CITY OF KELOWNA

MEMORANDUM

File: 5600-08 Water Sustainability

Date: March 5 , 2008

To: City Manager

From: Water Drainage Manager

Subject: **Water Sustainability Action Plan Update and 2008 Plan**

Recommendation:

THAT COUNCIL receive an update on the Water Sustainability Action Plan as information;

AND THAT COUNCIL receive an overview of the proposed 2008 activities related to this Plan.

Background: In 2007, Council adopted a Water Sustainability Action Plan for the City of Kelowna Water Utility (attached). This 5 year plan sets out reduction targets of 15% over 5 years in addition to a 20% reduction already achieved. Although there have been successes with water use reduction over the past number of years further reductions are both necessary and achievable in support of water sustainability.

The Water Sustainability Action Plan is managed by the City Water Utility. H2Okanagan provides contracted services to deliver the elements of the plan through its Water Smart program and works very closely with staff to deliver services within the service area and the community. Kelowna's Water Sustainability Action Plan and Water Smart Program are both nationally recognized and were recently selected for presentation at the national FCM conference in Ottawa.

2007 Accomplishments & 2008 Planned Activities

All activities are centered around seven (7) primary initiatives
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

1. Demand Side Management Programs

The water utility now has 10 years of water metering data, and we use this data to identify specific customers to target for water conservation efforts. For example, the Parks Division uses about 20% of total water production between May and September. While we must be sensitive to public expectations and park user needs, there is a clear need to work with Parks to

help reduce their water use. Another customer group that requires special attention are the large stratas with detached, single family homes.

2. Customer Education
A number of water conservation experiments concluded in 2007, including drought tolerant grass, compost tea, and the soil amendment program. Results will be used to identify possible rebate programs in the future. Water Smart continues to offer free leak inspections and irrigation/landscape audits for residential and commercial customers. We are active in the community and in the school district. In 2008, Water Smart staff will focus on assisting the Parks Division, Multi-Family, and other specific groups identified through water meter data analysis.

3. Link Water Conservation to Development Approvals
In summer months the water utility pumps about 90 million litres of water per day. About 80% of this goes on the ground for turf and landscape. Poor soil, improperly designed irrigation systems, and excessive use of turf grass contribute to water waste. In 2007 the water utility worked with stakeholders to begin developing landscape and irrigation standards for all new development to ensure that water conservation principles are "built in" to all new landscapes. Kelowna will be the first city in Canada to implement such standards, subject to council review and approval in late 2008 and the changes are welcomed by the development community and the irrigation industry.

4. Ensure Effective Full Cost Pricing
The utility continues to review and revise its rate structure. Significant work has been done over the past 3 years reviewing rate structures to provide for full cost of service. Additional work needs to be done with further analysis of water meter data which has revealed some customer classes who do not pay their full share for the water they use. Recommendations on rate adjustments for these customers will be brought to council very soon to ensure equitable distribution of costs among the various customer classes.

5. Reduce Water System Leakage
The water utility is now in the process of completing a comprehensive water audit and leak detection survey for its distribution system .This audit follows best practices by the AWWA and will identify specific areas where water losses may be occurring. The water utility has an obligation to ensure its infrastructure is providing efficient delivery of water and must minimize any leakage that is discovered. Early indications are that our system is very tight and that leakage by industry standards is likely minimal.

6. Ensure the Use of Efficient Fixtures
The section of the plumbing regulation bylaw that details low flow fixtures (toilets, showers, and faucets) has not been updated since 1993. In that time there have been major improvements in low flow toilet technology. Water Smart is consulting with stakeholders about the implications of revising the bylaw to make High Efficiency Dual Flush toilets the new standard. HET's are common in the United States, but Kelowna would be the first city in Canada to make the dual flush models mandatory.

7. Explore and Develop Water Reuse
Water reuse is popular in the United States and some Canadian jurisdictions. The City of Penticton, for example, re-uses treated waste water to irrigate parks and the municipal golf course. Replicating this in Kelowna would be cost prohibitive, but there are several other

possibilities the utility and the Parks Division are exploring. These include using drainage from detention ponds for parks irrigation and the potential of constructing localized holding tanks within new or existing subdivisions to capture drainage for irrigation purposes. These options are being explored this year.

