

This presentation premiered at WaterSmart Innovations

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Irvine Ranch
WATER DISTRICT



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

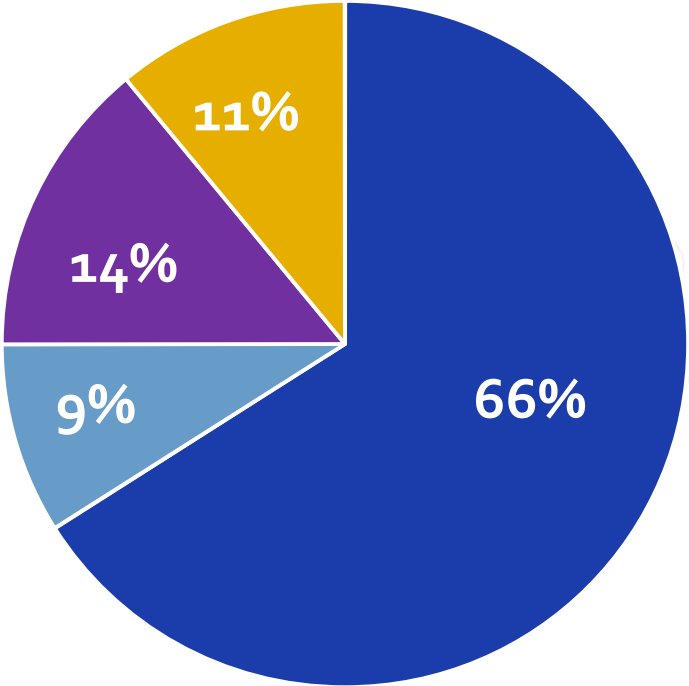
Unincorporated Orange County

REDUCING DEPENDENCE ON IMPORTED WATER

1990

Population served: 114,000

Water provided: 70,000 AF

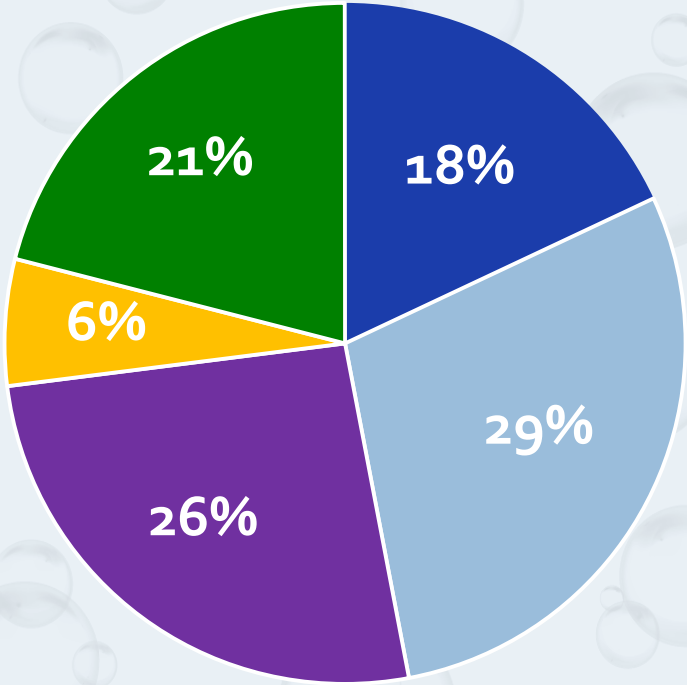


- Imported water
- Clear groundwater
- Recycled water
- Local surface water

2018

Population served: 403,000

Water provided: 94,381 AF



- Imported water
- Clear groundwater
- Recycled water
- Local surface water
- Treated groundwater

RESIDENTIAL BUDGET-BASED RATES (2019-2020)

| Rate tier | Monthly water budget use | Rate/CCF | Result |
|-----------------|--------------------------|----------|---------------|
| 1 - Low volume | Up to 40% | \$1.47 | Within budget |
| 2 - Base rate | 41% to 100% | \$2.00 | |
| 3 - Inefficient | 101% to 140% | \$4.86 | Over budget |
| 4 - Wasteful | 141% and over | \$13.63 | |

