This presentation premiered at WaterSmart Innovations

watersmartinnovations.com
Water Cops and Robbers: Policing Unreasonable Water Use in L.A.

Damon Turney
Overview

- The Drought and the Water CRU
- Ordinance Reporting and Enforcement
- Unreasonable Water Use Program Background
- Program Selection Process
- Desktop Audit
- Water Budget
- Water Use Determined “Unreasonable”
- Working with Customers
- Compliance
- Our Results
- Video!!
The Drought

Drought Severity

- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
Water Conservation Response Unit

Some CA towns hiring "water cops" to help deal with drought crisis.
Water Waste Reporting

WATERWASTE@LADWP.COM

MYLA311 Website and Phone App
Water Shaming & Speculations

Who is the Wet Prince of Bel Air? Here are the likely culprits

Report: California Homeowner Dubbed 'Wet Prince of Bel Air' Used 11.8M Gallons of Water in 1 Year

By ABC NEWS • Sep 22, 2016, 8:39 AM ET

The suspect list narrows: Who is the 'Wet Prince of Bel-Air'?
Program Background

• Per the Emergency Water Conservation Plan article of the Los Angeles Municipal Code, it is unlawful for any customer to waste, or engage in the unreasonable use of water.

• LADWP began enforcement in 2016

• Those who are fined are subject to CPRA

• Opportunity to educate our largest users

• Promote investment in efficient equipment
Program Selection Process

• Tier 4 List
• Desktop audits
• Budgeting
• Over/under
Program Selection Process

• Raw Data
  – Includes only Tier 4 customers
  – Nearly 50,000 accounts!
    • Vetted to get usable data – i.e. remove cancelled bills
    • Weed out non-residential accounts
  – Sorted by Daily HCF
  – Comparison done during highest ET period
    • Easier to collect data
    • Most generous budgeting period

Desktop Audit

• Measurement

Use Zimas, NavigateLADWP, and Google to locate property boundaries and assess what area is irrigated (No credit for non-irrigated areas.)

• Lot sizes are verified or corrected for our records
• Google Earth records the area of the different color layers
• Area measurements are entered into Excel template
Desktop Water Budget

Using Industry Standard Methodologies

- Indoor Budget: 55 gallons per person per day (SBx7-7)
- Outdoor Budget: State Model Water Efficiency Landscape Ordinance

Indoor Use

Outdoor Use

(# Occupants) (55 gpcd) + (ET) (.80) (Landscape Area)

Evapotranspiration Rate

ET Adjustment Factor
Water Budget

- Consumption Report
  - 3 year consumption history from all services is recorded from CCB and compared to seasonality curve based on lot size, ET, and household size.

- History shows efficient and inefficient periods and spikes in usage.
## Water Use Determined “Unreasonable”

**• The Desktop Audit – Over Budget**

<table>
<thead>
<tr>
<th>Street Address</th>
<th>Zip Code</th>
<th>90210</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zip Code</td>
<td>90210</td>
<td></td>
</tr>
<tr>
<td># of Occupants</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Estimated Actual Lot</td>
<td>73287</td>
<td></td>
</tr>
<tr>
<td>Estimated Irrigated Area</td>
<td>112000</td>
<td></td>
</tr>
<tr>
<td>Pool</td>
<td>1362</td>
<td></td>
</tr>
<tr>
<td>Fountain</td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>Non irrigated area</td>
<td>32049</td>
<td></td>
</tr>
<tr>
<td>Estimated Irrigated Area</td>
<td>81444</td>
<td></td>
</tr>
<tr>
<td>ET ZONE FACTOR</td>
<td>Zone 2/MED</td>
<td>6.7</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Formula for Budget - Outside
(Irrigated Landscape * Highest ET factor for high season * 2 *0.8 adjustment factor*0.62333 conversion factor)/748 gallons per HCF/62 days

