Technical
Customer Advisory Committee

AGENDA

Members

Elias Archuleta	Donald T. Lopez
Mark Begay	Anjali Mulchandani
John Fleck	Jill Peterson
Brian Freeman	Mario Nuño-Whelan
Kerry J. Howe	

Public participation for this meeting will be via WebEx video conference. To request login information for this meeting or to submit public comment, contact Jordan Salas at jsalas@abcwua.org or 505-289-3100. Requests for login information and public comment must be submitted before 2:00 PM the date of the meeting.

Thursday, November 6, 2025	**4:00 PM**	**1441 Mission Ave NE Conference Room 204**

1. Call to Order
2. Approval of Agenda
3. Approval of October 2, 2025, Action Summary
4. Public Comment
5. Demo Garden Signage
6. San Juan-Chama Water Treatment Plant Startup
7. Smart Controller Study
8. Water Report
9. Other Business
10. Adjournment

NOTICE TO PERSONS WITH DISABILITIES: If you have a disability and require special assistance to participate in this meeting, please contact the Water Utility Authority Office, Suite 5012, Albuquerque/Bernalillo County Government Center, phone 289-3100, as soon as possible prior to the meeting date.

San Juan Chama Surface Water Treatment Plant Startup after an Extended Period Shutdown

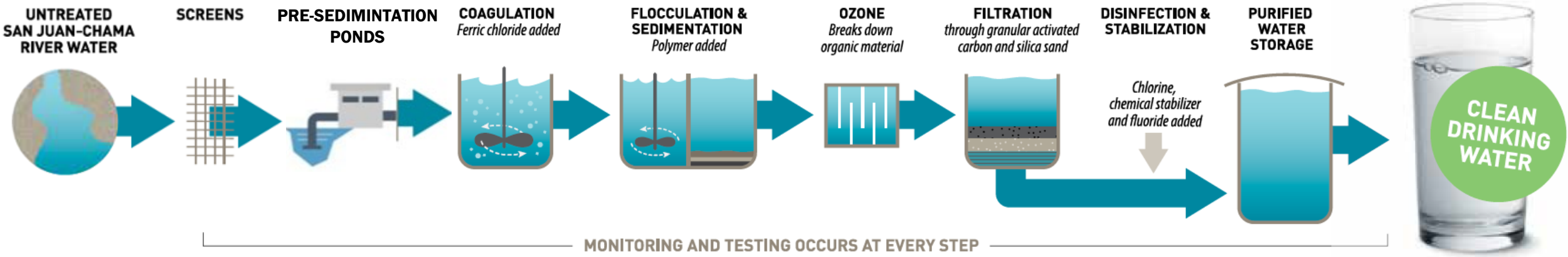
November 6, 2025

Cassia Sanchez, PE

San Juan Chama Diversion

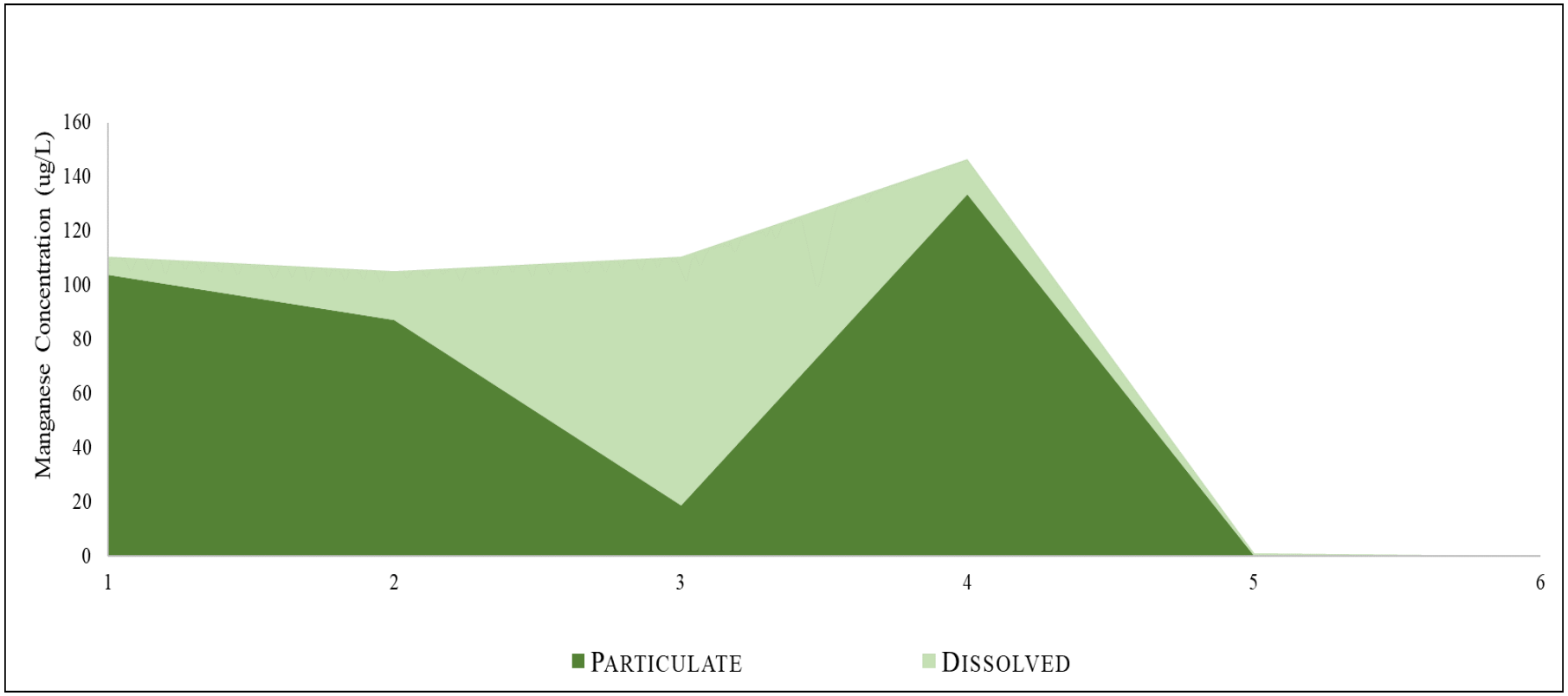
- Diversion Permit
  - ➢48,200 acre-feet annually
  - ➢Leased storage space
  - ➢Central gauge flows > 122 cfs for draw to occur

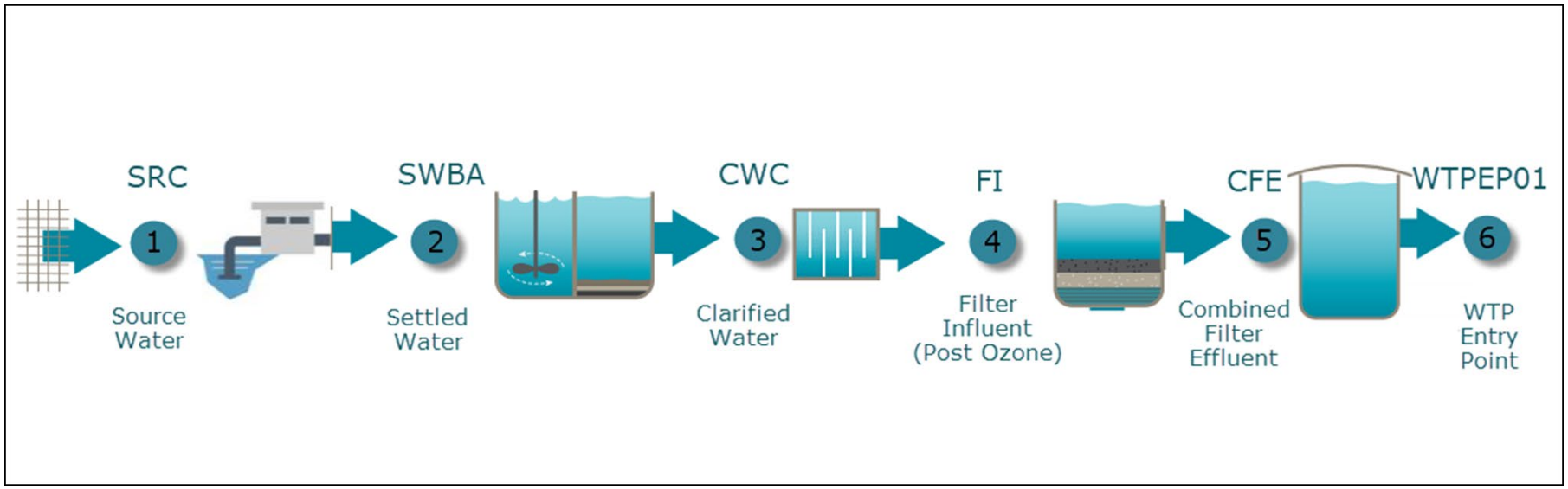
San Juan Chama Surface Water Treatment Plant



