

Memo



Date: February 22nd, 2010
File: 5600-08 Water Sustainability
To: City Manager
From: D. Degen, Utility Services Manager
Subject: 2009 Water Sustainability Action Plan Update and 2010 Plan

Recommendation:

THAT City Council receives as information an update on the Water Sustainability Action Plan from the Utility Services Manager dated February 22, 2010.

Background:

In 2007, Council adopted a Water Sustainability Action Plan for the City of Kelowna water utility. This plan outlines a number of initiatives that are designed to reduce overall water consumption within the Kelowna water utility by a further 15% by 2012. This reduction will complement a 20% overall reduction in water use that has already been achieved since the Water Smart program was established. While Kelowna residents are no longer the highest water users in Canada or in British Columbia further reductions are necessary and achievable in support of water sustainability.

The Water Sustainability Action Plan is managed by Utility Services. H2Okanagan provides contracted services to deliver the elements of the action plan through its Water Smart program. The Water Sustainability Action Plan and Water Smart program are both nationally recognized and the plan was presented at the FCM conference in Ottawa in 2007.

The Water Sustainability Action Plan focuses on seven (7) initiatives related to water sustainability best practice. The initiatives are:

1. Demand Side Management Programs
2. Customer Education
3. Link Water Conservation to Development Approvals
4. Ensure Effective Full Cost Pricing
5. Reduce Water System Leakage
6. Ensure the Use of Efficient Fixtures
7. Explore and Develop Water Reuse

2009 Accomplishments/2010 Planned Activities

The following is an overview of the 2009 accomplishments for each of the seven (7) initiatives contained in the plan and the activities planned for 2010.

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1. Demand Side Management Programs

The water utility now has 12 years of water consumption data from its customer metering program. This consumption data is used to assist the utility in identifying customer usage patterns for residential, commercial, multifamily and industrial customers and is also used to help customers in their conservation efforts. For example, single family homes remain the main contributor to the water utility's peak water demand. The city's own water use, through its many parks and facilities, has also been recognized as a potential area for water use reduction.

In 2008 a project began to audit the water use at all parks and city facilities. The study concluded that indoor water use at city facilities for the most part is adequately metered and fairly well managed. Although metering has been installed on many new park facilities, many older park sites were not metered and a 2 year program began in 2009 to ensure all parks sites are metered.

In addition, recommendations were made to assist in improving irrigation system efficiencies for some park facilities. As part of the 2010 budget City Council also approved funding to complete a major review of the Parks irrigation control system to improve current irrigation technology and to identify opportunities for improved efficiencies.

2. Customer Education

In 2009 residential water use in the City of Kelowna water utility accounted for 41% of the total water demand. Half of this water is used for non-essential outdoor uses like landscape irrigation. Reducing inefficient irrigation at single family homes remains the primary focus for customer education efforts. The Water Smart program completes about 100 free residential irrigation audits annually. Of these, 68% of the customers end up reducing their water use. Water audits will continue in 2010 and we hope to expand that in 2011, along with a new city-wide promotion this spring, encouraging residents to find and repair leaks.

3. Link Water Conservation to Development Approvals

The development of landscape and irrigation standards for water efficiency were a major focus for the utility over the past two years and will be brought before City Council for approval in 2010.

4. Ensure Effective Full Cost Pricing

The water utility continues to review its water rates based on a full cost of service approach. Full cost of service pricing provides a rationale basis for distributing the costs of utility service to each class of customer according to the unique demand each class places on the system. As part of the water sustainability action plan, a review of each customer class is conducted annually to determine the full cost of service to provide water to each of the specific customer classes. In 2009 part of the new rate structure included the creation of a new customer class for stratas. This was due, in part, to reports that some strata's, especially some bare land stratas where the homes and lots resemble single family homes, use more water per square foot than single family homes. In these cases where strata's use about the same amount of water as single family homes, their charge for that water was significantly less. Finally, there has been a downward trend in average single family residential water use over the last 10 years however our consumption data also suggests there has been an upward trend in average bare land strata water use over the same period. The utility is now working with some representatives from the strata community to gather their input and feedback on concerns related to strata water consumption. We have also exchanged general consumption data and continue to work with them to verify consumption trends.

5. Reduce Water System Leakage

In 2009 the Water Utility completed its first ever comprehensive water audit and leak detection survey for its water distribution system. This audit follows best practices by the American Water Works Association and identifies specific areas where water losses may be occurring. The 2009 report (based on 2008 data) indicates 7% of water is unaccounted for, which by industry standards is considered extremely low and represents a tight system with minimal leakage. Across North America average water system loss is in the 15% range with some utilities experiencing as much as 30% water loss. Some of this water loss is due to leaks in the system and some is due to the lack of measurement for certain uses (firefighter training, for

example). The water audit will now be done annually to ensure the distribution system is as efficient as possible.

6. Ensure the Use of Efficient Fixtures

Average residential indoor water use has declined almost 10% in the past ten years. This is due to the plumbing regulation bylaw that ensures low flow fixtures in new construction. The plumbing code bylaw was last amended in February, 1998. In 2009, we reviewed current low-flow technology and drafted an amendment to the plumbing code to include a toilet that uses no more than 6 litres to flush or a dual flush toilet. This amendment will be presented to City Council in 2010. In 2009 we also completed a study on the potential water savings of a toilet replacement program for homes that were constructed prior to 1998. The report concludes that replacing an older toilet with a new, low flush model would reduce water use in an average home by 43 cubic metres (43000 litres) annually.

7. Explore and Develop Water Reuse

Water reuse is popular in many jurisdictions in Europe and the United States. Many Canadian municipalities are now exploring the potential of using non-potable water for irrigation and other purposes. As part of the wastewater treatment plant upgrade, provisions are being made to accommodate the reuse of wastewater plant effluent for all on site irrigation purposes. This will significantly reduce the amount of water that is now being drawn from the city water system. In 2010 we will also be working with Infrastructure Planning to identify water reuse opportunities in the immediate area of the wastewater treatment plant site.

Considerations not applicable to this report:

Internal Circulation:

Legal/Statutory Authority:

Legal/statutory Procedural Requirements:

Existing Policy:

Financial/Budgetary Considerations:

Personnel Implications:

Technical Requirements:

External Agency/Public Comments:

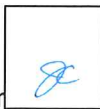
Communications Considerations:

Submitted by:



Don Degen
Utility Services Manager

Approved for inclusion



Joe Creron, Director, Civic Operations