaching the end of their service life and often are unable to protect homes from extreme rainfall damage. Numerous other agencies, including the Canadian Water and Wastewater Association and the Canadian Water Network, have reported that local governments across Canada are facing significant infrastructure deficits, and much of the core infrastructure on which current cities rely is outdated and under-maintained. The cities of Kitchener and Waterloo, however, have introduced a novel way to address infrastructure deficits related to stormwater management infrastructure.

THE TRIGGER

In order to find a sustainable way to fund stormwater infrastructure, the Cities of Kitchener and Waterloo decided to re-evaluate their stormwater funding system. The first step to this process was to launch a detailed review of their funding models for stormwater infrastructure, which was started in 2004. The review brought several concerns to their attention. Similar to many other

Canadian cities, stormwater management infrastructure in Kitchener and Waterloo was aging, maintenance costs were increasing, and growing urbanization and climate change were pushing the system over its limits. Kitchener and Waterloo decided to rethink their approach to stormwater management to come up with a more sustainable way to fund stormwater management infrastructure. The result was the development of a funding mechanism that would provide revenue for infrastructure while giving property owners a more direct interest in awareness of the quality of their infrastructure system and its impact on the environment.

Kitchener and Waterloo jointly conducted a feasibility study that encompassed a five-year comprehensive public consultation and review. The cities decided to replace their tax-based funding model with a user pay system.

One of the most important drivers for changing the funding approach was ensuring that users would pay for stormwater management services in a way that reflected their use of these services. Essentially, those who contributed more runoff from their property into public stormwater management systems would be charged more for stormwater management services. When Kitchener and Waterloo decided to implement the user pay approach, they first had to figure out how to determine how much each property was contributing to the run-off.



Figure 6 : *The Victoria Park Lake Improvement project includes a new sediment forebay. It is designed as an initial storage area to trap and settle out sediment and heavy pollutants before they reach the main basin. (Source: ICLR)*

THE APPROACH

The City of Kitchener decided to calculate the fee based on the amount of impervious area on each property. The City sampled 500 properties, measured the total impervious area and statistically correlated that information to building footprints. Kitchener established 13 funding tiers for the new stormwater charge ranging from \$47 a year for the smallest property to more than \$23,000 a year for the largest non-residential property. Under the previous tax-based funding model, residential properties were paying for about three-quarters of the stormwater maintenance costs. This amount dropped to 55 percent under the user-pay approach. The remaining funds and overall increase in funds were generated from industrial/commercial/ institutional stormwater fees. Overall, this new approach generated a \$4 million increase to the annual capital and operating budget for the City of Kitchener. With this budget, they were able to fund the construction of new infrastructure.

Waterloo's approach used a tiered structure. Under this structure, the fee is also based on the amount of runoff that enters the stormwater management system from a property. The runoff level for each property was estimated by a land-use

classification and property size. In Waterloo, the user-pay approach was implemented progressively over the course of four years, ending in 2014.

THE OUTCOME

Prior to the implementation of the user-pay approach, Kitchener and Waterloo identified an annual deficit in spending of \$4.7 million. This deficit led to consequences such as flooding and erosion. The new rate structure established by both cities made it possible to have a dedicated and stable funding source to finance both the rehabilitation and improvement of stormwater infrastructure. Officially implemented in March 2012 for Kitchener and January 2013 for Waterloo, the user-pay approach has proven to be sustainable on multiple levels. Not only does it encourage sustainable practices from property owners, but it can also eventually help the municipalities to invest in capital improvements in areas where stormwater infrastructure is non-existent or needs to be replaced. As an example, the City of Kitchener was able to fund the Victoria Park Lake Improvements project.

When the Cities of Kitchener and Waterloo decided to switch to a user-pay approach for stormwater management, they also introduced a stormwater credit program. With a rate structure and the utility model, it became feasible to provide financial incentives for properties that have implemented onsite stormwater controls to reduce runoff from impervious areas. In both Kitchener and Waterloo, stormwater credit programs have been created for both

the residential and non-residential sectors. For non-residential property owners installation of various features, such as stormwater management ponds, oil grit separators, rooftop storage, underground storage, parking lot storage, filter strips, paved area sweeping program, salt management plans, and so on, can result in a lowering of the stormwater management fees charged to stormwater users. On the educational level, businesses, schools and landlords can qualify for educational credits by implementing training programs to increase employee awareness of stormwater management or by distributing educational material.

A WORD FROM KITCHENER/WATERLOO

When considering a user-pay program for stormwater management, Todd Chapman, Manager of Programs, Water Services for the City of Waterloo recommended that municipalities implement some kind of stormwater credit or rebate program for property owners. In Waterloo, around 750 applications for the rebate program have been made to the City since its implementation at the beginning of 2013 and Kitchener has received 4,500 applications less than a year after making applications available to the public. Mr. Chapman also mentioned that several residents have contacted his team to get more information on various stormwater retention techniques.