- Construction of the 84 MGD SWTP completed in 2008, online early 2009
- Settling Ponds with approximately 100 MG of storage volume
- Actiflo™ Settling Process - adding ferric chloride, polymer and microsand to create floc with Lamella tube sedimentation
- 12-Biologically Active Filters (BAF) with 5'- GAC media and 1'- sand
- Onsite generation of 0.8% sodium hypochlorite

Manganese Profile across Treatment Processes



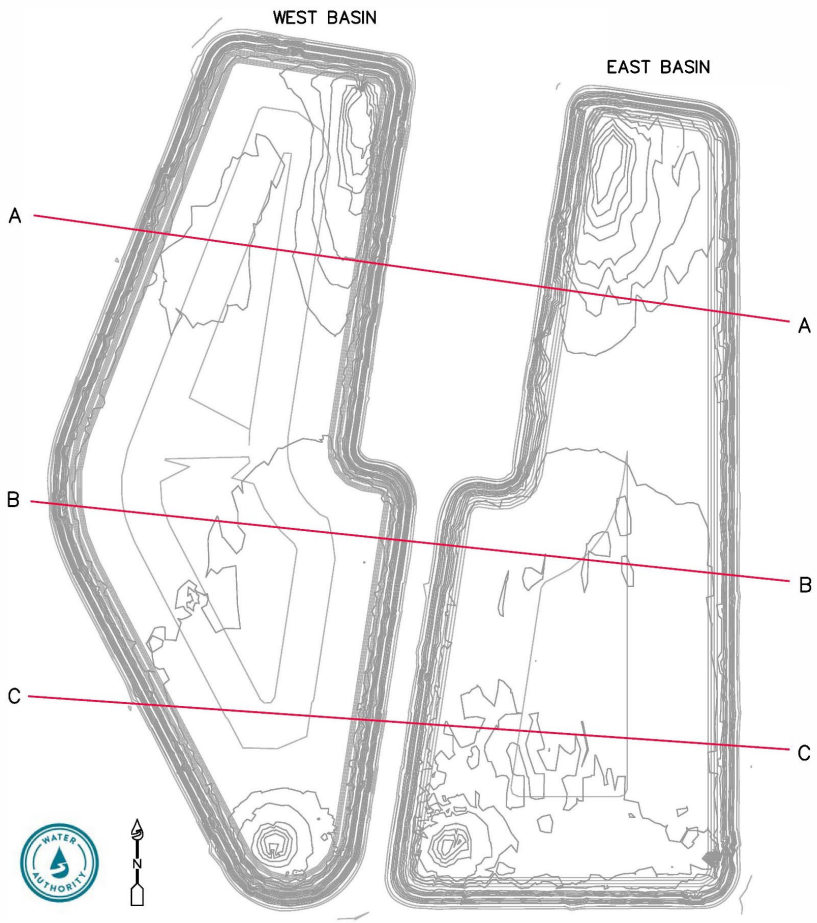


Standard Operating Procedures

A good opportunity to establish procedures to address extended period shutdowns greater than 1 month and eventual startup:

- Shutdown Key Components
  - Maximize use of water stored in settling pond prior to shutdown and drain remaining volume to allow for fresh river water at startup
  - Drain all 12 individual filters
- Startup Key Components
  - Draw fresh water in phased approach: Small initial draw for “spinning” phase and continuous low draw to fill pond volume prior to return to service
  - Combined filter and individual filter effluent tested by analytical methods for Mn and “bucket method” to detect any color
  - Initial production of 16 MGD with 1 floc-sed train and 3 filters in service
  - Delivery of water to public only occurs if Mn < 30 µg/L

Settled Water Ponds at Shutdown



Startup Roadmap

Operations

Drain Water from Settled Water Ponds

GOAL MET

Request for River Water @ 12 MGD

Monday 10/27

Surface Water
Divert to fill EAST grit basin, EAST pond, train, and filters

Tues 10/28 – Fri 10/31

Surface Water
Starting Fri 10/31 - Spin 14 MGD

Address all process/equipment issues

Sat 11/1

Decrease Diversion 3 MGD

Sat 11/1 – Mon 11/3

Surface Water
Divert 3 MGD from River to increase Settled Water Pond Volume from 50 to 60%

Tues 11/4

Go-No-Go @ 8AM

Increase Diversion 8 MGD

Tues 11/4

Surface Water
Start Production to FW Reservoirs @ 8 MGD with FTW @ 6 MGD

Groundwater
Fill FW Reservoirs to 70%

Fill West Side reservoirs - College and Don to 50 -70% with groundwater.

Surface Water
Increase Diversion and Production
@ 16 MGD - 1 Train
River water diversion @ 14 MGD

Wed 11/5 – Mon 11/10

Tues 11/11

Increase Diversion 32 MGD

Tues 11/11

Surface Water
Production @
32 MGD - 2 Trains
Ripen new filters

Groundwater
Pumping Surface Water to West Side
and consider East side service*

Wed 11/12 – Mon 11/17

Tues 11/18

Increase Diversion 48 MGD

Surface Water
Continue Production at 32 MGD

Water Quality

Settled Water Sampling starts

Mon 10/27

Surface Water
Bucket tests @ CFE
8 AM, 2 PM, 8 PM, 4 AM
Water Process Lab
Raw Water - Hardness, TOC, Fluoride
Settled Water Storage Ponds - Hardness, TOC, Fluoride
WQ Lab
Mn @ SWBA, IFE (new filters), CFE

Sat 11/1 – Tues 11/4

Mon 11/3

Grab Bacti & Cl

Tues 11/4 – Fri 11/7

Surface Water
Bucket tests @ CFE, FWPS
8 AM, 2 PM, 8 PM, 4 AM
Groundwater
Bucket tests @ Terminal Reservoirs (more frequent at first then taper as needed)
Water Process Lab
SWBA- Normal tests, Temp
Individual Filters (IFE)- Color (new filters ONLY)
CFE - Normal tests, Color
FW Pump Station- Normal tests, Color
WQ Lab
Mn @ IFE
CFE, FWPS

Surface Water
Bucket tests @ CFE, FWPS
8 AM, 2 PM, 8 PM, 4 AM
Groundwater
Bucket tests @ Terminal Reservoirs

Sat 11/8 – Sun 11/9

Week of Mon 11/10

November Compliance Samples

Mon 11/10 – Wed 11/12

Surface Water
Bucket tests @ CFE, FWPS
8 AM, 2 PM, 8 PM, 4 AM
Groundwater
Bucket tests @ Terminal Reservoirs
Water Process Lab
SWBA- Normal tests, Temp
IFE- Color
CFE - Normal daily tests, Color
FWPS: Normal Daily Test, Color
WQ Lab
Mn @ SWBA,
Any new IFE, CFE, FWPS

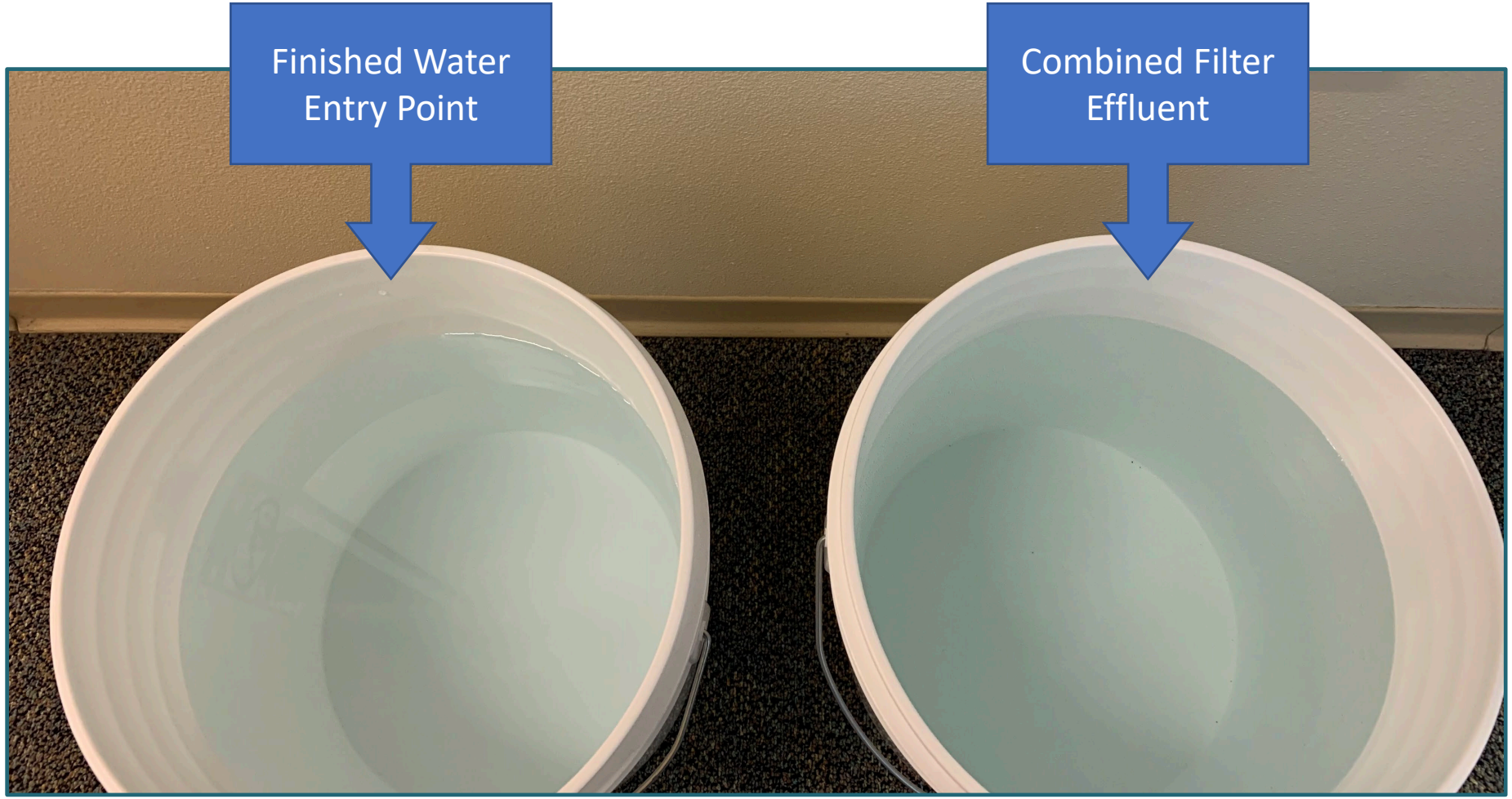
Surface Water & Groundwater
Bucket tests may stop
Water Process Lab
SWBA- Normal tests, Temp
CFE - Normal daily tests
FWPS- Normal daily test
WQ Lab
Mn @
Any new IFE, CFE, FWPS

