



Welcome! We Will Begin Shortly.

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- Please type questions in chat window for help.
- If you cannot hear the audio through the computer, you can listen in by calling:

Microsoft Teams [Need help?](#)

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- **Questions**

- There will be a discussion/Q&A session at the end of the presentation.
- Submit questions to the organizer and panelists via the chat window

- **Presentation Slides & Recording**

- Presentation slides will be sent to all participants.
- This session will be recorded.

- **Notes**

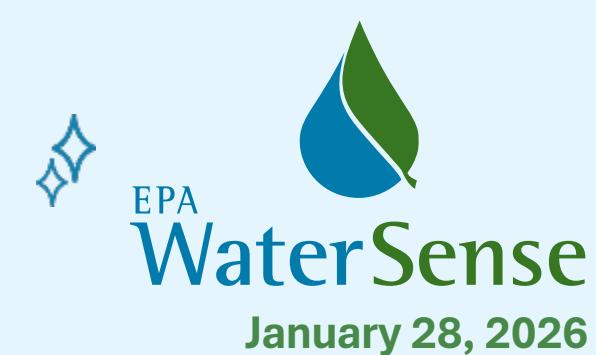
- To improve audio quality, all attendees are muted upon entry.

Leveraging Advanced Metering Infrastructure (AMI) Data and Boosting Customer Enrollment

Kersey Manliclic, EPA WaterSense

Tim Collie, Elsinore Valley Municipal Water District

Drew Beckwith, City of Westminster, Colorado





Elsinore Valley Municipal Water District's District Metered Areas

**Leveraging Advanced Metering Infrastructure
(AMI) Data and Boosting Customer Enrollment**

What is AMI: (Advanced Metering Infrastructure)

- **AMI** is a modern system of smart meters, communication networks and data management tools that enables utilities to automatically collect, transmit and analyze water usage data in near real-time. Unlike traditional meters that require manual reading, AMI systems use sensors and radio transmitters to capture detailed consumption metrics:
- The system integrates with platforms like AquaHawk, allowing customers to monitor their usage, receive alerts for continuous flow or leaks, and make informed decisions about water efficiency.



EVMWD AMI System Data

- Collects 1.2 million records everyday or 400 million per year
- Customer Portal – AquaHawk
 - Free to all customers
 - Alerts
 - Leaks
 - Bill ranges (> \$\$\$ or Units per day)
 - Negative usage (found numerous in the last 3 months)
 - 1 cross-connection (well)
 - Interpret customer usage habits



