This presentation premiered at WaterSmart Innovations

watersmartinnovations.com
ACTIVE EMAILS
RAINING IN SAVINGS
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WATERSMART INNOVATIONS | 2019
PRESENTATION AGENDA

• IRWD Service Area
• Project Background
• Project Approach
• Water Savings Results
• Wading Through Options
• Working through Challenges
• Discussion
IRWD: DELIVERING QUALITY WATER SINCE 1961

- 181 square miles
- 20% of Orange County
- 599,000 Daytime population
- 422,000 Residents served

Six cities served:
- Irvine
- Lake Forest
- Newport Beach
- Tustin
- Costa Mesa
- Orange
- Unincorporated Orange County
REDUCING DEPENDENCE ON IMPORTED WATER

1990
Population served: 114,000
Water provided: 70,000 AF

- 66% Imported water
- 11% Clear groundwater
- 14% Recycled water
- 9% Local surface water

2018
Population served: 403,000
Water provided: 94,381 AF

- 29% Imported water
- 26% Clear groundwater
- 18% Recycled water
- 21% Local surface water
- 6% Treated groundwater
## RESIDENTIAL BUDGET-BASED RATES (2019-2020)

<table>
<thead>
<tr>
<th>Rate tier</th>
<th>Monthly water budget use</th>
<th>Rate/CCF</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Low volume</td>
<td>Up to 40%</td>
<td>$1.47</td>
<td>Within budget</td>
</tr>
<tr>
<td>2 - Base rate</td>
<td>41% to 100%</td>
<td>$2.00</td>
<td>Within budget</td>
</tr>
<tr>
<td>3 - Inefficient</td>
<td>101% to 140%</td>
<td>$4.86</td>
<td>Over budget</td>
</tr>
<tr>
<td>4 - Wasteful</td>
<td>141% and over</td>
<td>$13.63</td>
<td>Over budget</td>
</tr>
</tbody>
</table>

**Typical residential customer bill example:**

- **Customer uses 12 CCF**  
  Total bill = $55.20
- **Customer uses 20 CCF**  
  Total bill = $120.39

Total bill includes water cost, water service charge and sewer service charge.

Monthly water budget provides 100% of water needs for indoor and outdoor.
SINGLE-FAMILY DETACHED HOME BUDGET

Four people indoor

Outdoor

Irrigated area / seasonal needs

ET (evapotranspiration) adjustment:
  • Plant material
  • Irrigation system efficiency

Indoor budget

\[ \text{People per household} \times 50 \text{ gallons per person} \times \frac{\text{# of days in the billing cycle}}{748} \]

Outdoor budget

\[ \text{Irrigated landscape area} \times \text{Evapotranspiration} \times 0.75 \times 36.3 \]

Variances available: Extra occupants, medical, livestock, etc.
PROJECT BACKGROUND
EARLY SEASONAL RAIN, IRRIGATION TIMERS
AN EARLY RAIN SEASON

October 2018-May 2019 Rainfall and Reference Evapotranspiration
A CHANCE OF RAIN

Single Family Residential Customers
- Over 60,000 connections

Single family weather based irrigation timers installed
- FY 12-13 through FY 18-19
- Over 2,500 WBIC installed and received a rebate
- Results: Over 7,500 Acre feet of savings

What about the single family residential connections that have a conventional irrigation timer?

Have these customers signed up for the monthly California Sprinkler Adjustment Notification System (CSANS)?
PROJECT APPROACH
WHAT WILL THE RAIN BRING?
STEPS TO SUCCESS

RECOGNIZE A CHANCE OF RAIN

ACTIVE EMAIL OUTREACH

CUSTOMER REACTION

RAIN ...AND REPEAT
RECOGNIZE A CHANCE OF RAIN

Probability of Precipitation
• PoP=Confidence * Area
• PoP forecasts above 60%

Forecasting Websites:
• National Weather Service, National Oceanic and Atmospheric Administration
• Long range forecasts vs. short range forecasts
ACTIVE EMAIL OUTREACH

Six separate rain event emails:
• November 28\textsuperscript{th}: 1-2 inches
• December 4\textsuperscript{th}: 1-2 inches
• January 9\textsuperscript{th}: 2-3 inches
• January 30\textsuperscript{th}: 3-5 inches
• February 11\textsuperscript{th}: 5-8 inches
• March 5\textsuperscript{th}: 5-8 inches
### ACTIVE EMAIL OUTREACH RESULTS