Thurs 11/13 – Fri 11/14

Mon 11/17

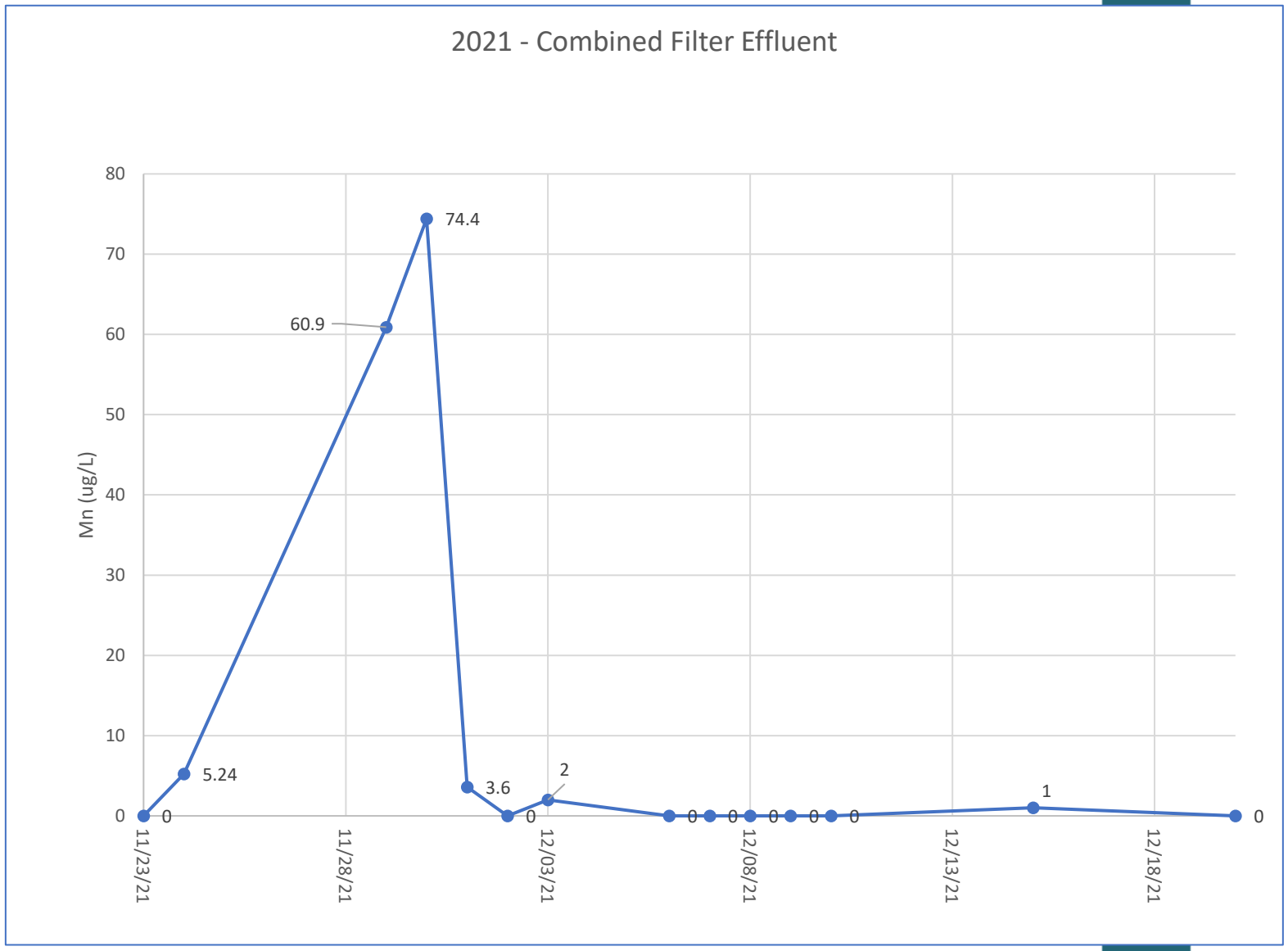
Surface Water
Bucket tests stop
Groundwater
Bucket tests stop
Water Process Lab
SWBA- Normal tests
CFE - Normal daily tests
FWPS- Normal daily tests
WQ Lab (Only if needed)
Mn @ SWBA,
Any new IFE, CFE, FWPS

The Proof is in the Buckets



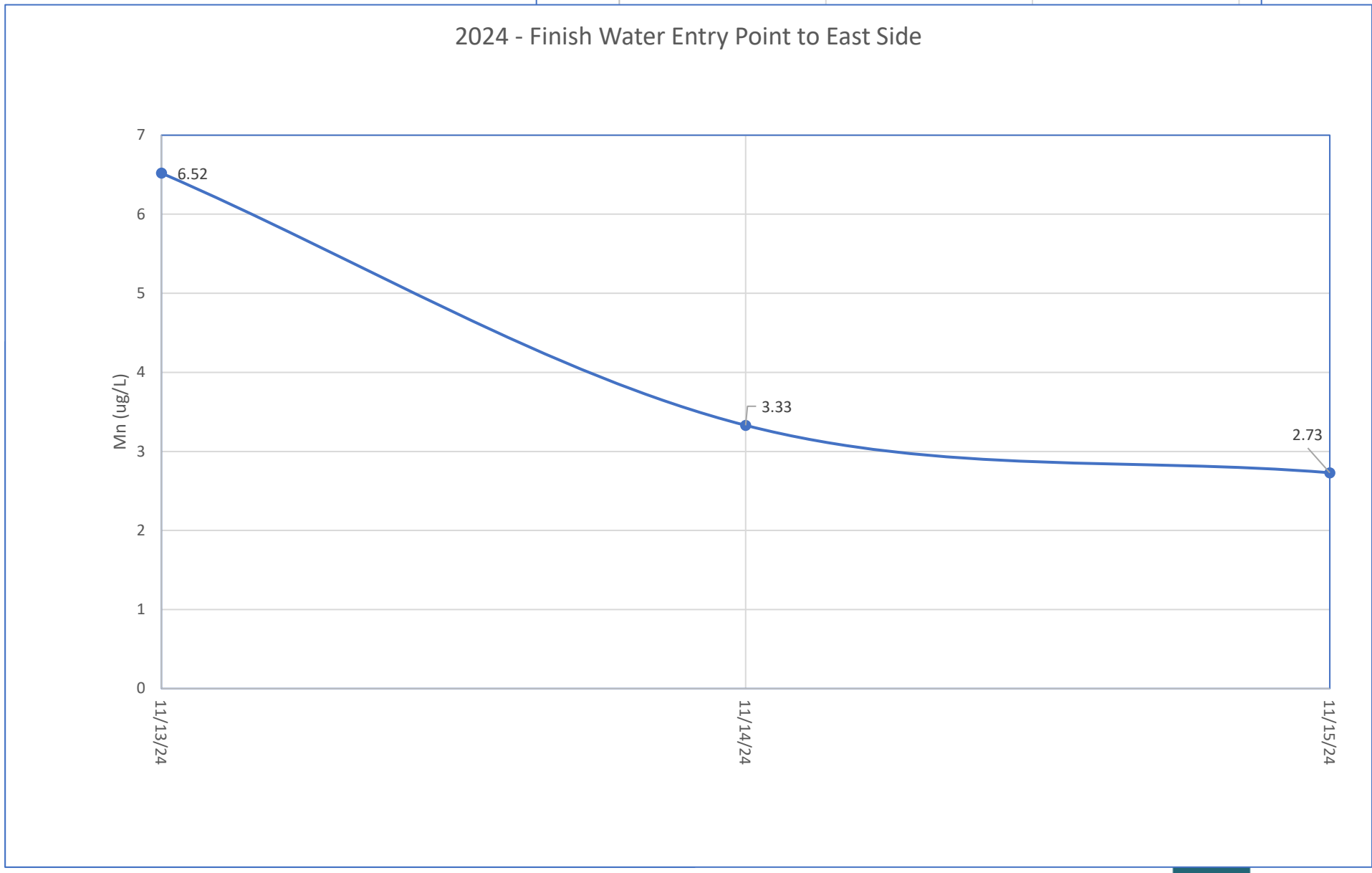
Manganese Trending

- Individual Filter Effluent samples taken as filters go online
- Combined Filter Effluent and Finished Water Entry Point routinely sampled
- 24-hour turn around time provides data for trending



