

A background image of a water tower in Guelph, Canada, with the word 'Guelph' visible on its side. The image is overlaid with a green and blue gradient and a large white circular graphic element on the left side.

GUELPH, CANADA: Rebates for Greywater Reuse and Rainwater Harvesting

Circular strategy:
REDUCE



Introduction

The Canadian city of Guelph has long been considered a leader in water sustainability and conservation in Canada. With climate change, a constrained supply of groundwater as their primary drinking water source, and increasing provincial population growth, planning for sustainable, alternative supply sources became necessary. The Guelph city council responded by enacting aggressive water reduction targets; to meet them, the city must explore innovative measures that go beyond its existing conservation programming.

To that end, Guelph conducted pilot studies to test the potential of home-based rainwater harvesting and greywater reuse systems in 2009. The pilots received financial support from a national sustainability fund. Following successful testing, Guelph homeowners became eligible for rebates to help offset the systems' steep installation costs. To date, 34 properties in Guelph have participated in the rebate programs.





Context & Key Actors

Guelph, Ontario, is one of the largest Canadian cities to rely primarily on groundwater for its drinking water supply. Recognizing this, the city has long sought to conserve water with community water efficiency programming going back to 1998.

In 2006, the Guelph city council endorsed the Water Supply Master Plan (WSMP), which evaluated the city's options for meeting increasing water demand over the next 50 years. The WSMP identified increased water conservation as the most readily implementable and cost-effective option for Guelph.

When the 2009 Water Conservation and Efficiency Strategy and subsequent Water Efficiency Strategy 2016 proposed recommendations to achieve the WSMP's targets, it was noted that many existing conservation programs would reach community saturation in the next decade, meaning that the city would need to complement existing programs with more innovative demand-reduction options.



Intervention

The idea of innovative demand management alternatives was introduced to the community and policymakers via a public consultation process. Public consultations indicated that there was both community and political support for decentralized demand substitution approaches, which include greywater reuse and rainwater harvesting. The Guelph city council approved pilot studies to examine local feasibility and capacity for the two approaches in 2008. The pilots were funded by 72,524 CAD in grants from the Federation of Canadian Municipalities (FCM) Green Municipal Fund, which provides financing for sustainability-related capital projects.

Following successful field testing, Guelph began offering residents up to 1,000 CAD rebates for installation of greywater systems in 2012 and up to 2,000 CAD rebates for installation of rainwater harvesting systems in 2010. Both rebates are ongoing.

Both rainwater harvesting and greywater reuse systems function to reduce demand on the water supply by allowing homes and businesses to use water that would otherwise enter sewage or storm water systems. With rainwater harvesting systems, homes and businesses collect significant quantities of runoff from roofs, which is first filtered, then stored in tanks or cisterns for later use in landscaping, toilets, and laundry. The water is treated with ultraviolet light, but remains non-potable. The greywater systems used in Guelph run shower or bath greywater through a filtration and chlorination treatment process, then recirculate it for use in toilets. Participating households are eligible for Guelph's Blue Built Home certification, which recognizes water-efficient homes.

Aspects of the rebate programs are managed by the city's Environmental Services and Building Services departments.



Success Factors

- **Experienced local government:** Guelph City Council members and public servants already have experience with water efficiency planning and conservation programming, and thus higher capacity to implement the innovative programs, since the city has carried out various programs/rebates to that effect since 1998.
- **Public awareness:** established community programs, outreach campaigns, and public consultation processes led to heightened awareness and buy-in at the community level.
- **Funding mechanism:** funding from the FCM Green Municipal Fund helped the city conduct a full year of pilot testing of the interventions to collect learnings and best practices before making the rebates available to the general public.

Impacts

- **Reduced water consumption:** rainwater harvesting systems significantly reduce water use, especially during summertime, when approximately half of household water consumption in many municipalities is used outdoors (e.g. gardening, washing cars). Households participating in the greywater system pilot reduced water demand by an average of 22.6 liters per household member per day.
- **Lower utility costs:** installation of greywater reuse systems reduced household utility costs by almost 100 CAD annually, as determined by the pilot.
- **Water security:** potable water supplied to homes can be used more efficiently (i.e. only for applications where drinking water quality is required), reducing pressure on the city's infrastructure and water supply.





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