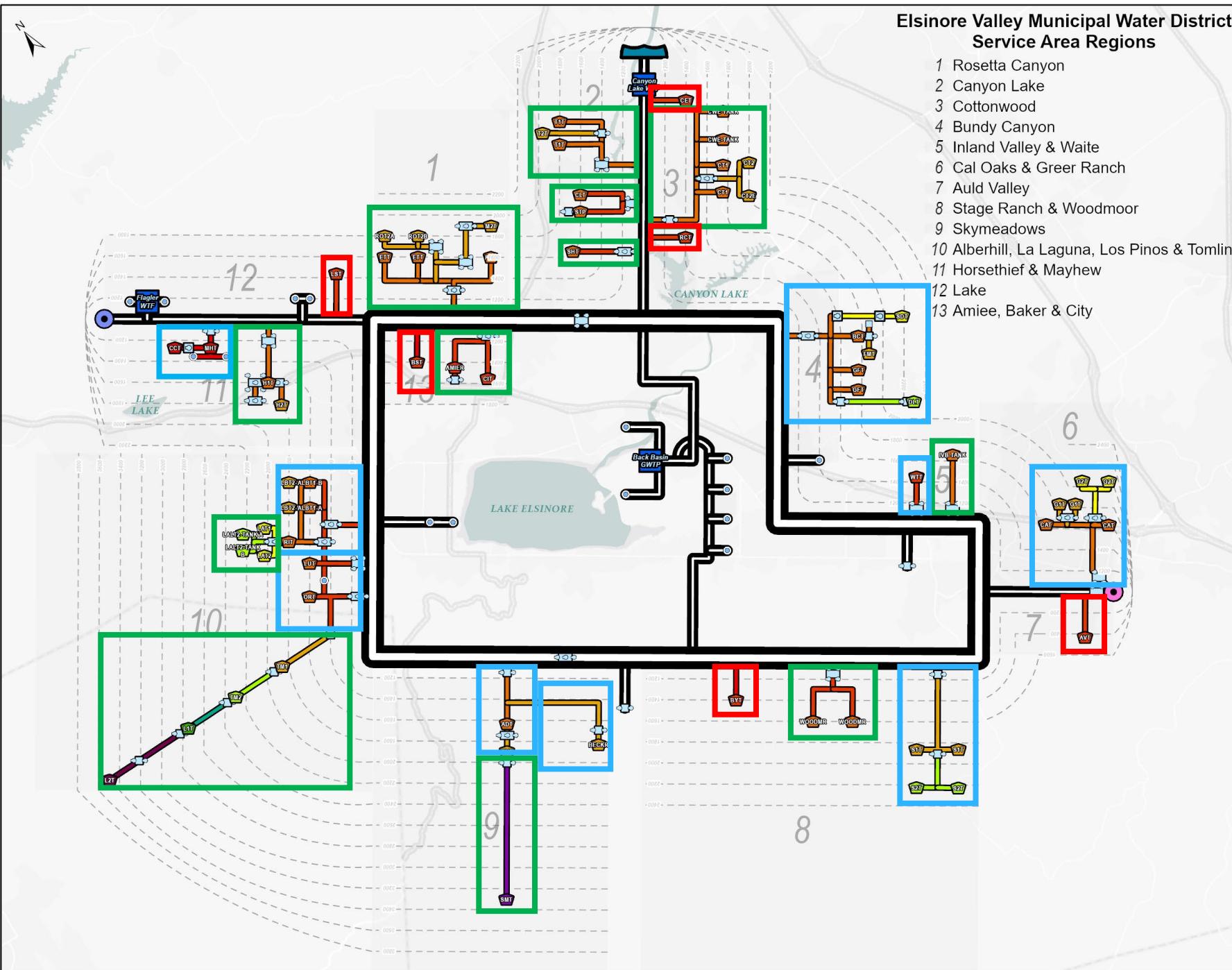
2015 to 2017 EVMWD Implemented AMI

- AMR system from 2002, was at end of life
- District Objectives
 - Several brands of meters (Currently using Neptune, Badger & Sensus)
 - Open to other brands that work with our AMI system (meter agnostic)
 - Customer portal
 - Leak detection
- AMI Radios were installed by a third-party vendor (45,000)
- 69 AMI Data Collection Units (DCU)



Elsinore Valley Municipal Water District
Service Area Regions

- 1 Rosetta Canyon
- 2 Canyon Lake
- 3 Cottonwood
- 4 Bundy Canyon
- 5 Inland Valley & Waite
- 6 Cal Oaks & Greer Ranch
- 7 Auld Valley
- 8 Stage Ranch & Woodmoor
- 9 Skymeadows
- 10 Alberhill, La Laguna, Los Pinos & Tomlin
- 11 Horsethief & Mayhew
- 12 Lake
- 13 Amiee, Baker & City



GIS Dashboard



Power Bi Dashboard

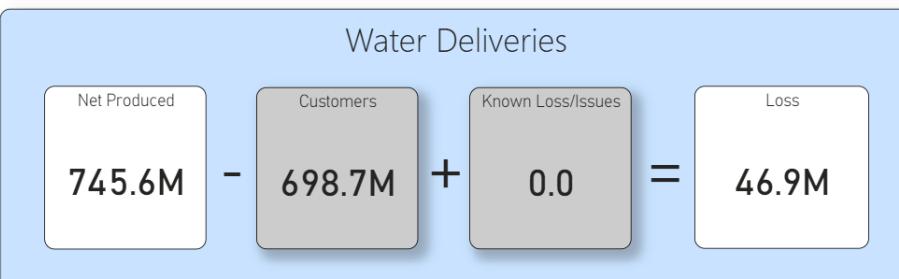
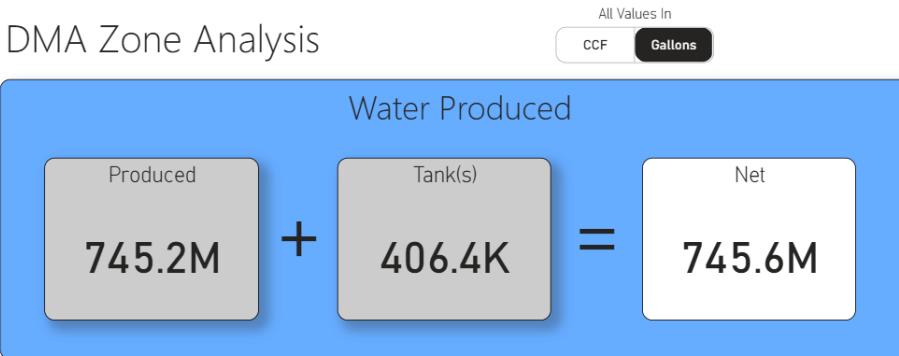


Where did our water go?