2024 Manganese Trending

- Treat 14 MGD
- 8 MGD out to the finished water reservoirs
- 6 MGD Filter-to-waste
- 48-hour trial for blending Surface water with Groundwater at the finished water reservoirs before sending out



Pumping Strategy and Start-Up Timing

- Distributing initially produced surface water to the Eastside is desirable because we can blend with the robust well production
- However, to send initially produced surface water to the Eastside means that the Westside limited well production can meet demand
  - Potential to miss out on approximately 2 months of surface water production which is undesirable
  - Good news is on the horizon…the Volcano Cliffs Arsenic Treatment Facility is coming online in 2026 which will provide a Westside groundwater source for blending
- Various projects and procedures implemented to ensure surface water meets secondary SDWA standards without groundwater blending
  - Start the SWTP as early as river flows deem possible
  - Deliver water to the Westside with or without blending

Capital Improvements

CIP projects that should improve SWTP startup:

- Settled Water Pond Dredging
  - Removal of the clay solids in the ponds
  - First time sediment removed in life of SWTP
- Granular Activated Carbon (GAC) Media Replacement
  - 4-year Decade Plan project to replace GAC and sand media in all 12 filters
  - 3 of the 12 filters addressed in January 2025
- Volcano Cliffs Arsenic Treatment Plant
  - 17 MGD additional supply of treated Groundwater on West Side

Summary

- Drain settled water ponds to avoid reducing conditions that release Mn from the pond sediment
- Drain the filters during extended shutdowns to avoid reducing conditions that will release Mn at startup
- Proving filter performance and water quality using laboratory analysis is key; *must have quick turnaround time*
- Blend Surface water with Groundwater to minimize any color
- Quick field methods (bucket tests) to verify water quality at the SWTP and in the terminal reservoirs executed routinely
- Revise SOPs to capture and transfer what worked successfully

Questions?

Acknowledgements to all Water Authority Staff involved with this effort!

Effects of Smart Controllers on Water Conservation

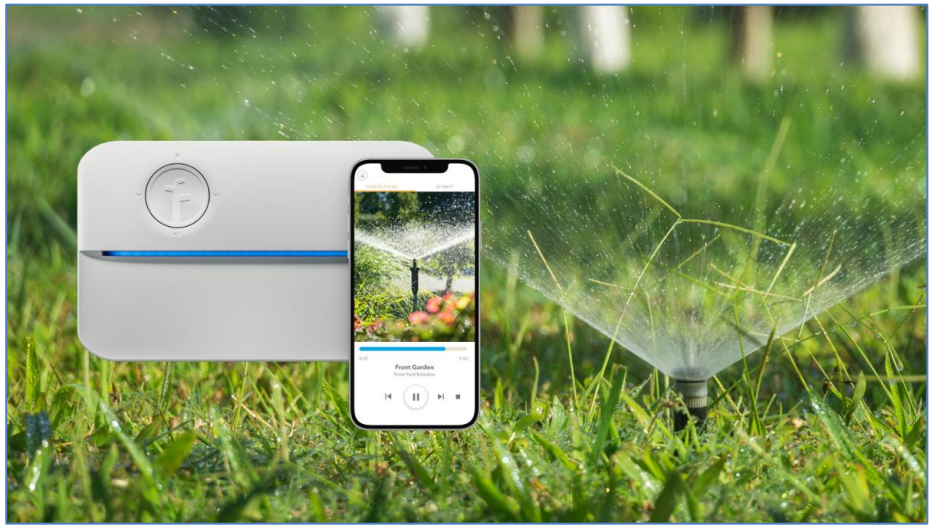
Gayatri Bangar, Data Analyst
Amos Arber, Water Conservation Program Manager

November 6, 2025

Technical Customer Advisory Committee

What are Smart Controllers?

- Smart Controllers are advanced devices designed to automate and optimize landscape watering systems.
- These controllers use **real-time data** and **adaptive algorithms** to adjust watering schedules, promoting water conservation and improved plant health.



Working Mechanism:

- The controllers access and respond to the dynamic environmental data through internet (Wi-Fi or Cellular)
- Their key functions include:

Adjusting irrigation schedules based on local weather conditions (e.g., precipitation, temperature, humidity, and wind)

Some controllers utilize soil moisture sensors to measure ground saturation and avoid overwatering.

Incorporating seasonal changes and plant-specific needs into watering plans.

Employing evapotranspiration (ET) data to estimate the combined water loss from soil evaporation and plant transpiration.

Benefits of Smart Controllers

Water Savings

Cost Savings

Convenience

Better Plant Health

Environmental Sustainability

Efforts by ABCWUA

Promoting Smart Irrigation and Water Conservation

Smart Controller Pilot Program

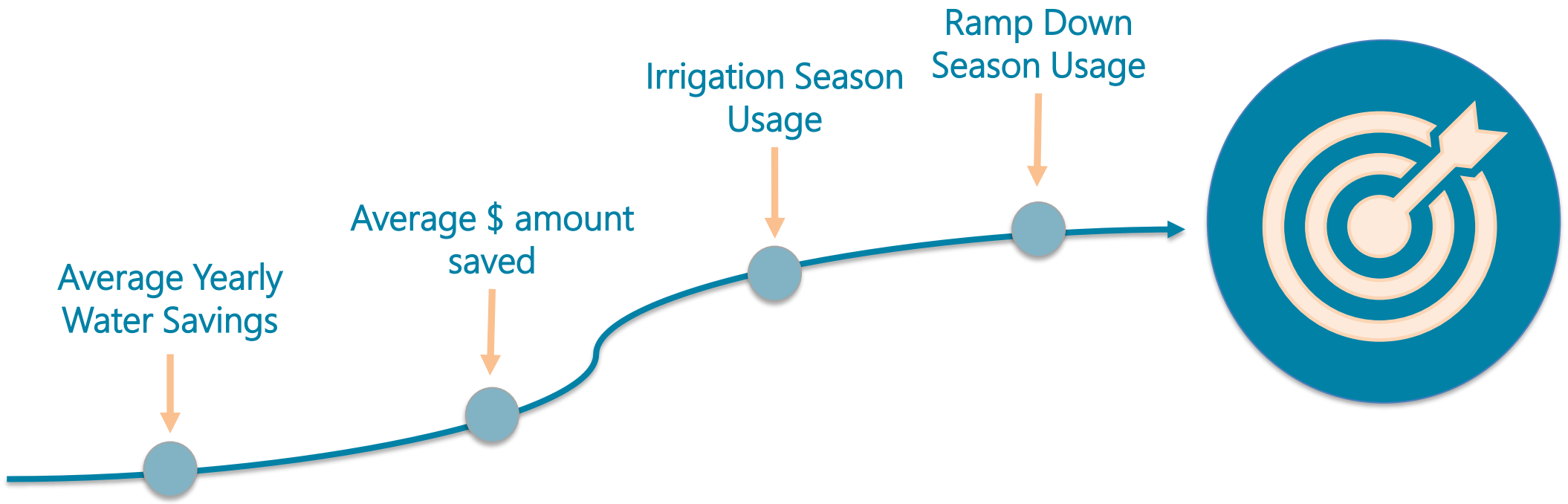
Program Overview

- Provided **free smart irrigation controllers** to top water users.
- Offered **"white glove"** installation service to ensure proper setup and maintenance
- Encouraged broader participation through **outreach** and **rebate incentives**.

Rebate Program – ABCWUA

- Available to Customers who self-install qualifying WaterSense-labeled smart controllers.
- Rebate issued are 25% of the purchase price, up to $100 per device.

