This presentation premiered at WaterSmart Innovations

[link: watersmartinnovations.com]
How to increase the effectiveness of water conservation programs through stakeholder collaboration for high volume water users

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Introduction
The Program

Irrigation audit and evaluation programs are commonly offered by public utilities as a means to increase outdoor water efficiency while decreasing overall water-use.
In working towards compliance with upcoming state regulations, utilities advertise these programs to high water-use customers as they represent potential for significant water savings.
The Program

However, high water-use customers often do not take advantage of available programs due to multiple factors.
The Goal

The goal is to provide a reasonable pathway for these customers to implement recommendations made by water efficiency staff in order to achieve significant water savings.
The Scope

The scope of this project has been limited to homeowners associations (HOA’s) and public agency landscapes.
The Approach

The approach was two-fold; increase participation and interest among stakeholders and improve on the report for the customer.

Effective program advertising to high water use customers and communication among all stakeholders continues to be vital in reaching high water-use customers and keeping them invested throughout the process.
New Report Format Includes

- Customized water budgets based on site data including: Distribution Uniformity, Overall Plant Type, Localized Weather Data, Effective Precipitation (offsetting wet months) and Cost per Water Unit
New Report Format Includes

Custom water budgets based on site needs

<table>
<thead>
<tr>
<th>YTD Outdoor Use</th>
<th>27159 Units</th>
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</thead>
<tbody>
<tr>
<td>Irrigated Landscaped Area</td>
<td>354,891 Sq. Ft.</td>
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<tr>
<td>Annual Outdoor Water Budget</td>
<td>22923 Units</td>
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</table>

<table>
<thead>
<tr>
<th>Potential Savings</th>
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<tbody>
<tr>
<td>Outdoor Water Savings</td>
</tr>
<tr>
<td>Estimated Annual Water Savings in gallons</td>
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</table>

Historical Outdoor Water Use
New Report Format Includes

Customized Irrigation Schedule with Monthly Adjustments

Weathermatic SmartLink irrigation controllers were observed throughout your association. These controllers have four programs, three start times per program, and a water budget adjustment feature. All of these features were utilized in the creation of the irrigation schedule. The irrigation schedule represents the July water needs for the four hydro zones observed during the landscape evaluation. These hydro zones consist of: pop up sprinklers on turf, rotors on turf, rotors on medium water use shrubs, and rotors on low water shrubs. The monthly water budget chart provides seasonal adjustments to help reduce the amount of water being applied during the cooler months.

<table>
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<tr>
<th>Program</th>
<th>Stations</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
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</table>

Location: Near 1031 St. Andrews Dr
New Report Format Includes

Local Rebates that are applicable to the site
## Common Barriers

<table>
<thead>
<tr>
<th>In- Field</th>
<th>Barrier for Implementation</th>
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<tbody>
<tr>
<td>System Maintenance and Repairs</td>
<td>Return on Investment</td>
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<tr>
<td>Excess Pressure</td>
<td>Stakeholder Communication</td>
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<tr>
<td>Irrigation Scheduling &amp; Over-watering</td>
<td>Not Following Recommendations</td>
</tr>
<tr>
<td>Outdated Irrigation Systems</td>
<td>Professional Training</td>
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<tr>
<td>Not Utilizing ‘Smart’ Functions</td>
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</tbody>
</table>
System Maintenance and Repairs
Excess Pressure
Irrigation Scheduling & Over-Watering
Outdated Irrigation Systems
Not Utilizing ‘Smart’ Functions
Problem Flowchart
Return on Investment

Creating Water Budget
- Measure landscaped area
- Get weather data from state weather stations

Connect to Rebates
- Connect to local rebates applicable to the site

Calculate Potential Savings
- Use potential savings to determine $ of savings
Stakeholder Communications

PRE-EVALUATION MEETINGS
Meet with board members, landscapers, and other stakeholders

REPORT PRESENTATIONS
Present evaluation report to all stakeholders to increase understanding

SPEAKING THE LANGUAGE
Meeting with landscapers/municipal staff to review evaluation
Recommendations Not Being Followed