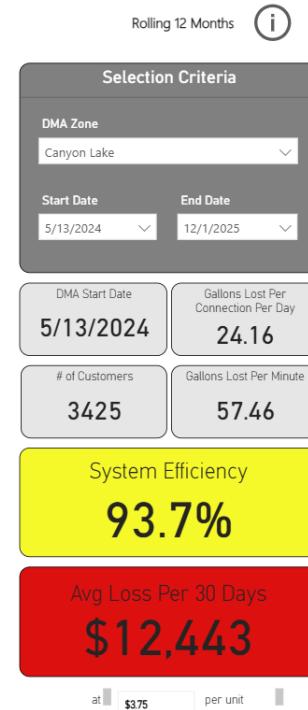
~3400 meters, 42% over 20 yrs old

~3700 meter, 19% over 20 yrs old

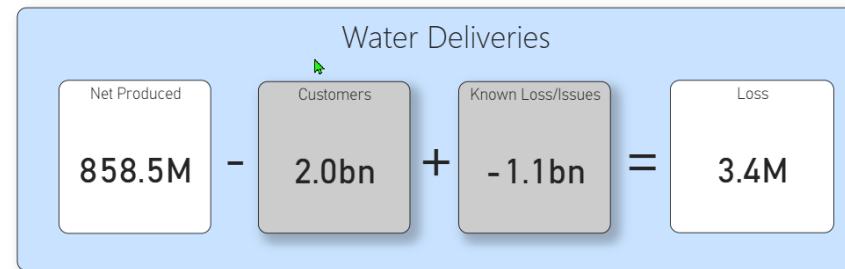
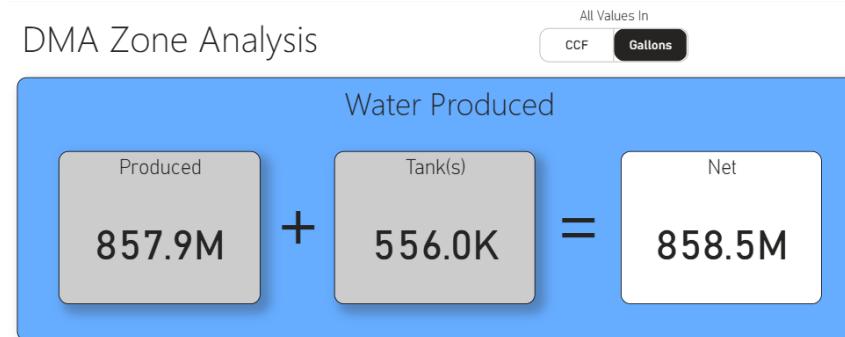
DMA Zone Analysis



** Right-click on "Produced", "Tank(s)", "Customers", or "Known Loss/Issues" to Drill-Through to detailed information for further analysis. **

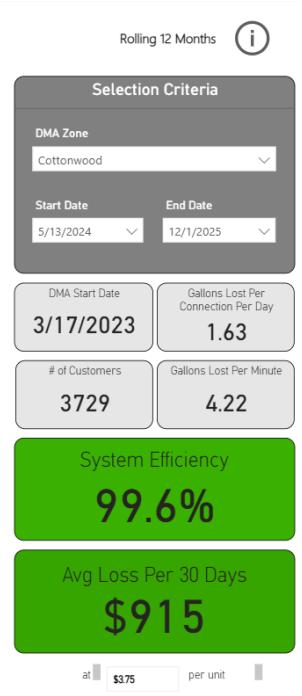


DMA Zone Analysis



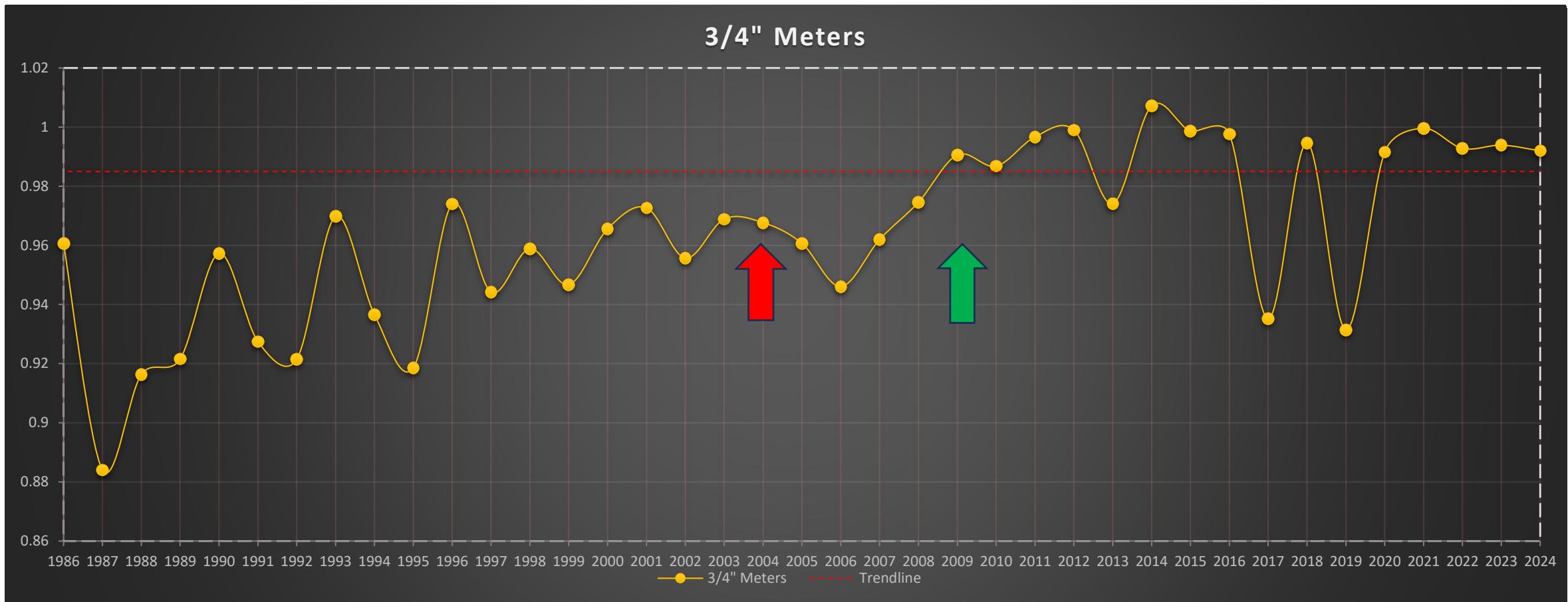
** Right-click on "Produced", "Tank(s)", "Customers", or "Known Loss/Issues" to Drill-Through to detailed information for further analysis. **