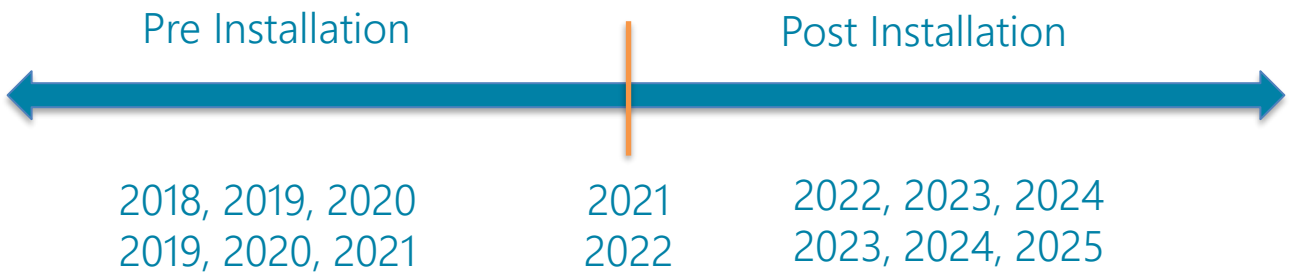
Goals for the Pilot Study



Methodology

- Data Used: Billing data for all groups and Conserve Track data to determine Rebate Group

- Timeline: Installations were carried out in 2021 and 2022 for Pilot Group



Methodology

Calculations:

Water Savings = Pre-Installation – Post-Installation

Tools Used:

Python Libraries : Pandas, NumPy, Matplotlib, Seaborn, SciPy, Duckdb

Statistical Tests:

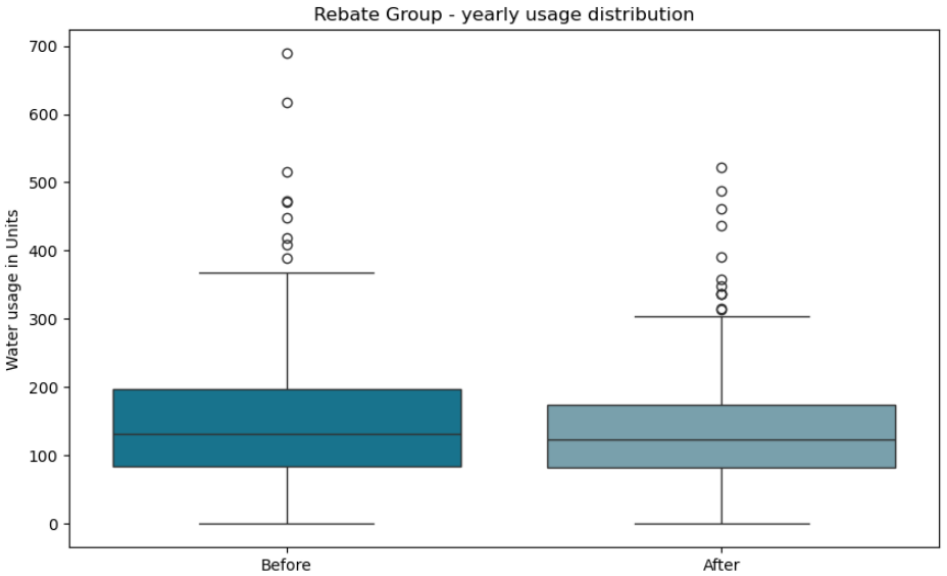
Tests for Normality, Tests for Equal Variance, Suitable t-tests

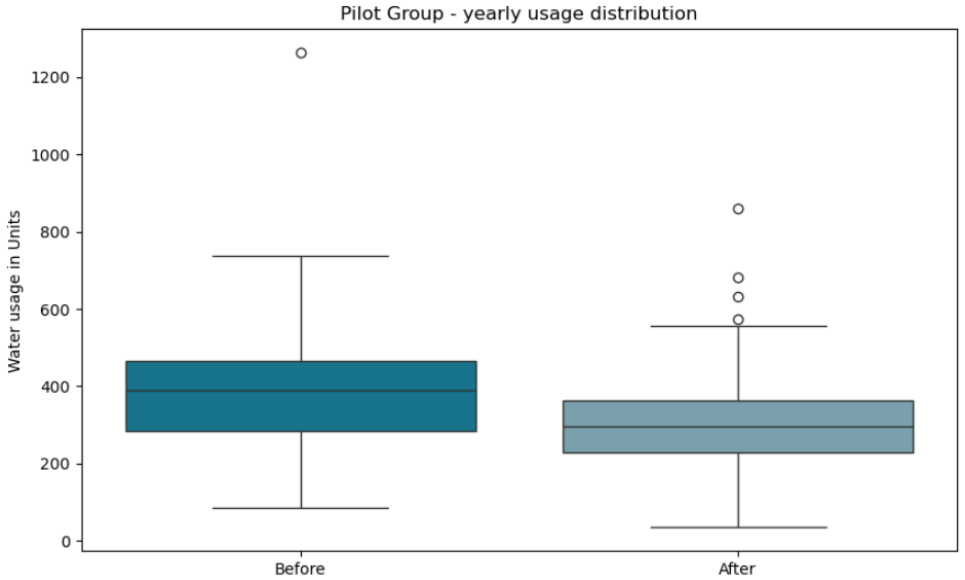
Results

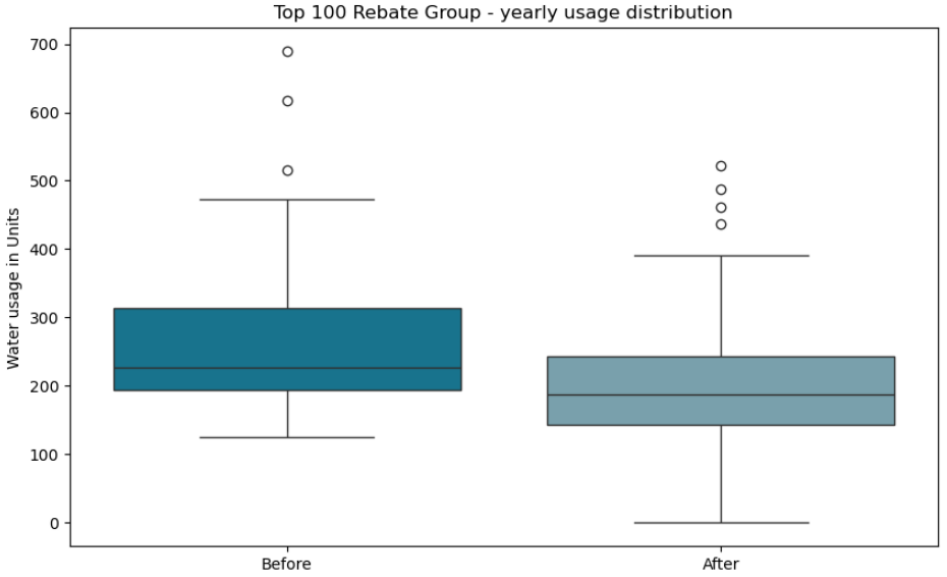
Average Yearly Water Savings:

- All groups showed notable overall reductions in water usage
- High Users and Pilot Groups achieved the most significant total savings, confirming measurable conservation outcomes

	PILOT GROUP	REBATE GROUP	TOP 100 REBATE GROUP
# Participants	78	289	100
Overall usage improvement %	74.36	58.82	80
# Overall improved	58	170	80
Average water savings (gallons)	56950	12072	44030