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



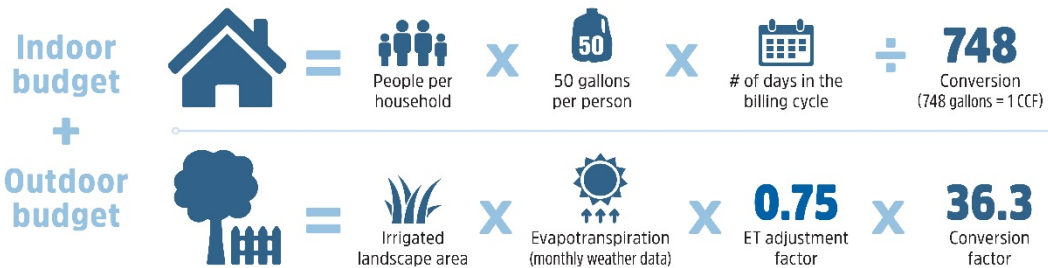
Four people indoor

+ Outdoor

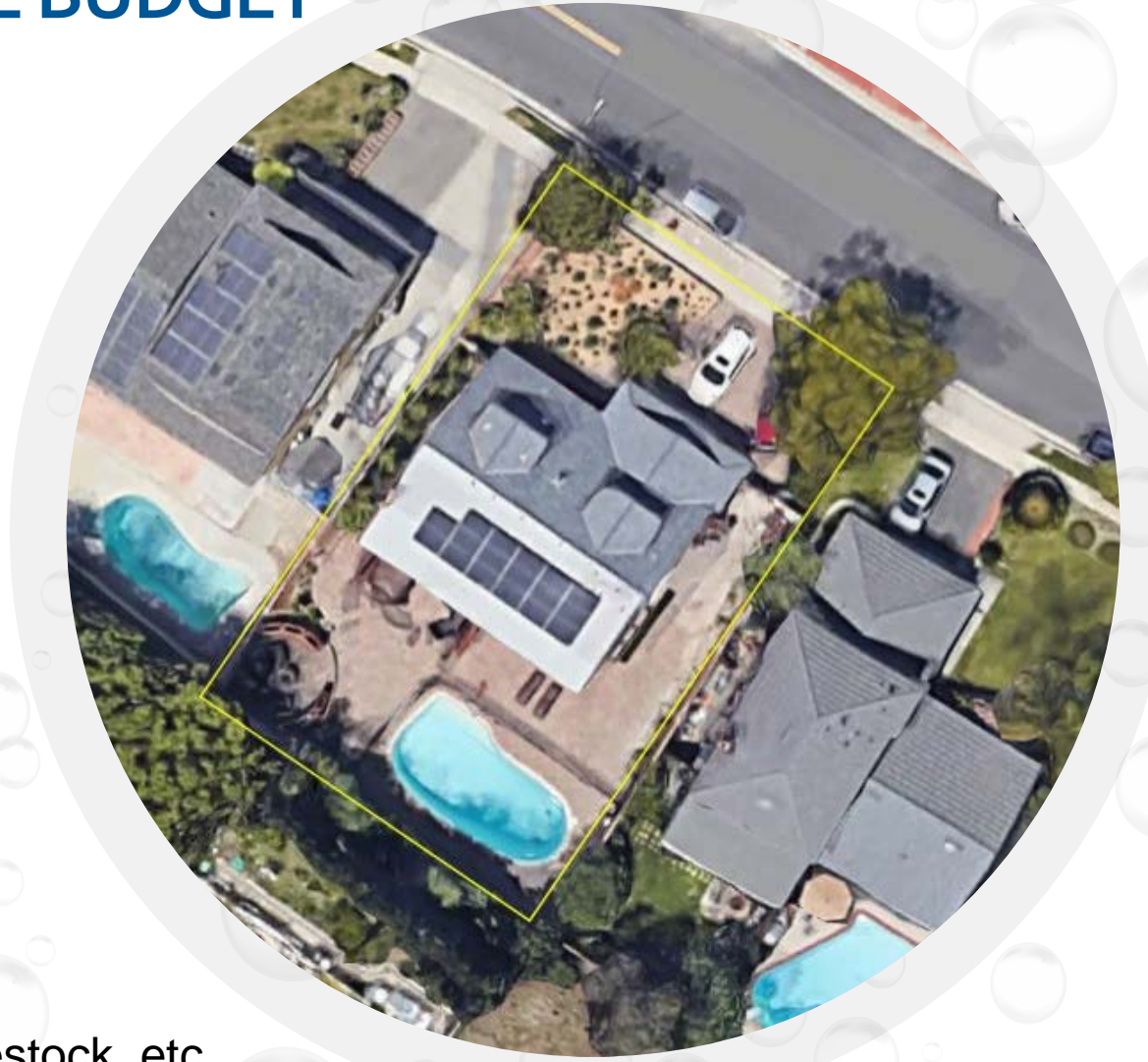
Irrigated area / seasonal needs

ET (evapotranspiration) adjustment:

- Plant material
- Irrigation system efficiency



Variances available: Extra occupants, medical, livestock, etc.