Considerations not applicable to this report:

INTERNAL CIRCULATION TO:

LEGAL/STATUTORY AUTHORITY:

LEGAL/STATUTORY PROCEDURAL REQUIREMENTS:

EXISTING POLICY:

FINANCIAL/BUDGETARY CONSIDERATIONS:

PERSONNEL IMPLICATIONS:

TECHNICAL REQUIREMENTS:

EXTERNAL AGENCY/PUBLIC COMMENTS:

ALTERNATE RECOMMENDATION:

Respectfully submitted,

Don Degen,
Water Manager

Approved for inclusion:
John Vos
Director of Works & Utilities

City of Kelowna Water Sustainability Action Plan

The following initiatives outline a Water Sustainability Action Plan for the City of Kelowna. This plan is an integral part of the corporate Sustainability Action Plan and is in keeping with city council's goal to reduce water consumption by a further 15% by 2012. Each of the elements listed represent a call for action corporately over the next 5 years, as well as throughout the community.

1. **Require, Implement and Track Demand Side Management Programs (DSM)**
   Implement the City Council endorsed water reduction strategy by reducing overall water consumption by a further 15% by 2012.

   Track internal and external customer consumption data to ensure consumption patterns are in keeping with reduction targets.

   Build relationships with the community and help guide the planning and implementation of DSM programs that require citizen participation.

   Work with all corporate customers to develop DSM reduction plans that reflect the overall corporate reduction objectives.

   Monitor and adapt DSM programs over the long term and plan for water sustainability beyond 20 years.

2. **Enhance Customer Education through Effective Social Marketing Programs**
   Continue to implement permanent water conservation programs and resource these with staff that possess technical skills and understanding in the fields of economics and customer education.

   Develop relationships with high water users in all customer classes and work with these users to develop reduction strategies.

   Develop incentive-based social marketing programs designed to reduce outdoor water use.

   Provide direct assistance to all customers who need to reduce water use.

   Provide leadership and innovation in outdoor water conservation research.

   Work with all other water purveyors within Kelowna to ensure a consistent approach is applied throughout the community.

3. **Link Water Conservation to Development Approvals**

Make Development Permit approval contingent upon demand management planning that provide demonstrated outcome.

Require that all new developments and retrofits of existing facilities and homes make use of the best available water conservation technologies.

Require water sensitive Urban Design by limiting "green sprawl".
Develop mandatory landscaping standards that demonstrate water use reduction and ensure installations occur as part of final inspection processes.

Encourage the provincial government to tie major infrastructure funding to demonstrated water conservation planning.

4. **Ensure Effective Full Cost Pricing with Volume Based Pricing Structures**

Implement full cost pricing with volume based pricing structures.

Reflect the importance and value of water to promote conservation and ensure equitable access through water rates.

Target high and excessive users and send a strong signal during peak demand periods.

Promote revenue neutrality and provide incentives by penalizing heavy users and rewarding low users.

Review opportunities for alternate metering technologies as part of meter replacement programs.

Work with all other water purveyors within Kelowna to ensure a consistent approach to full cost pricing is applied throughout the community.

5. **Reduce Water System Leakage That Results in Water Loss**

Confirm percentage of water system losses as part of the utility's overall unaccounted for water formula. Identify costs associated with delivery and lost revenue.

Enhance the current leak detection program by identifying priority areas and completing leak detection surveys.

Develop a 5 year revolving plan to rectify system leakage.

Work with all other water purveyors within Kelowna to ensure a consistent approach to water system leakage is being applied.

6. **Promote and Ensure the Use of Water Efficient Fixtures**

   Review existing fixture bylaws to ensure they reflect the latest technology available and reconfirm that all new development continues to be installed using mandatory water efficient fixtures.

   Work with all internal departments in 2007 to identify water use reduction opportunities within all city owned facilities.

   Develop 2 year plans that require fixture retrofits to all facilities beginning in 2008.

7. **Explore and Develop Water Reuse Opportunities**

   Identify water reuse opportunities within existing city divisions.

   Explore retrofits or new installation potential where water reuse makes sense.