Rare Water Symposium 06/08/13

Region of Waterloo
Water Efficiency Master Plan

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DOCS 1409072
Background

- 1974 - Delivered first conservation programs
- 1998 – First Water Efficiency Master Plan – results exceeded goals
- 2006 – Master Plan Update Approved by Council
- 2007 – 2015 program implementation
- Now updating WEMP for 2015 - 2025
Benefits of Conservation

- Reduced non-fixed operating costs
- CO$_2$ reduction
- Helps defer infrastructure expansion
- Leak reduction captures lost revenue
- Helps maintain groundwater levels
- Reduce risks of low water during droughts
- Reduced flows to wastewater treatment
Elements of current Program

- Public Education and Marketing
- Outdoor Water Use Reduction
- Efficient Toilet Replacements
- Commercial, Industrial and Institutional (CII) Efficiencies
- Municipal Leak Reduction
- Research and Development
Goals of Public Education

- Promote intrinsic value of water as resource
- Educate about conserving behaviours
- Trigger actions that result in measurable water savings
Outdoor Water Use Reduction

- Rainwater Harvesting
- Naturescaping Promo
- Water Conservation By-Law
Rain Barrel Distrib. 2007 - 2012

- 17,586 200L units
- 21,103 m³/season savings
- 2012 was final year
- 45,600 since '01
Water Conservation By-Law

- May 31 – September 30; since 2005
- Once-per-week lawn watering, "new normal"
- Other measures to reduce water wasting
- Goal to keep max. demands below 227 MIGD
Table 3 - $m^3$ Tri-city Max By-Law Month Demand; Actual & Predicted
TRP Savings 2007 - 2012

- 31,715 toilet replacements
- Cumulative saving 5,271 m³/day
- Since 1984, 63,700
- Likely discontinue rebates by 2014
Commercial, Industrial, Institutional

- Relationships with businesses & Institutions
- Growth in participation & water savings
- Water Efficient Technology or "WET" funding program
## Cumulative savings, 2007 - 2011

<table>
<thead>
<tr>
<th>Description</th>
<th>m$^3$/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerators, showerheads</td>
<td>121.7</td>
</tr>
<tr>
<td>Commercial Front-Load Washers</td>
<td>20.9</td>
</tr>
<tr>
<td>Flush valve toilets only</td>
<td>8.6</td>
</tr>
<tr>
<td>Pre-Rinse Spray Valves</td>
<td>61.9</td>
</tr>
<tr>
<td>W.E.T. savings</td>
<td>384.3</td>
</tr>
<tr>
<td>Leak Repair</td>
<td>588.3</td>
</tr>
<tr>
<td>Total cumulative m$^3$/day saving</td>
<td>1,240.7</td>
</tr>
<tr>
<td>CII &amp; Leak Target m$^3$/day</td>
<td>839.0</td>
</tr>
</tbody>
</table>
Research & Development

- Water Softener Testing & Educ.
  - watersoftenerfacts.ca
  - North American End Uses of Water
  - Rainwater Harvesting
  - Other technical studies
### 2012 Base WEMP Target/Actual

<table>
<thead>
<tr>
<th>Program</th>
<th>Target $m^3$/day</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Public Ed.</td>
<td>2,580</td>
<td>2,544</td>
</tr>
<tr>
<td>Toilet Replacement</td>
<td>3,107</td>
<td>5,271</td>
</tr>
<tr>
<td>CII</td>
<td>666</td>
<td>652</td>
</tr>
<tr>
<td>Leak Reduction</td>
<td>173</td>
<td>588</td>
</tr>
<tr>
<td><strong>Total $m^3$/day</strong></td>
<td><strong>6,526</strong></td>
<td><strong>9,055</strong></td>
</tr>
</tbody>
</table>

2015 WEMP Target (already exceeded!) 8,146

Water saved enough to supply 13,000 households
WEMP - How Low Can We Go?

At What Cost?
Water Demand by Sector

- Single Family: 39%
- Multifamily: 30%
- Commercial: 8%
- Industrial: 13%
- Institutional: 8%
- Other: 12%
Region Per Capita Demand

![Graph showing the trend of Region Per Capita Demand from 2007 to 2011. The demand decreases over the years, with the following values: 238 LCD in 2007, 222 LCD in 2008, 215 LCD in 2009, 209 LCD in 2010, and 203 LCD in 2011.](Region of Waterloo)
Residential End Use Study

Source: Aquacraft and NRC (2013)
Potential New Programs

- Innovative metering measures
- Restaurants & car washes
- Cooling towers
- Targeting new development
- Home audits: leaks, softeners, hot water recirculation, flappers
- Rainwater Harvesting
- Plumber training/certification
- Enhanced Communication
Conclusions

- Keep much of what already doing
- Continued savings harder to get
- Possibly Lower returns - higher cost
- Must target high water users first
Water Efficiency Master Plan Update
Next Steps

- Review short listed options in June
- Draft WEMP Update by end of 2013
- Public Input, first quarter 2014
- Final WEMP approval June 2014
- Implementation begins 2015
Discussion