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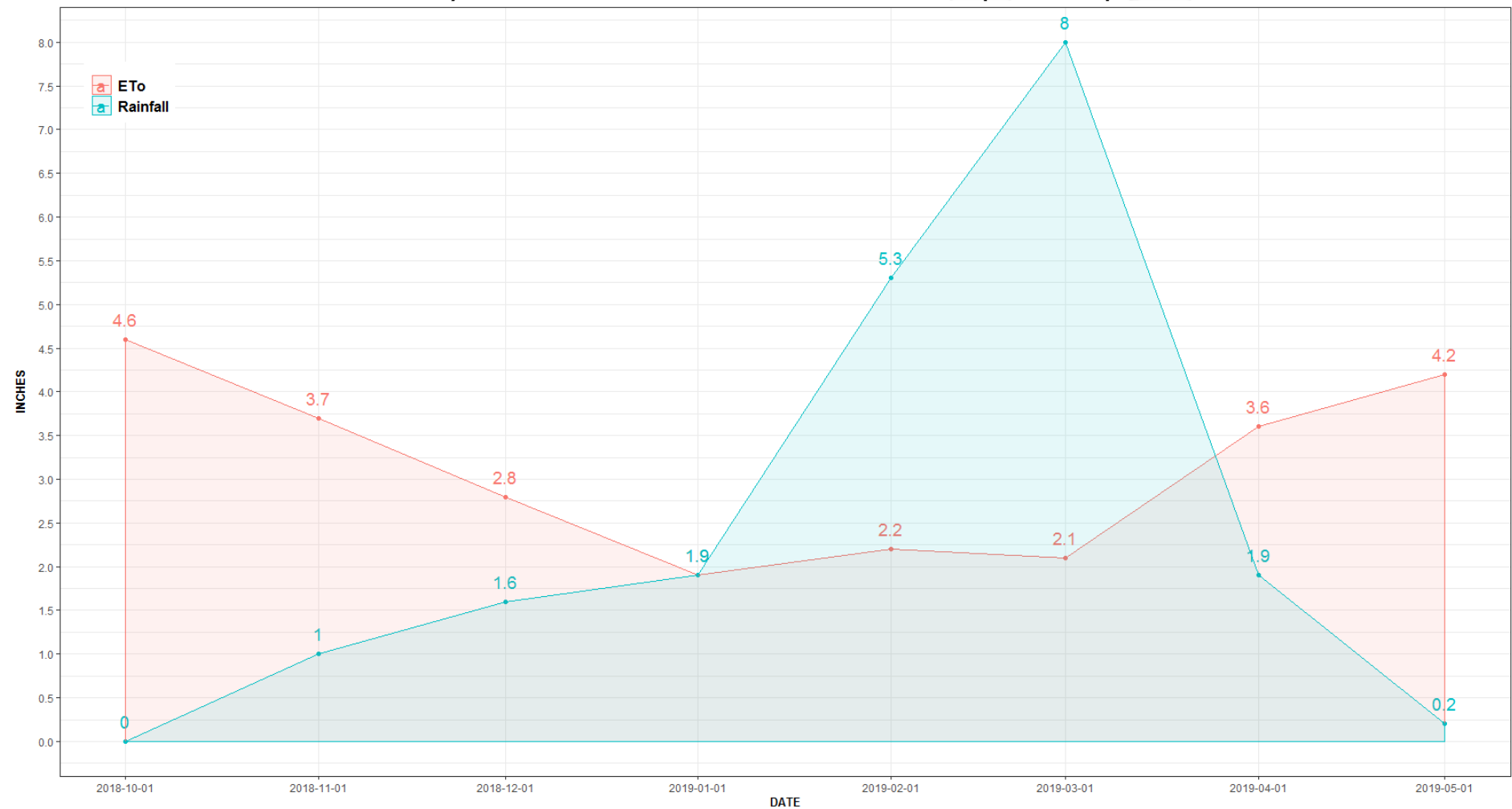


PROJECT BACKGROUND

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)?





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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

- $PoP = \text{Confidence} * \text{Area}$
- 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 28th: 1-2 inches
- December 4th: 1-2 inches
- January 9th: 2-3 inches
- January 30th: 3-5 inches
- February 11th: 5-8 inches
- March 5th : 5-8 inches



ACTIVE EMAIL OUTREACH RESULTS

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

Open Rate Results

- Customer Opened the Email
- Open Rates at 42%

Government Agency 2019 Avg. = 20%

Click Rate Results

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

Government Agency 2019 Avg. = 3%

CUSTOMER REACTION

- **NEWS alert** subject lines
- Full week forecasts
- Pools, fountains, surface water



INFORM TO BUILD RAPPORT

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

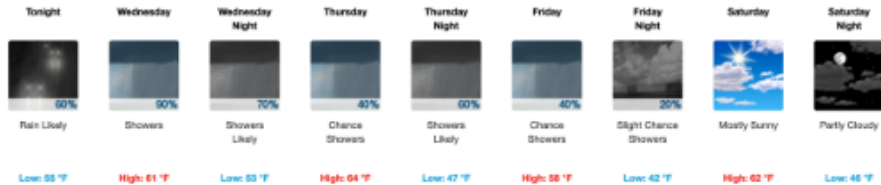
This email was sent to test-inbox@watersmart.com from Irvine Ranch Water District and refers to account 0583110000 with service at 37 Rue Monet.

Change your [communication preferences](#) or [unsubscribe](#).



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!
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](#).

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

| Month | Turfgrass | Drought tolerant trees, shrubs & groundcover | % Option** |
|------------|-------------------------------|--|------------|
| January | 2 days, 2 cycles of 2 minutes | 1 day, 2 cycles of 3 minutes | 30% |
| February | 2 days, 2 cycles of 2 minutes | 1 day, 2 cycles of 3 minutes | 30% |
| March | 3 days, 2 cycles of 3 minutes | 2 days, 2 cycles of 3 minutes | 50% |
| April | 3 days, 2 cycles of 4 minutes | 2 days, 2 cycles of 4 minutes | 70% |
| May | 3 days, 3 cycles of 3 minutes | 2 days, 3 cycles of 3 minutes | 80% |
| June | 3 days, 2 cycles of 5 minutes | 2 days, 3 cycles of 3 minutes | 90% |
| July | 4 days, 3 cycles of 3 minutes | 2 days, 3 cycles of 4 minutes | 100% |
| August | 4 days, 3 cycles of 3 minutes | 2 days, 3 cycles of 4 minutes | 100% |
| September* | 4 days, 2 cycles of 3 minutes | 2 days, 2 cycles of 4 minutes | 70% |
| October* | 3 days, 2 cycles of 3 minutes | 2 days, 2 cycles of 3 minutes | 50% |
| November* | 2 days, 2 cycles of 3 minutes | 1 day, 2 cycles of 4 minutes | 40% |
| December | 2 days, 2 cycles of 2 minutes | 1 day, 2 cycles of 3 minutes | 30% |

* In September, plants' water needs drop by approximately 30 percent even if the temperature is hotter, because the days are shorter, so evaporation decreases. Also plants are entering a dormant phase where they need less water. In some years, humidity is also higher, increasing your level of discomfort, but decreasing plants' water needs as it slows the rate of evaporation. This rapid drop in water needs will continue in October and November.