at \$3.75 per unit

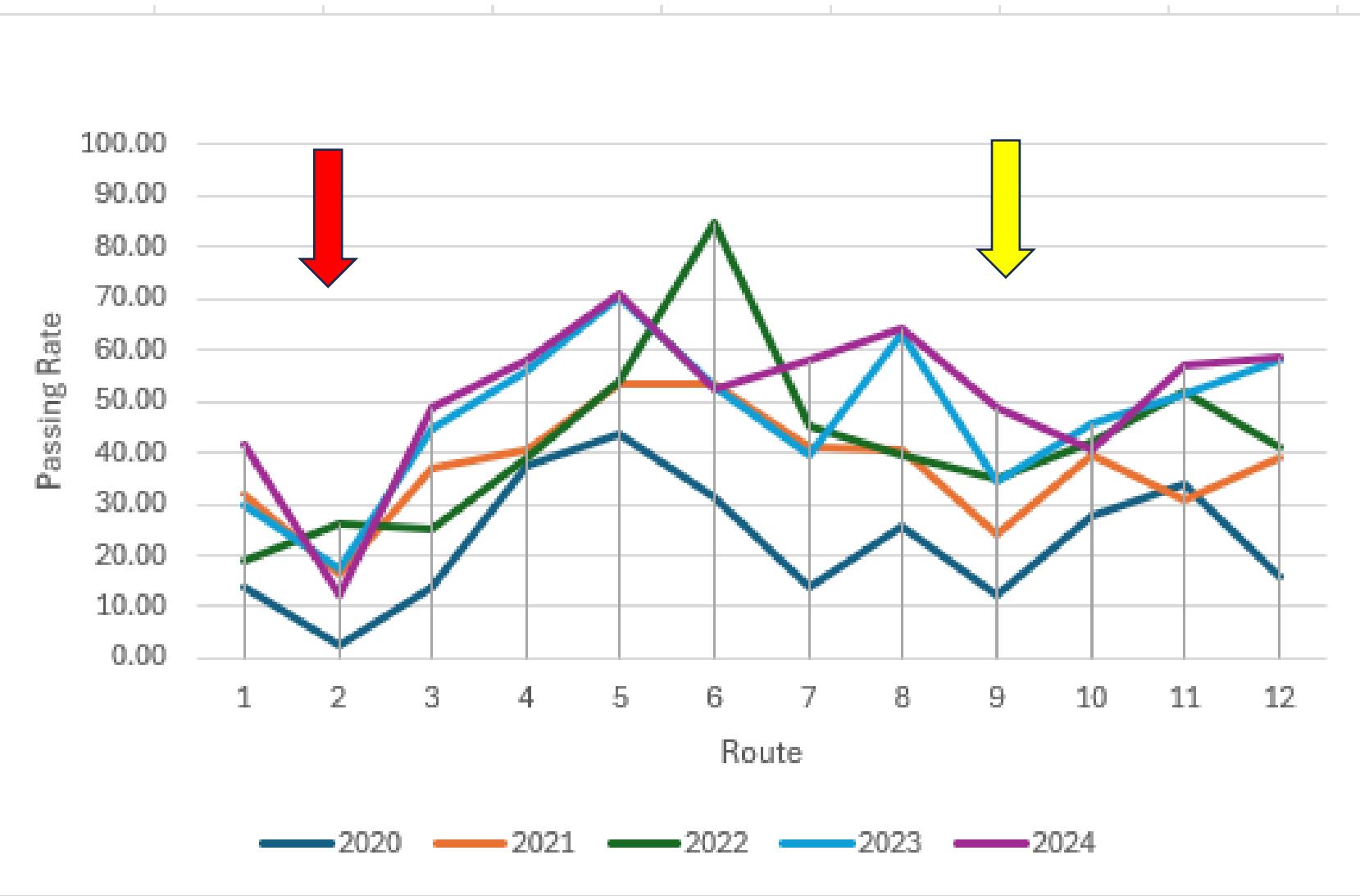


Should you look for a leak?