<table>
<thead>
<tr>
<th>WAVE</th>
<th>NUMBER OF CUSTOMERS THAT RECEIVED AN EMAIL</th>
<th>NUMBER OF CUSTOMERS THAT OPENED EMAIL</th>
<th>NUMBER OF CUSTOMERS THAT OPENED &amp; CLICKED EMAIL</th>
<th>NUMBER OF CUSTOMERS THAT OPENED THE EMAIL FOR THE FIRST TIME</th>
<th>PERCENTAGE OF CUSTOMERS THAT OPENED THE EMAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOV 28: 1ST</td>
<td>17,148</td>
<td>7,810</td>
<td>121</td>
<td>7,810</td>
<td>45.5</td>
</tr>
<tr>
<td>DEC 4: 2ND</td>
<td>17,148</td>
<td>6,140</td>
<td>47</td>
<td>1,486</td>
<td>35.8</td>
</tr>
<tr>
<td>JAN 9: 3RD</td>
<td>17,148</td>
<td>7,653</td>
<td>45</td>
<td>1,644</td>
<td>44.6</td>
</tr>
<tr>
<td>JAN 30: 4TH</td>
<td>17,148</td>
<td>7,063</td>
<td>51</td>
<td>752</td>
<td>41.2</td>
</tr>
<tr>
<td>FEB 11: 5TH</td>
<td>17,148</td>
<td>7,276</td>
<td>70</td>
<td>656</td>
<td>42.4</td>
</tr>
<tr>
<td>MARCH 5: 6TH</td>
<td>17,148</td>
<td>7,621</td>
<td>111</td>
<td>572</td>
<td>44.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>102,888</td>
<td>43,563</td>
<td>445</td>
<td>12,920</td>
<td>42.3</td>
</tr>
</tbody>
</table>

**Open Rate Results**
- Customer Opened the Email
- Open Rates at 42%

**Click Rate Results**
- Customer clicked on a link in the Opened Email
- Click Counts at 0.3%

**Government Agency 2019 Avg. = 20%**

**Government Agency 2019 Avg. = 3%**
CUSTOMER REACTION

• **NEWS alert** subject lines
• Full week forecasts
• Pools, fountains, surface water
Subject: Yvette, we have another rainy week ahead!

Dear Yvette,

The Irvine Ranch Water District service area is projected to have TWO DAYS OF RAIN and more.

This is a reminder to turn your sprinkler timers to the OFF position today!
If you have a pool fill timer, turn it OFF too!

IRWD suggests to turn your timers back to the ON/AUTO position 24-48 hours after all rain events have passed.

See how your water usage compares during past rain events and Update your profile.

Thanks for caring about your water use,
The Water Efficiency Team
Irvine Ranch Water District

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Dear Masoumeh,

The Irvine Ranch Water District service area is projected to have TWO DAYS OF RAIN and more!

This is a reminder to turn your sprinkler timers to the OFF position today!
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See how your water usage compares during past rain events and Update your profile.

As the months change, be sure to adjust your irrigation times and use your timers percentage option for a quick adjustment. Here is your reference sheet:

<table>
<thead>
<tr>
<th>Month</th>
<th>Turf Type</th>
<th>Drought-tolerant type</th>
<th>% of Discoloration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>3 days, 2 cycles of 2 minutes</td>
<td>1 day, 2 cycles of 3 minutes</td>
<td>10%</td>
</tr>
<tr>
<td>February</td>
<td>3 days, 2 cycles of 2 minutes</td>
<td>1 day, 2 cycles of 3 minutes</td>
<td>10%</td>
</tr>
<tr>
<td>March</td>
<td>3 days, 2 cycles of 3 minutes</td>
<td>2 days, 2 cycles of 3 minutes</td>
<td>20%</td>
</tr>
<tr>
<td>April</td>
<td>3 days, 2 cycles of 4 minutes</td>
<td>2 days, 2 cycles of 4 minutes</td>
<td>20%</td>
</tr>
<tr>
<td>May</td>
<td>3 days, 3 cycles of 3 minutes</td>
<td>2 days, 3 cycles of 3 minutes</td>
<td>30%</td>
</tr>
<tr>
<td>June</td>
<td>3 days, 3 cycles of 4 minutes</td>
<td>2 days, 3 cycles of 4 minutes</td>
<td>30%</td>
</tr>
<tr>
<td>July</td>
<td>4 days, 3 cycles of 3 minutes</td>
<td>2 days, 4 cycles of 3 minutes</td>
<td>50%</td>
</tr>
<tr>
<td>August</td>
<td>4 days, 3 cycles of 4 minutes</td>
<td>2 days, 4 cycles of 4 minutes</td>
<td>50%</td>
</tr>
<tr>
<td>September</td>
<td>4 days, 2 cycles of 3 minutes</td>
<td>1 day, 2 cycles of 3 minutes</td>
<td>20%</td>
</tr>
<tr>
<td>October</td>
<td>4 days, 2 cycles of 4 minutes</td>
<td>1 day, 2 cycles of 4 minutes</td>
<td>20%</td>
</tr>
<tr>
<td>November</td>
<td>2 days, 2 cycles of 3 minutes</td>
<td>1 day, 2 cycles of 3 minutes</td>
<td>10%</td>
</tr>
</tbody>
</table>