**The % option, set with either a button or a dial, permits the watering run times for all irrigation system valves managed by an electronic controller to be increased or decreased with just one adjustment by percentage.

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

These emails are great forecasts and reminders to turn off our sprinklers.

Thank you for sending them.

-Dave

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

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

-Mark





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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

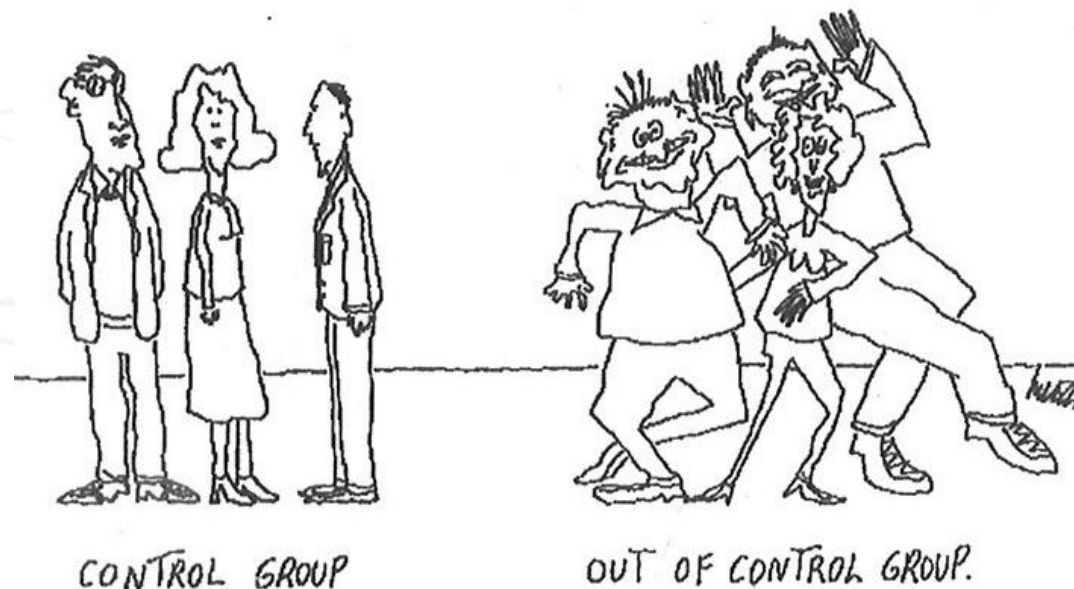
- Customer did not receive a rain alert email