Formula for Budget - Inside
(number of occupants*55 gallons per day)/748

<table>
<thead>
<tr>
<th>Current Usage</th>
<th>26.26 HCF per DAY</th>
<th>1602 HCF for July - August</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH Season Budget, Round to closest HCF</td>
<td>14.53 HCF per DAY</td>
<td>886.5 HCF for July - August</td>
</tr>
<tr>
<td>81% OVER BUDGET</td>
<td></td>
<td></td>
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</table>
Working with our Customers

• Outreach
  – Notification Letter
  – Email Updates
  – Phone calls
  – Home visits
  – Conservation Plan
    • Techniques, devices, and rebates to reduce water use. Establish a reasonable timeline for results.
Working with our Customers

- Water Customer Conservation Plan
  - Water Use Analysis
  - Recommendations
    - Techniques, devices, and rebates to reduce water use.
    - Establish a reasonable timeline for results.

<table>
<thead>
<tr>
<th>Recommendations &amp; Required Actions:</th>
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<tbody>
<tr>
<td>Recommend a Weather Based Irrigation Controller: Even though the controller may not be changed on a regular basis, give you a daily adjustment on your watering needs, they also come with a rain sensor that will turn on automatically if there is a rain incident. Check controllers that would work best.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indoor*</th>
<th># of Devices</th>
<th>Efficient Y/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilets</td>
<td>12</td>
<td>Not known</td>
</tr>
<tr>
<td>Showerheads</td>
<td>9</td>
<td>Not known</td>
</tr>
<tr>
<td>Faucets</td>
<td>Unknown</td>
<td>Not known</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>Unknown</td>
<td>Y</td>
</tr>
<tr>
<td>Clothes Washer</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td>Jacuzzi</td>
<td>1</td>
<td>n/a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outdoor</th>
<th># of Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation Stations</td>
<td>man</td>
</tr>
<tr>
<td>Irrigation Controller</td>
<td>1</td>
</tr>
<tr>
<td>Sprinkler Heads</td>
<td>man</td>
</tr>
<tr>
<td>Drip Lines</td>
<td>1</td>
</tr>
<tr>
<td>Fountain</td>
<td>Yes</td>
</tr>
<tr>
<td>Swimming Pool</td>
<td>1</td>
</tr>
</tbody>
</table>
Compliance

- Implement Conservation Plan
- Monthly Meter Reads
- Make Improvements
- Meet Budget
- Ongoing Monitoring
Compliance

- Failure to Comply
  - Per Ordinance, Escalating Penalties

<table>
<thead>
<tr>
<th>Number of Consecutive Months with Violation</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
<th>Phase 5</th>
<th>Phase 6</th>
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</thead>
<tbody>
<tr>
<td>Violation during months 1-5</td>
<td>N/A</td>
<td>$1,000</td>
<td>$2,000</td>
<td>$5,000</td>
<td>$10,000</td>
<td>Board Authority</td>
</tr>
<tr>
<td>Violation during months 6-11</td>
<td>N/A</td>
<td>$2,000</td>
<td>$4,000</td>
<td>$10,000</td>
<td>$20,000</td>
<td>Board Authority</td>
</tr>
<tr>
<td>Violation during months 12-17</td>
<td>N/A</td>
<td>$3,000</td>
<td>$6,000</td>
<td>$15,000</td>
<td>$30,000</td>
<td>Board Authority</td>
</tr>
<tr>
<td>Violation during months 18-23</td>
<td>N/A</td>
<td>$4,000</td>
<td>$8,000</td>
<td>$20,000</td>
<td>$40,000</td>
<td>Board Authority</td>
</tr>
</tbody>
</table>
Our Results

• Customer Responses
• Techniques Implemented
• Water Saved
• $ Saved for Customer
Water Use is Down

Unreasonable Water Use Totals

Consumption is down 21% through August as compared to last year. (3,711,015 gallons)
Projected 6,061,979 gallons for the year from only 5 customers!