Post Evaluation Meetings

- Six month phone call and site visit
- Twelve month phone call and site visit

Customized Irrigation Plan

- During the evaluation all plant classifications, irrigation type, soil type, and localized weather data are used to generate a customized irrigation schedule
Professional Training

Offer QWEL Training
- Qualified Water Efficient Landscaper certification
- EPA WaterSense certified course focusing on sustainability and water management

Lunch and Learns
- Bring in speakers on relevant topics
- Advertise through local irrigation and landscape businesses
- Offer CEU's
Figures
Usage vs. Water Budget

City Parks

- Crossroads Park: 15972
- Hidden Hills Park: 1111
- Oakridge Park: 5670
- Sunset Park: 3531
- Western Hills Park: 1127
- Sycamore Glen: 815
- Autumn Hills Park: 1185
- Fairfield Ranch Park: 8802
- Terrace Park: 13587
- Skyview Park: 24542
- Veterans Park: 5194

Water Applied vs. Water Needs
Summary of Findings

• Parks Over Budget: 6

• Parks Under Budget: 5

• Combined Park Usage: 58325 HCF - 134.1 Acre Feet

• Combined Park Budget: 53363 HCF – 122.7 Acre Feet

• Combined Savings: 8140 HCF – 18.7 Acre Feet
Post Year Usage vs. Water Budget
Summary of Findings

- Parks Over Budget: 4
- Parks Under Budget: 7
- Combined Park Usage: 54689 HCF – 125.7 Acre Feet
- Combined Park Budget: 53363 HCF – 122.7 Acre Feet
- Combined Usage Reduction Post: 3636 HCF – 8.4 Acre Feet
Usage by the Month

Terrace Park

Units:

- Water Applied
- Water Needs
- One Year Post Applied
Summary of Findings

- Pre Audit Usage: 3585 HCF – 8.2 Acre Feet
- Post Audit Usage: 3126 HCF – 7.2 Acre Feet
- Post Usage Savings: 459 HCF – 1.0 Acre Feet
Usage vs. Water Budget

Home Owners Associations

<table>
<thead>
<tr>
<th>Association</th>
<th>Water Applied</th>
<th>Water Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sycamore Crest</td>
<td>890</td>
<td>810</td>
</tr>
<tr>
<td>East Carbon Canyon Estates</td>
<td>8727</td>
<td>8552</td>
</tr>
<tr>
<td>Summit Ranch</td>
<td>37900</td>
<td>33689</td>
</tr>
<tr>
<td>Carriage Hills</td>
<td>17681</td>
<td>12398</td>
</tr>
</tbody>
</table>
Summary of Findings

• HOA’s Over Budget: 4
• HOA’s Under Budget: 0
• Combined HOA Usage: 63878 – 146.8 Acre Feet
• Combined HOA Budget: 54438 HCF – 125.1 Acre Feet
• Combined Usage Savings Pre: 9440 HCF – 21.7 Acre Feet
Post Year Usage vs. Water Budget
Summary of Findings

• HOA’s Over Budget: 1

• HOA’s Under Budget: 3

• Combined HOA Usage: 51222 HCF – 117.7 Acre Feet

• Combined HOA Budget: 53363 HCF – 125.1 Acre Feet

• Combined Usage Reduction Post: 12656 HCF – 29.1 Acre Feet
Usage by the Month

Carriage Hills

- Water Applied
- Water Needs
- One Year Post Applied
Summary of Findings

- Pre Audit Usage: 17261 HCF – 39.7 Acre Feet
- Post Audit Usage: 12609 HCF – 28.8 Acre Feet
- Post Usage Savings: 4652 HCF – 10.9 Acre Feet
Conclusions
What We Learned

- Significant potential savings in both HOAs and PALs
- Minimum system maintenance decreases overall efficiency
- Effective communication between stakeholders
- Outdated irrigation systems, minimum maintenance, and over-watering contribute to high water-usage patterns
- Consistent advertising
- Proaction vs. reaction
Takeaways

Further monitoring is needed to establish short vs. long-term trends and changes in water usage behavior.
Questions?

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