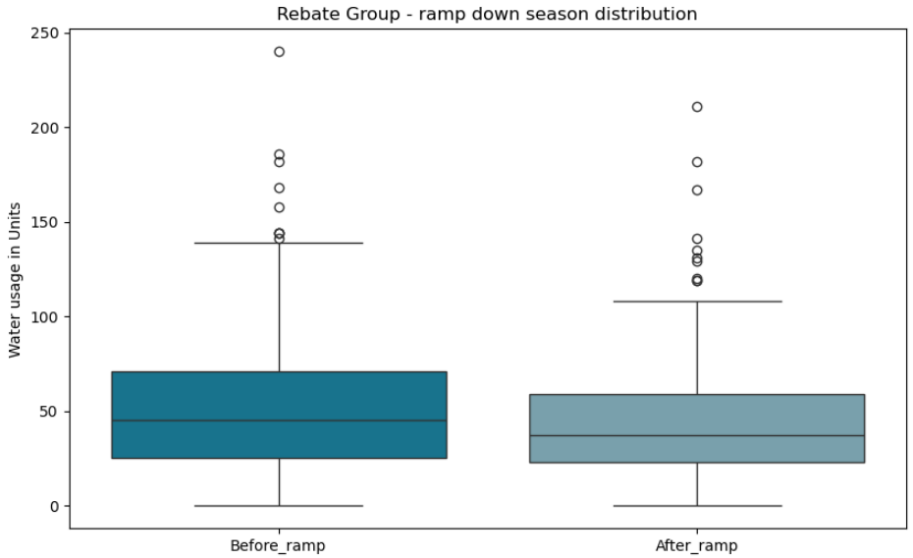


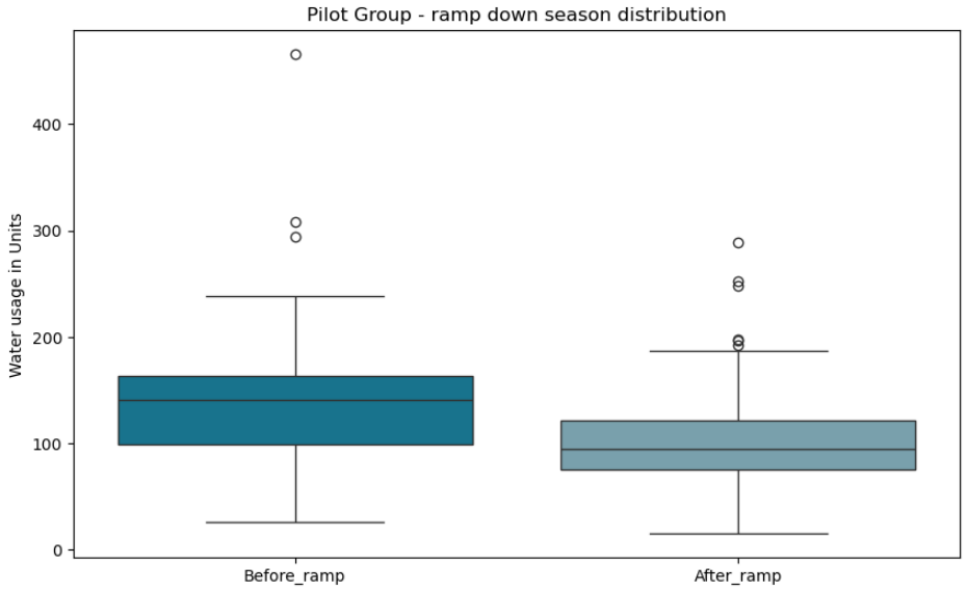
Results

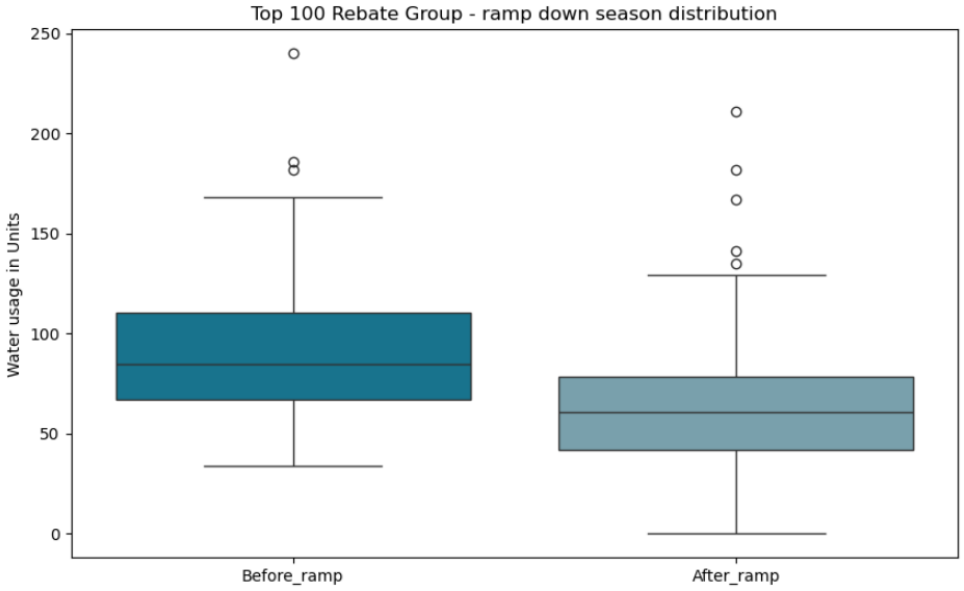
Ramp Down Season (Aug-Oct) water savings:

- Indicates long-term effectiveness of smart controllers in stabilizing water consumption and reducing excess use

	PILOT GROUP	REBATE GROUP	TOP 100 REBATE GROUP
# Participants	78	289	100
Ramp down usage improvement %	73	65	85
# Ramp down improved	57	188	85
Average Water Savings (gallons)	27739.93	6281.65	19380.68





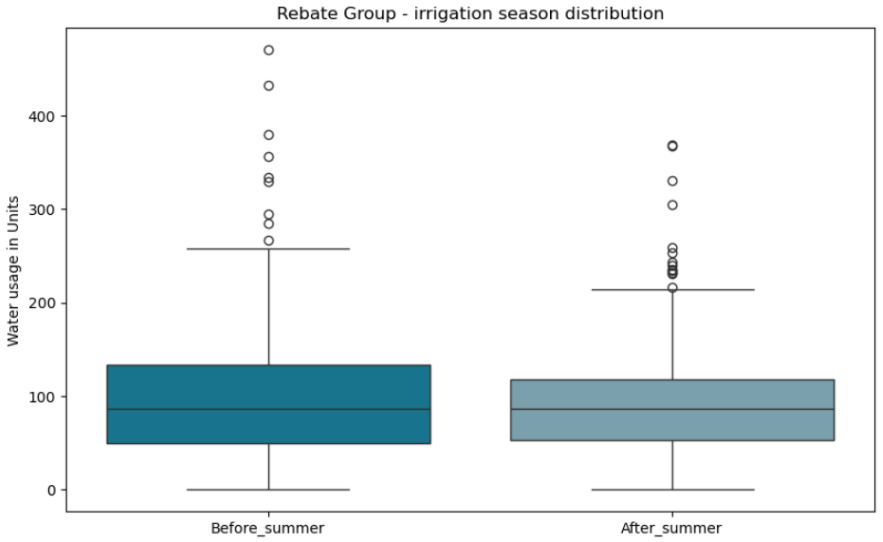


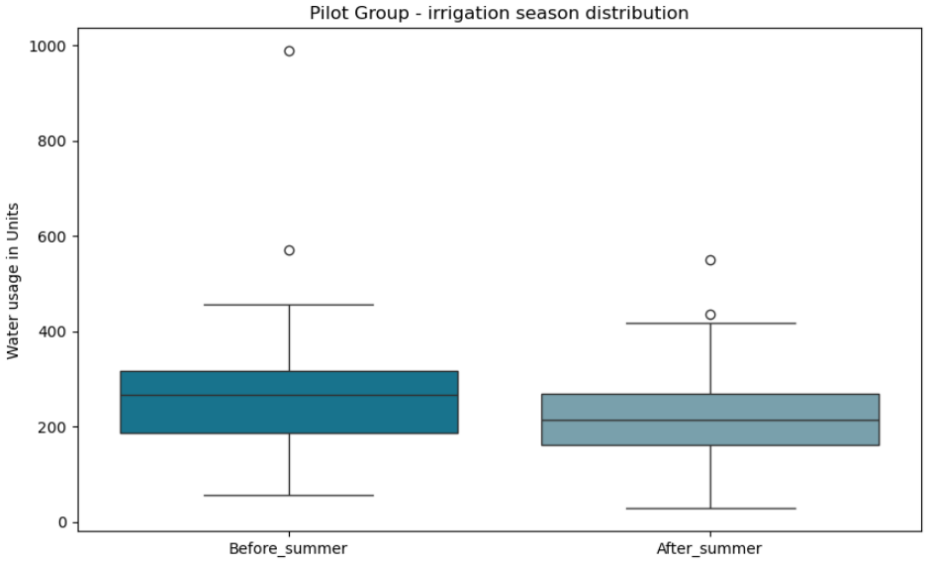
Results

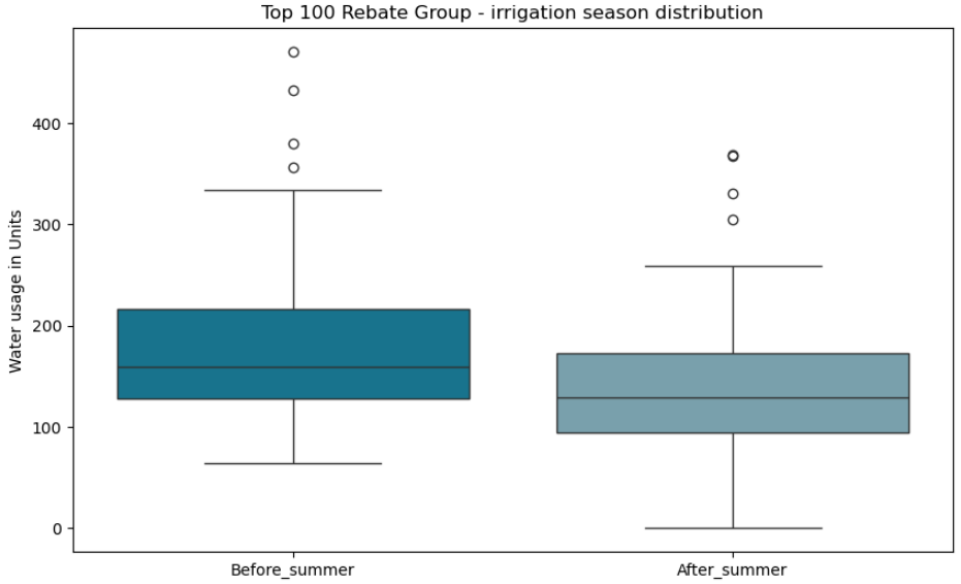
Irrigation (Apr-Sept) Water Savings:

- Smart controllers show maximum benefit during irrigation season.
- Significant reductions across all groups highlight improved efficiency in landscape watering

	PILOT GROUP	REBATE GROUP	TOP 100 REBATE GROUP
# Participants	78	289	100
Irrigation usage improvement %	76.92	59.17	80
# Irrigation improved	60	171	80
Average irrigation water savings (gallons)	36662	7320	28651





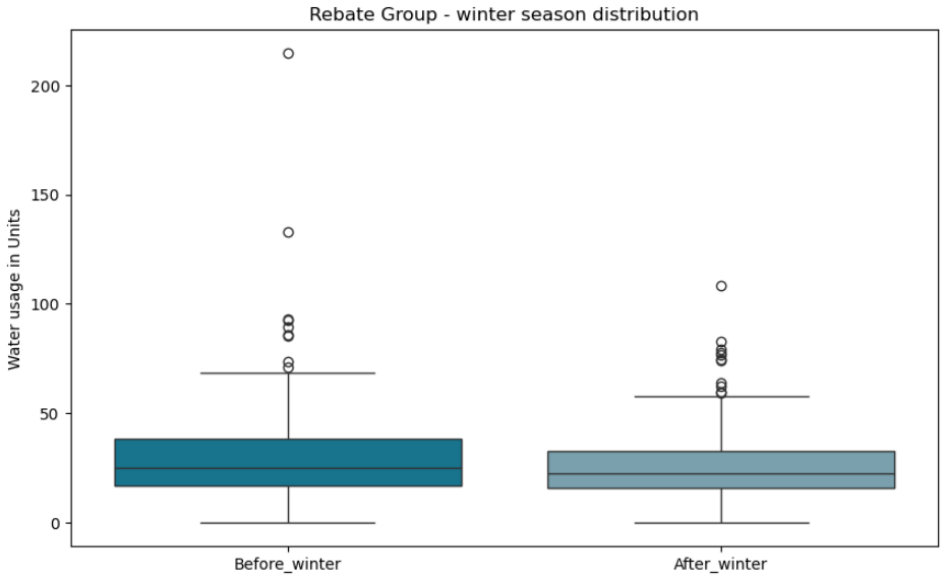


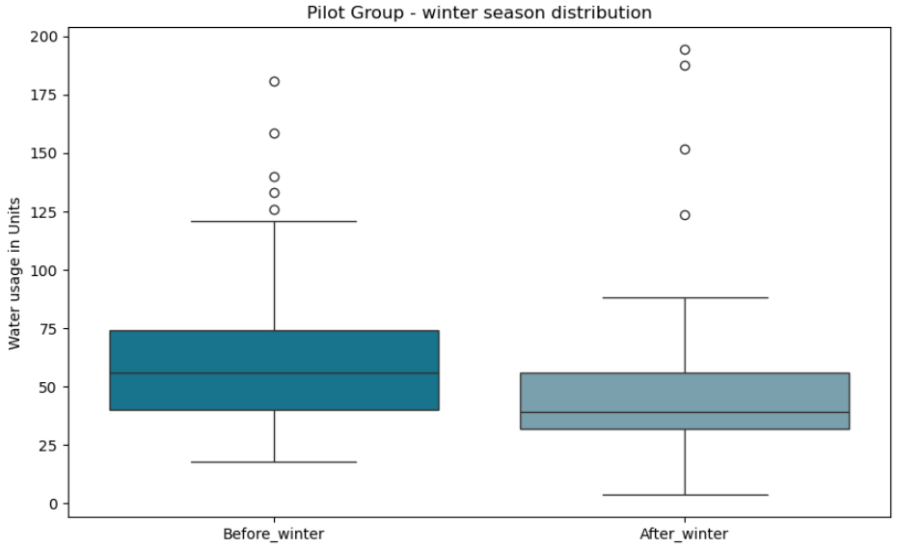
Results

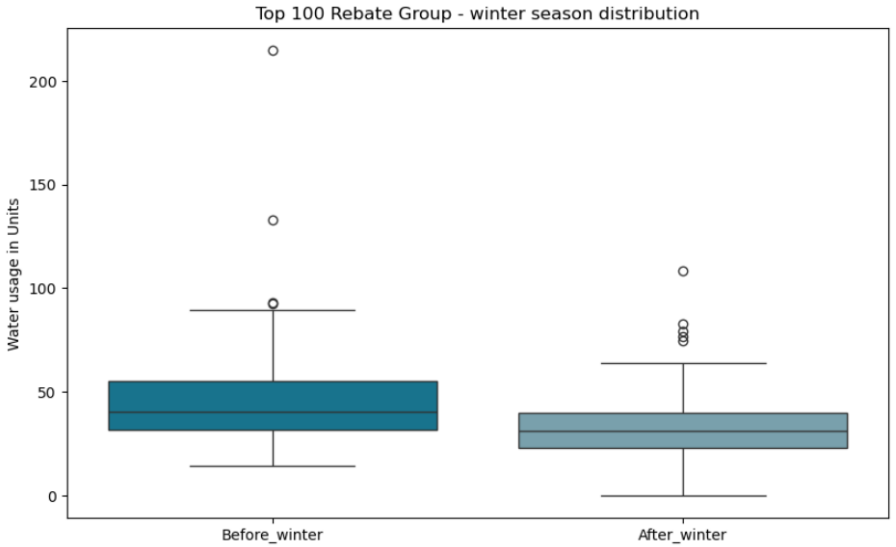
Winter (Nov-Feb) Water Savings:

- Smart controllers remain effective even in low-demand months, minimizing unnecessary irrigation

	PILOT GROUP	REBATE GROUP	TOP 100 REBATE GROUP
# Participants	78	289	100
Winter usage improvement %	76.92	58	72
# Winter improved	60	168	72
Average winter water savings (gallons)	10504	3040	9185







Results

Average $ amount saved/ year:

	PILOT GROUP	REBATE GROUP	TOP 100 REBATE GROUP
# Participants	78	289	100
Average $ amount saved	$1383.73	$149.37	$622.96

- Pilot Group showed the highest dollar savings, supported by hands-on guidance and direct assistance — though additional factors also contributed to the total savings observed
- We also see the top 100 rebate folks saved considerable amount of money.

Every group comprises of customers that have different conservation averages, service sizes, so the resulting figures are just an estimate on the amount that can be saved potentially.

Next Steps - *Informing customers about the study, results, lessons learned, and communicating advantages of smart controllers.*

- 505Outside newsletter article

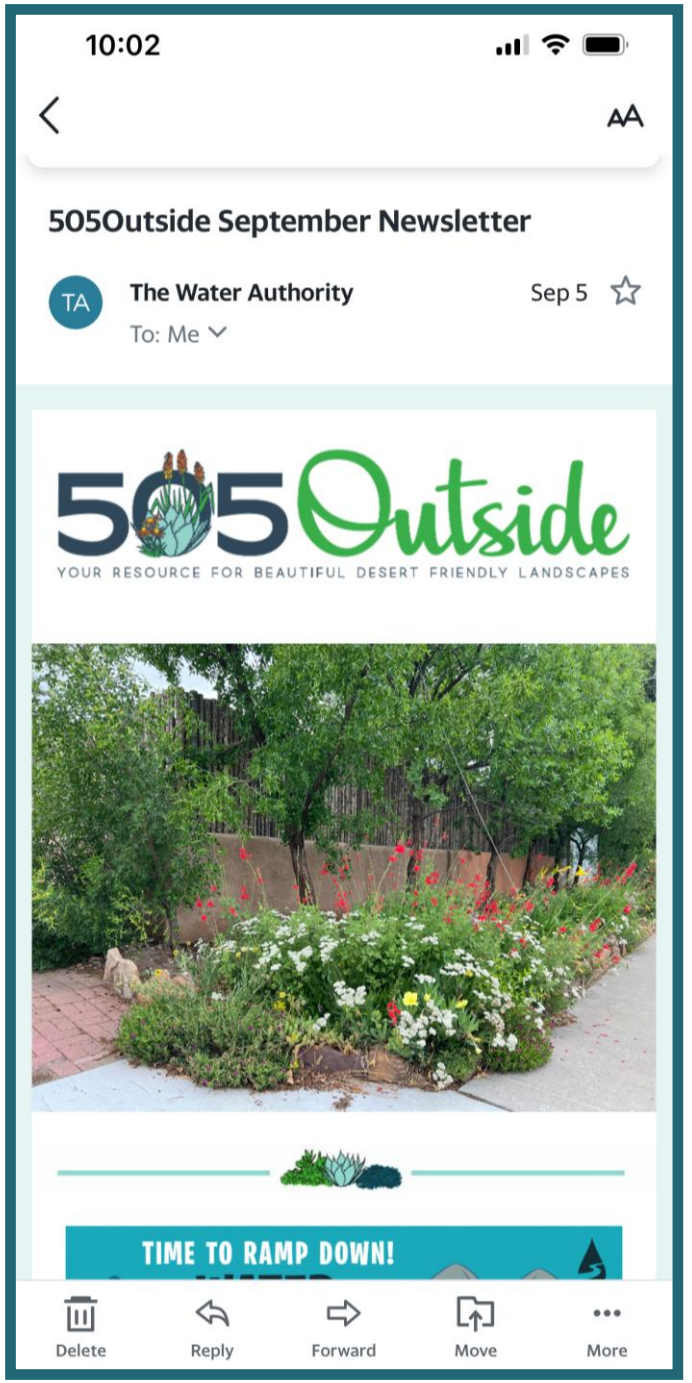
SMARTER WATER, STRONGER SAVINGS - Getting to Know Smart Irrigation Controllers!