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



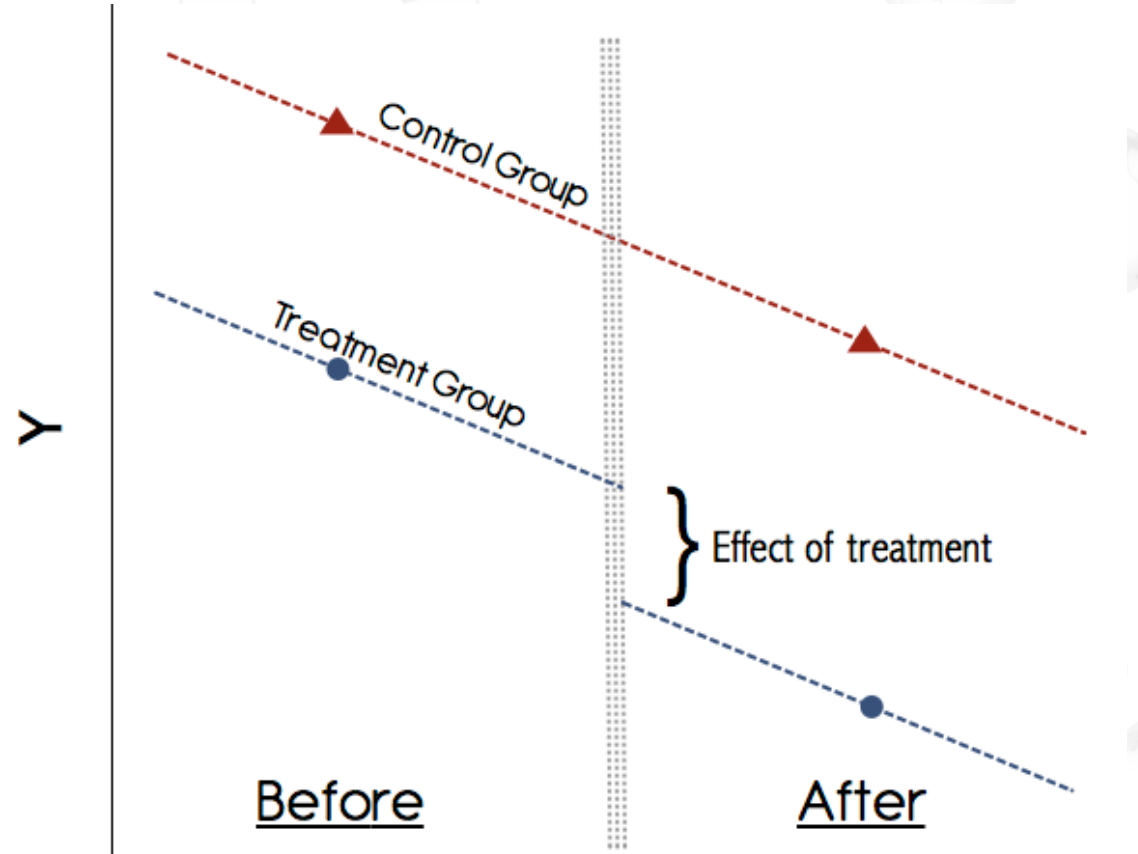
DIFFERENCE-IN-DIFFERENCES COMPARISON

DID

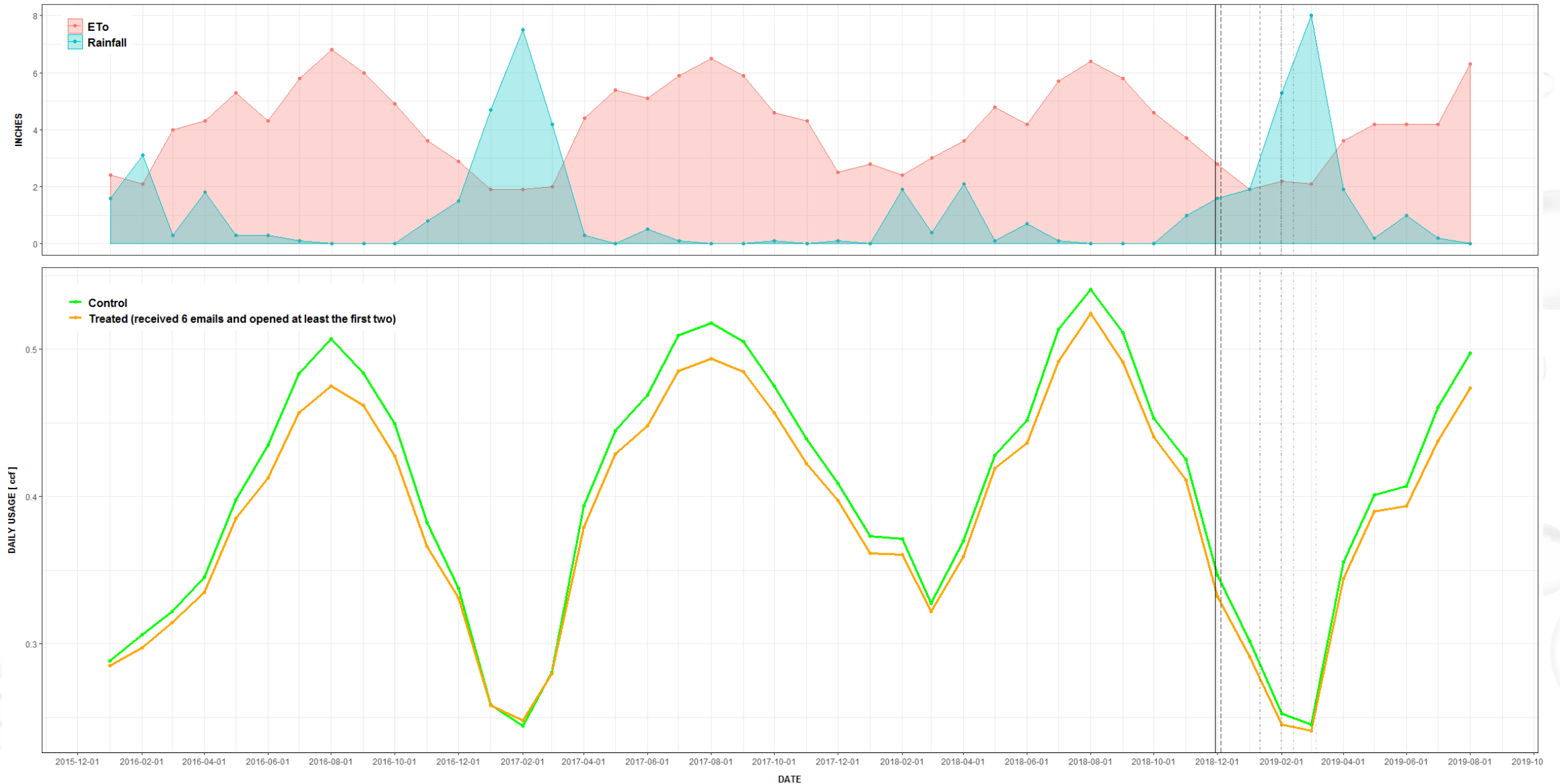
- Data analyzed using the difference-in-differences (DID) technique
- Comparing the water usage from December 2016 through March 2017 **vs.** December 2018 through March 2019
- Comparing Control Group Water Usage with the Treatment Group Water Usage