- Not until you know your data is correct!
- Most of EVMWD's *Loss* is through aging meters (<20 yrs old)
 - Currently 18,149 (~37%) meters over 20 years old



Meter Tests Passing Rate by Cycle





Contact us for a live demonstration or questions

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Manager
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THANK YOU



WESTMINSTER
COLORADO

Utilizing AMI Data for Customer Outreach

US EPA WaterSense Webinar – Jan 28, 2026

Drew Beckwith
dbeckwith@westminsterco.gov
303-658-2386

Sign-Up Experiment – Research Goals/Partners

- Leverage ~\$18,000,000 investment in AMI
- Determine what kind of outreach works best to get more customers signed up in AMI portal
- UChicago E+E Labs: scale policy solutions into the real world
- AWE: like AWWA for water conservation

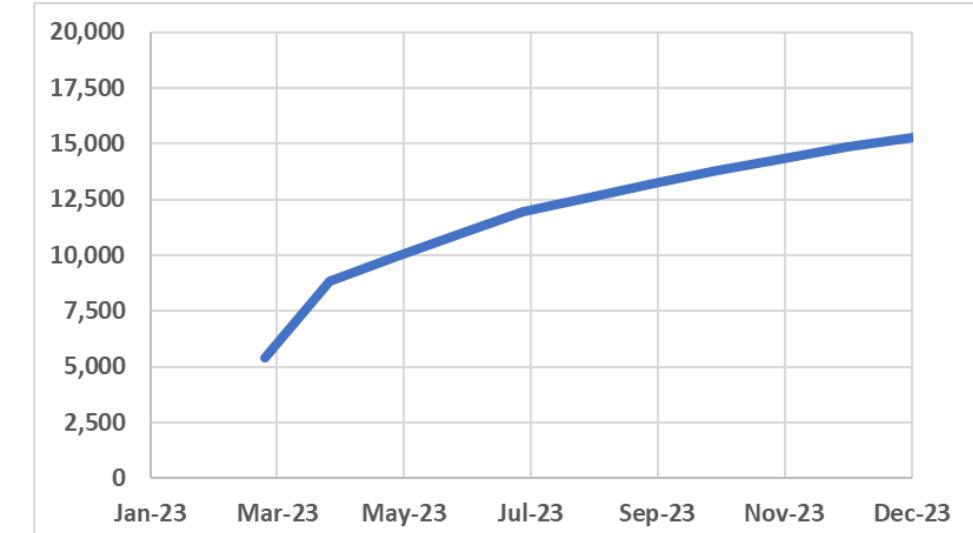


Westy Water Sign-Up Experiment

- Randomized Control Trial (RCT/RCE) for more sign-ups
- What way of communication (mode) is most effective?
 - 1) email; 2) email+email; 3) email+postcard; 4) postcard; 5) postcard+postcard
- What message (content) is most effective?
 - 1) Leak Alerts; 2) Easy Payments; 3) Water Use Info