* In September, plants’ water needs drop by approximately 20 percent vs. May temperatures in hardscape, because the days are shorter, an evaporation decreases. July plants are exposed to a dormant phase where the need less water in some years. Hydrolysis reduces the amount of water needed as it dries the root system. This reduces the amount of water needed and the need for irrigation.

** The % above, set with a button in a dial shows the watering run time for all irrigation zones valves was managed for an automatic control for better performance or droughts without any adjustment of the base rate.

Thanks for caring about your water use,
The Water Efficiency Team
Irvine Ranch Water District
RAIN ...and REPEAT

Thank you for this reminder ...I did turn off those things two days ago in anticipation.

-Jerry

Thank you for sending these reminders out. It is very helpful

Also Thank you for the watering settings for year round watering

-Bob

Thank You! It bugs me when my neighbors and city sprinklers are going in the rain. I’m glad you’re sending emails like this!!

-Dave

Nice salutation. Doesn’t seem to match my name in the subject.

-Mike

These emails are great forecasts and reminders to turn off our sprinklers.
Thank you for sending them.

-Dave

IRWD - pound sand. Hey is the drought over??

-Mark
WATER SAVINGS RESULTS
STUDY GROUP, CONTROL, TREATMENT, DIFFERENCE IN DIFFERENCES
STUDY GROUP DESCRIPTION

Customers
• Single family residential homes
• Accounts have been active since January 2016

Wet Year Comparison
• November 2016 through March 2017 vs. November 2018 through March 2019
TREATMENT AND CONTROL DESCRIPTION

Control Group
- Customer did not receive a rain alert email

Reasoning:
- A customer email was not active (incorrect, bounced, not available)
- A customer was part of a previously established control group

Treatment Group
- Customer received a rain alert email
- Customer opened the first wave and the second wave of rain alert emails
DIFFERENCE-IN-DIFFERENCES COMPARISON

DID
• Data analyzed using the difference-in-differences (DID) technique
• Comparing the water usage from December 2016 through March 2017 vs. December 2018 through March 2019
• Comparing Control Group Water Usage with the Treatment Group Water Usage

Treatment Group
• Customer received a rain alert email
• Customer opened the first wave and the second wave of rain alert emails
Reference Evapotranspiration vs Rainfall and Control vs. Treatment Water Usage for Jan 2015-October 2019
DIFFERENCE-IN-DIFFERENCES RESULTS

Control vs Treatment Group totals:
- Control Group: 17,016 customers
- Treatment Group: 4,654 customers

DID totals:
- Estimated savings: -0.00406
- Standard Error: 0.0012
- Statistical Significance: 99%

Savings Terms:
- Conversion: 91.16 gallons per home/month
- 1.3 Acre feet/month for Treatment Group

District Wide Potential
- 16.7 Acre feet of savings/month for 60,000 SFR

16.7 Acre Feet of savings per month for the cost of sending two emails.
WADING THROUGH OPTIONS
SAAS, EMAIL MARKETING
EMAIL MARKETING PLATFORMS OR SAAS

WatersSmart

Sendinblue

AIQUEOUS

Benchmark

MailerLite

Dropcountr

OuatraX

ConvertKit

SEW

Constant Contact

Fathom

ActiveCampaign

GetResponse

Mailchimp

Irvine Ranch

WATER DISTRICT
WORKING THROUGH CHALLENGES
OVERCOMING HURDLES

Why Does Email Bounce?
Discussion

Contact:
Joseph Baquerizo
baqueriz@irwd.com
949-453-5409

Additional Resources:
• campaignmonitor.com/resources/guides/email-marketing-benchmarks/