Treatment Group

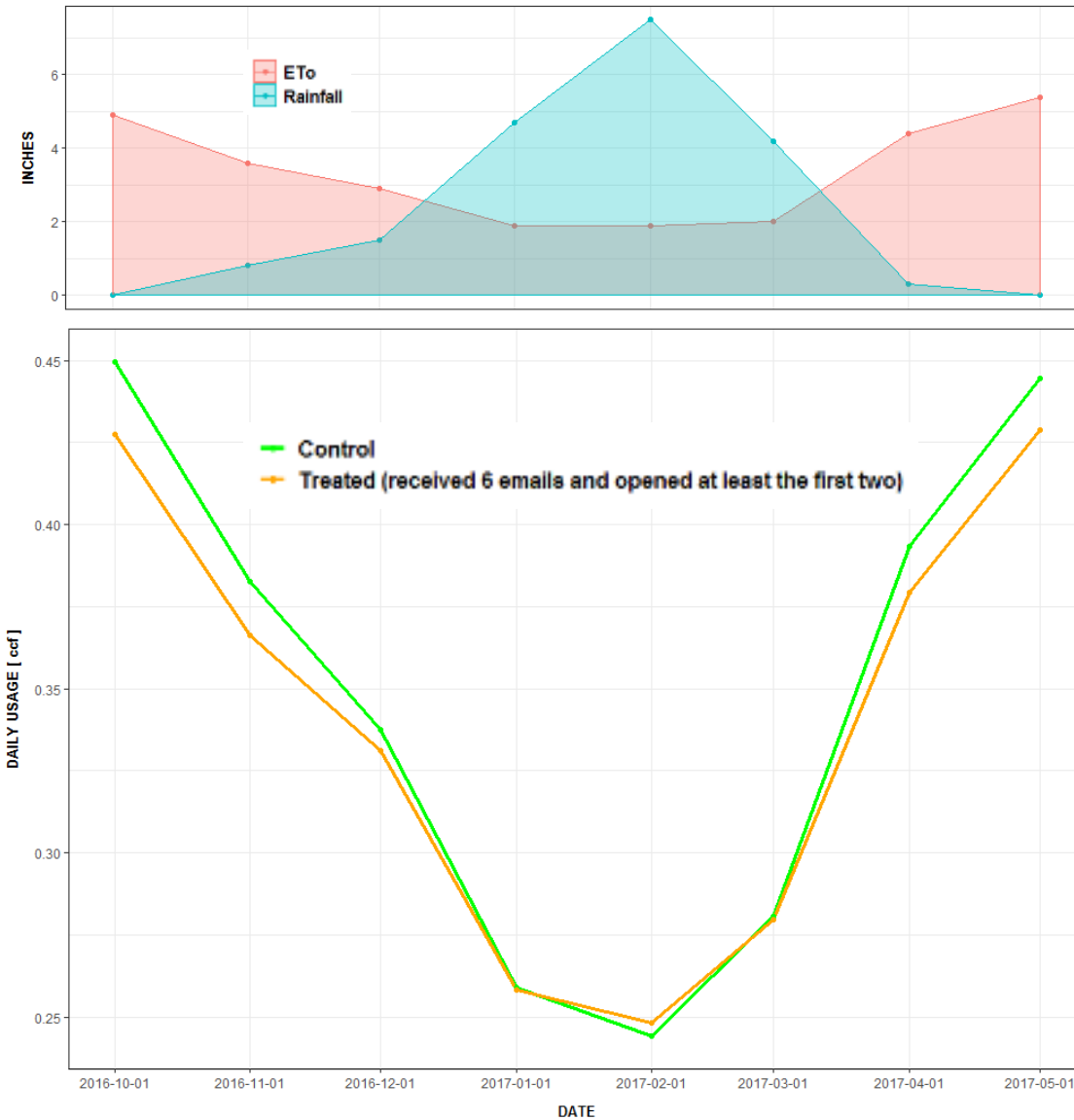
- Customer received a rain alert email
- Customer opened the first wave and the second wave of rain alert emails