**WESTY
WATER**



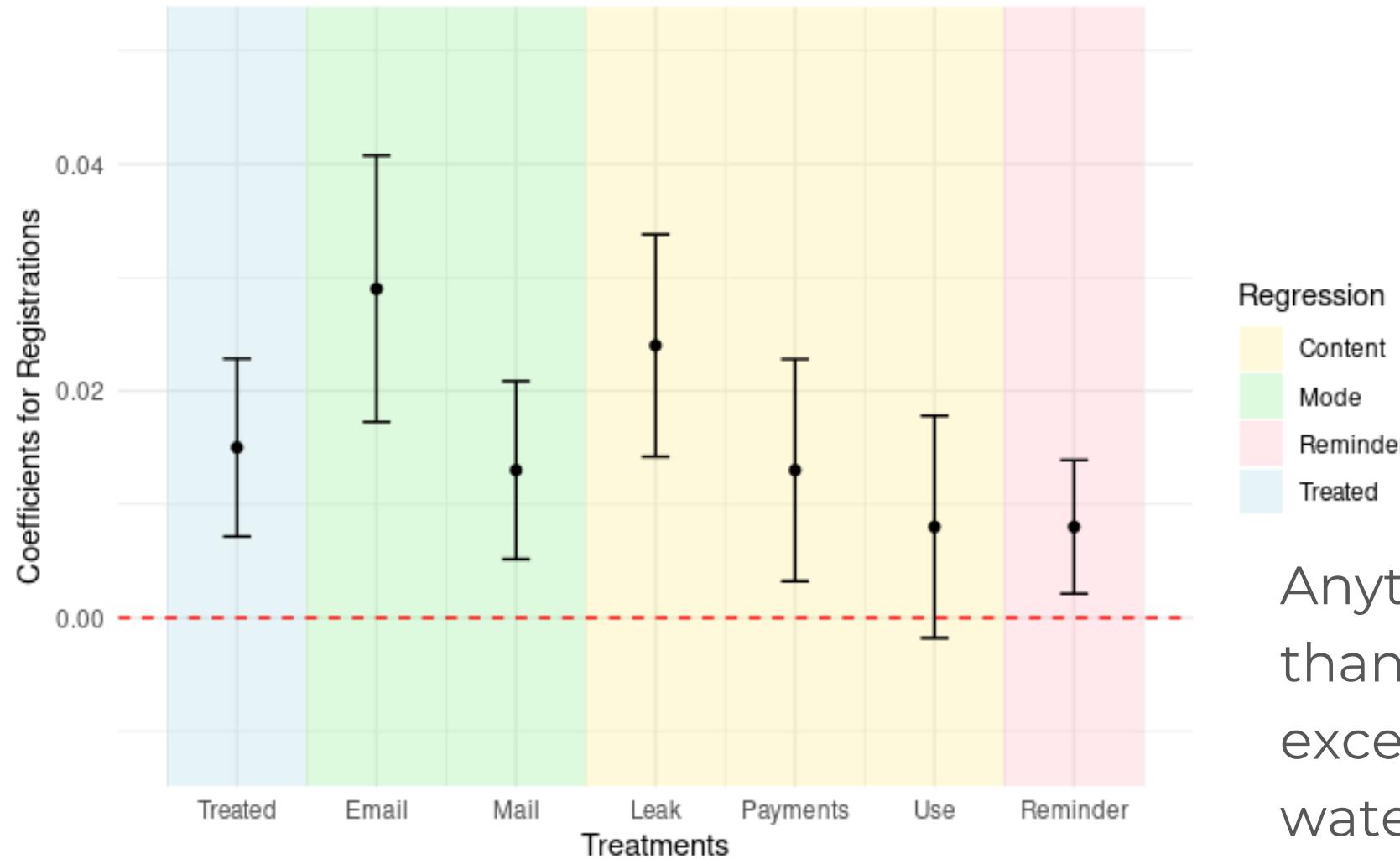
Outreach Materials



A graphic with a teal wavy background. It features the Westminster and Westy Water logos. The main text reads "GET LEAK ALERTS". Below it, a subtext encourages users to sign up for leak alerts to minimize property damage and expenses.

An email template for Westy Water. It features the Westy Water logo and a "Log In to Westy Water" button. The body of the email is addressed to a customer, encouraging them to explore their water use and set personalized consumption alerts. It includes links to the mobile app stores and a "Thank you" message from the City of Westminster. The footer contains standard email links for managing preferences, signing up, and viewing the email online, along with the emma logo.

Sign-Up RCT Results



Anything is better
than nothing –
except talking about
water use...WTF!? 😞

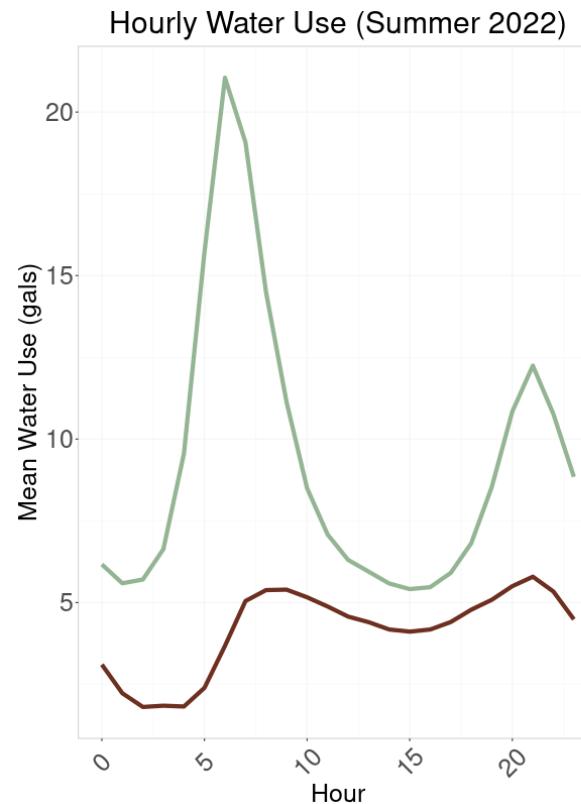
Irrigation Experiment – Research Goals

- For Single Family Homes – do good
 - Irrigate during nighttime hours
 - Irrigate a maximum of 3-days per week
 - (Westminster does not have regular watering rules – I want them!)
- Determine what kind of “informational intervention” works best to change irrigation behavior
- Calculate water use reductions from treatment groups