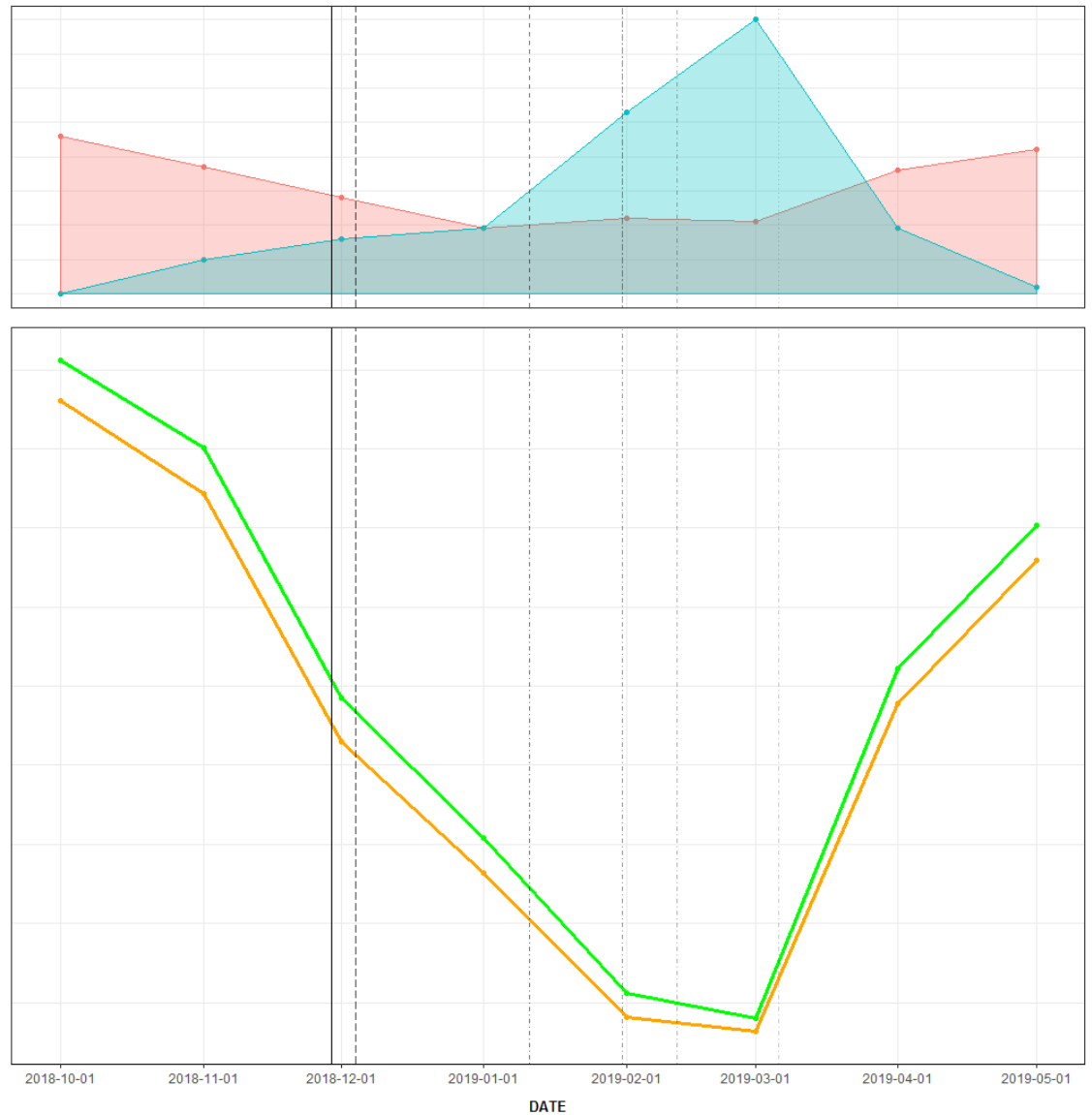
Reference Evapotranspiration vs Rainfall and Control vs. Treatment Water Usage for Jan 2015-October 2019



Magnified for October 2016 - May 2017



Magnified for October 2018 - May 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.



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WADING THROUGH OPTIONS

SAAS, EMAIL MARKETING

EMAIL MARKETING PLATFORMS OR SAAS





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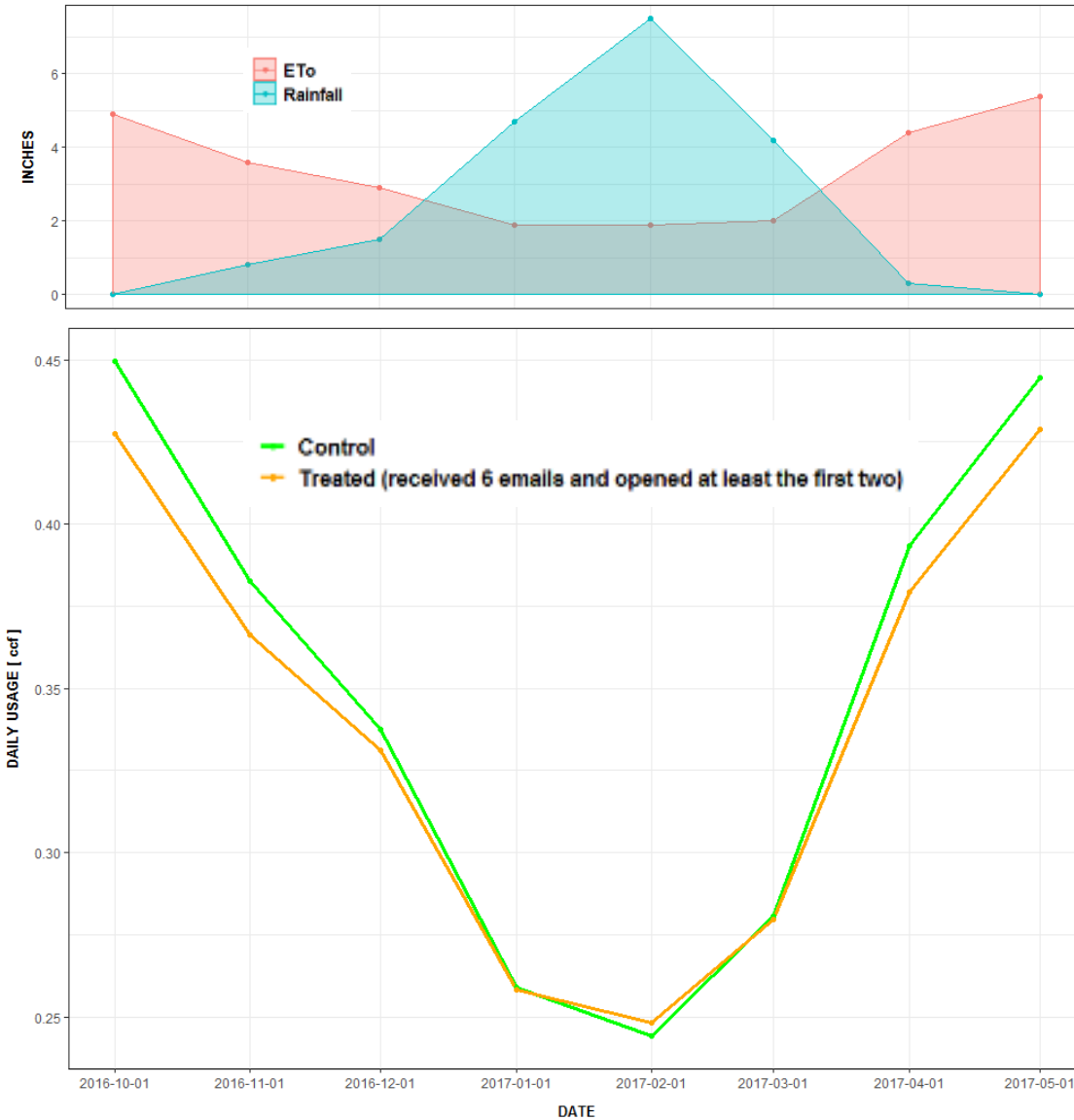


WORKING THROUGH CHALLENGES

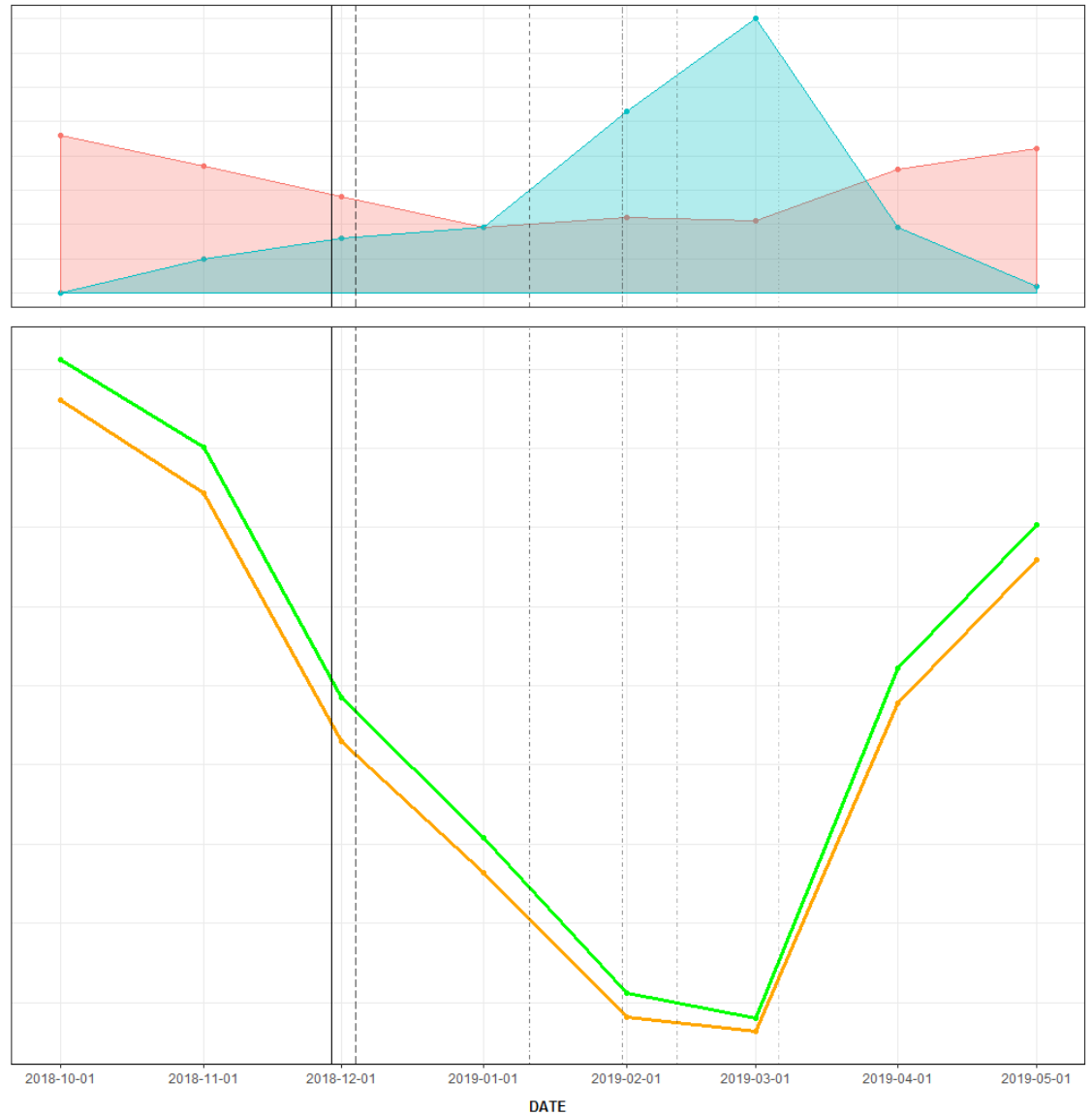
OVERCOMING HURDLES



Magnified for October 2016 - May 2017



Magnified for October 2018 - May 2019



Discussion

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

Additional Resources:

- campaignmonitor.com/resources/guides/email-marketing-benchmarks/