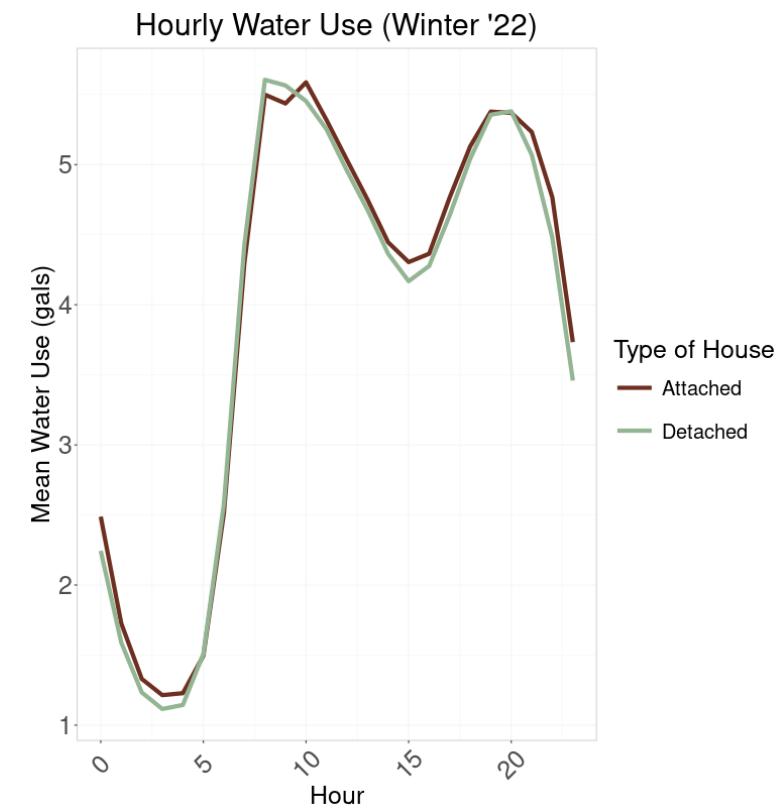
Daily Water Use Timing

Summer



In 2023, during at least 1 week:
45% irrigated during the day
31% irrigated 4+ days per week

Winter



SFD homes water outside in the AM

SFD/SFA use water the same indoors

Irrigation Experiment

- Randomized Control Trial (RCT/RCE)
 - Interventions June 1 – September 30, 2024
 - Emails every two weeks at most, max of 4 emails / customer
- What treatment is most effective?
 - 1) timing; 2) frequency; 3) timing + frequency



Irrigation = >150
gal/hr for 2+ hrs

	Frequency Event		No Frequency Event
Timing Event	A. Treatment A + Treatment B (143)	B. Treatment A (143)	E. Treatment A (2,437)
No Timing Event	C. Treatment B (143)	D. No Treatment (143)	F. No Treatment (2,437)
	G. Treatment B (980)	H. No Treatment (980)	I. Not in experimental sample (6,826)

Treatment Type:
A = timing
B = frequency

Outreach Emails

Timing (A)

[Log In to Westy Water](#)

Dear Customer,

Did you know that watering your yard at night when it's cooler can stay healthy this summer? In the past two weeks, your water meter showed a lot of water use during the hot daytime hours.

It's best to water your yard after the sun sets. Using water wisely is really important to make sure we have enough water for future generations. The City of Westminster recommends residents water their yards between 6:00pm and 8:00am. Most people already do this.

Here's what you can do this week:

1. Change your sprinkler timer to start watering between 6:00pm and 8:00am (double check the AM vs. PM setting).
2. Explore your water use in the [Westy Water App](#).

For more information about good irrigation practices, visit the City's [water conservation webpage](#).

Download the mobile app:

[Apple Store](#)

[Google Play Store](#)

Thank you,

City of Westminster

This is an automatically generated email. Please do not reply to this message.

Frequency (B)



WESTY WATER

Timing + Frequency (A+B)

[Log In to Westy Water](#)

Did you know that only watering your yard a few days a week can help it stay healthy this summer? In the past two weeks, your water meter showed a lot of water use on several days during the week.

It's best to water your yard only 3 days a week during July. Using water wisely is really important to make sure we have enough water for future generations. The City of Westminster recommends residents water no more than 3 days a week. Most people already do this.

Here's what you can do this week:

1. Water your yard only the number of days per week shown in the picture below.
2. Explore your water use in the [Westy Water App](#).

For more information about good irrigation practices, visit the City's [water conservation webpage](#).

1 Day / Week
May (as needed)

2 or 3 Days / Week
June

3 Days / Week
July & August

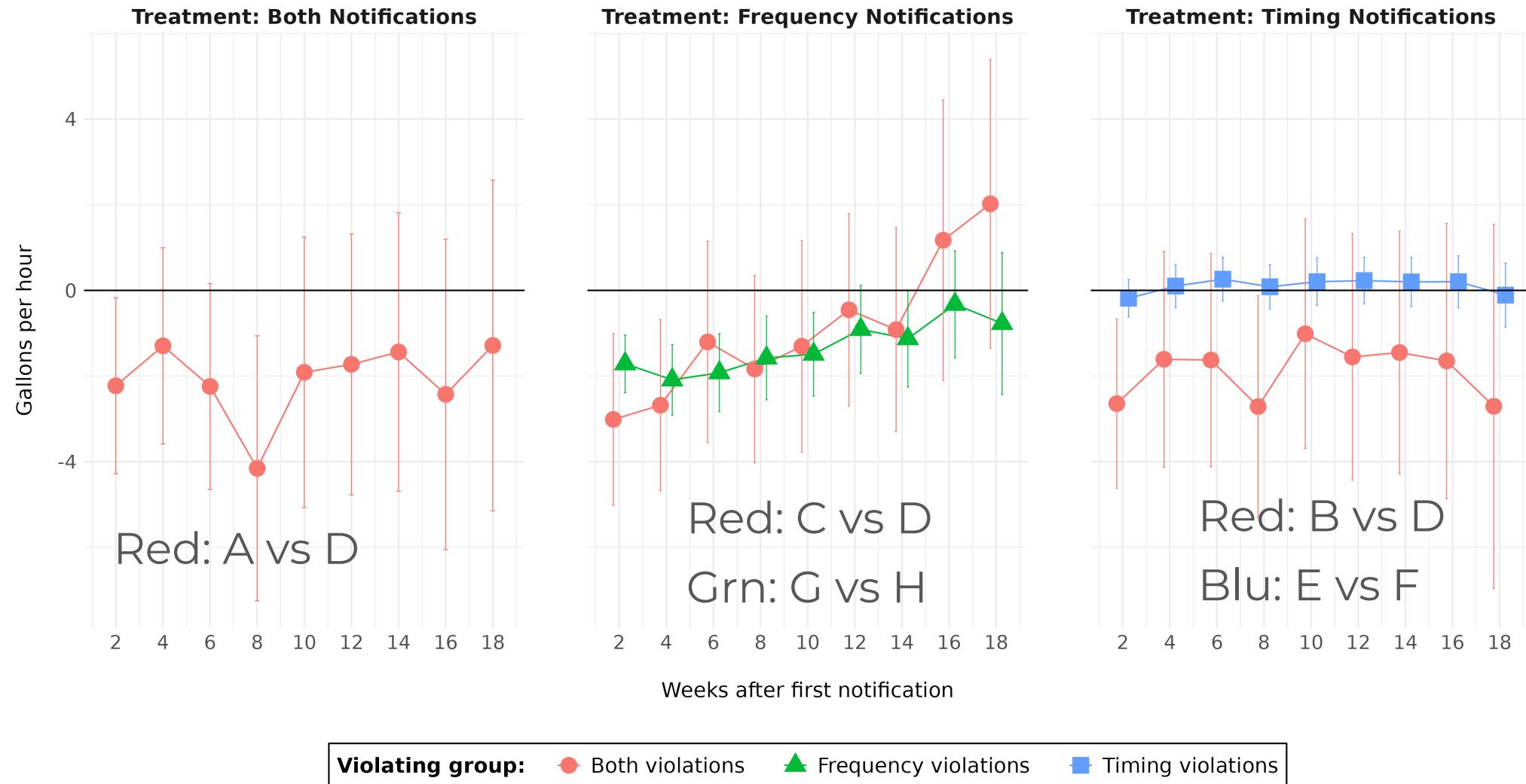
2 or 3 Days / Week
September

1 Day / Week
October (as needed)

Here's what you can do this week:

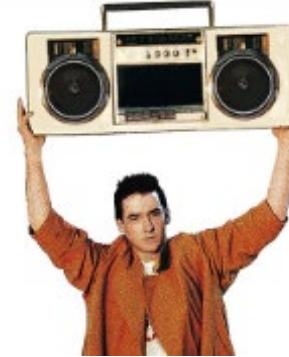
1. Change your sprinkler timer to start watering between 6:00pm and 8:00am (double check the AM vs. PM setting).
2. Water your yard only the number of days per week shown in the picture below.
3. Explore your water use in the [Westy Water App](#).

Irrigation RCT Results



Take Aways

- Be ready for customer engagement
- Regressions can get very complicated
- Saying anything can shift behavior and reduce use



Sent from Rhett's iPhone

Thanks Westminster for the heads up! We will try to do better. 😊

I have recently found a leak in my sprinkler system. I thought my water bill was to high. Thank you for reaching out.

Maybe you should take care of what's under your control instead of trying to control me... Have a nice day

I am watering at night. I see many who are not. Stop sending g me this.

Bro you have no idea what youre talking about. My sprinklers go off at 5 fucking am. Lose my email please.

What is WaterSense?

- WaterSense is a voluntary program launched by EPA in 2006 that provides a simple way to identify water-efficient:
 - Products
 - Programs
 - Practices
 - Homes
- Products are independently certified for water efficiency **and** performance





WaterSense Labeled Products

Indoor products



Showerheads



Lavatory
Faucets



NEW Point-of-use
Reverse Osmosis Systems



Tank-Type
Toilets



Flushometer
Valve Toilets



Flushing
Urinals

Outdoor products



Spray Sprinkler
Bodies



Weather-based
Irrigation Controllers



Soil Moisture-based
Irrigation Controllers

More than **45,000** product models have earned the label.



Best Management Practices



WaterSense at Work

Sanitary Fixtures and Equipment

3.1 Toilets (Water Closets)

Best Management Practices for Commercial and Institutional Facilities


May 2023



WaterSense at Work

Sanitary Fixtures and Equipment

3.2 Urinals

Best Management Practices for Commercial and Institutional Facilities


May 2023



WaterSense at Work

Sanitary Fixtures and Equipment

3.3 Faucets

Best Management Practices for Commercial and Institutional Facilities


May 2023



WaterSense at Work

Sanitary Fixtures and Equipment

3.4 Showerheads and Bath and Shower Diverters

Best Management Practices for Commercial and Institutional Facilities


May 2023

www.epa.gov/watersense/best-management-practices

Contact Us



WaterSense

www.epa.gov/watersense

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