Are you thinking about buying a Smart Irrigation Controller?

From 2020-2024 the Water Authority conducted a Smart Controller Study to investigate and evaluate the ease of use for homeowners and to evaluate the water savings when using a residential Smart Controller. We provided eighty-four B-Hyve controllers to qualified residential high-water users throughout the Albuquerque Metro area. We also offered installation, setup, and additional support for the duration of the study. Through this study we were able to verify that there are significant water savings for most smart controller users who have turf while maintaining a healthy landscape. We also verified that most participants who adjusted the controller settings themselves, or asked us to make the changes with them, had increased water savings while maintaining or improving overall plant health.

The participants appreciated the water savings, and most found the controllers provided enough irrigation to keep their landscape healthy. Three concerns that we consistently heard from homeowners during the study were:

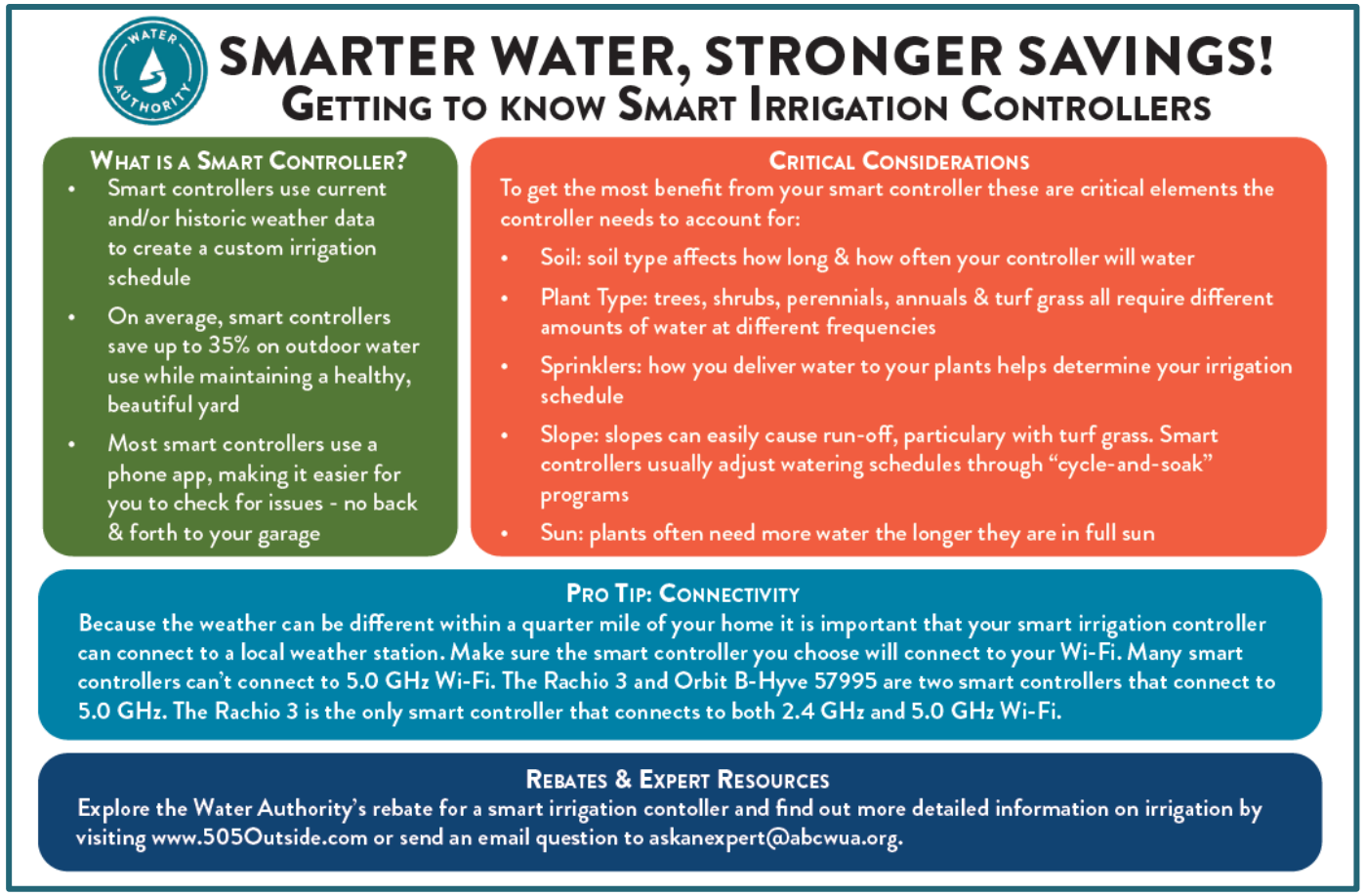
1. The controller did not stay connected to the homeowner's Wi-Fi
2. The controller felt too complicated, and it didn't feel easy to use
3. The participants didn't understand the settings and how they affected the watering schedule



Outreach materials – *Proposed Content*

Focusing on 5-6 key topics:

- What is a Smart Controller
- Critical Considerations (when purchasing)
- Adjustable settings and why important
- Connectivity (Pro-Tip)
- Rebates and resources
- Details on best selling Smart Irrigation controller's functions



SMARTER WATER, STRONGER SAVINGS!

Getting to know Smart Irrigation Controllers

What is a Smart Controller?

- Smart controllers use current and/or historic weather data to create a custom irrigation schedule
- On average, smart controllers save up to 35% on outdoor water use while maintaining a healthy, beautiful yard
- Most smart controllers use a phone app, making it easier for you to check for issues - no back & forth to your garage

Critical Considerations

To get the most benefit from your smart controller these are critical elements the controller needs to account for:

- Soil: soil type affects how long & how often your controller will water
- Plant Type: trees, shrubs, perennials, annuals & turf grass all require different amounts of water at different frequencies
- Sprinklers: how you deliver water to your plants helps determine your irrigation schedule
- Slope: slopes can easily cause run-off, particulary with turf grass. Smart controllers usually adjust watering schedules through "cycle-and-soak" programs
- Sun: plants often need more water the longer they are in full sun

Pro Tip: Connectivity

Because the weather can be different within a quarter mile of your home it is important that your smart irrigation controller can connect to a local weather station. Make sure the smart controller you choose will connect to your Wi-Fi. Many smart controllers can't connect to 5.0 GHz Wi-Fi. The Rachio 3 and Orbit B-Hyve 57995 are two smart controllers that connect to 5.0 GHz. The Rachio 3 is the only smart controller that connects to both 2.4 GHz and 5.0 GHz Wi-Fi.

Rebates & Expert Resources

Explore the Water Authority's rebate for a smart irrigation contoller and find out more detailed information on irrigation by visiting www.505Outside.com or send an email question to askanexpert@abcwua.org.

Outreach materials - *Formats*

4 Proposed Formats

- Newsletter article
- Detailed flyer (double sided)
- Single page flyer
- Post Card (double sided)

BESTSELLING SMART IRRIGATION CONTOLLERS, ABQ METRO AREA (2025)

	Adjustable Weather Stations for Live Data	Adjustable Soil Type Settings	Adjustable Plant Type Settings	Adjustable Sprinkler Type Settings	Adjustable Slope Settings	Adjustable Sun/ Exposure Settings
 RACHIO 3	✓	✓	✓	✓	✓	✓
 ORBIT B-HYVE 57995	✓	✓	✓	✓	✓	✓
 ORBIT B-HYVE 57950	✓	✓	✓	✓	✓	✓
 HUNTER X2 WITH WAND	Paid Subscription	✓	✓	Adjustable Sprinkler Efficiency Rating	✓	✓
 HUNTER HPC400	Paid Subscription	✓	✓	Adjustable Sprinkler Efficiency Rating	✓	✓
 RAINBIRD ARC	No	Very Limited	No	No	Manual Setup Cycle & Soak	No

EXPLORE THE WATER AUTHORITY'S SMART IRRIGATION CONTROLLER REBATE BY VISITING WWW.505OUTSIDE.COM

Outreach materials - *Targeted outreach*

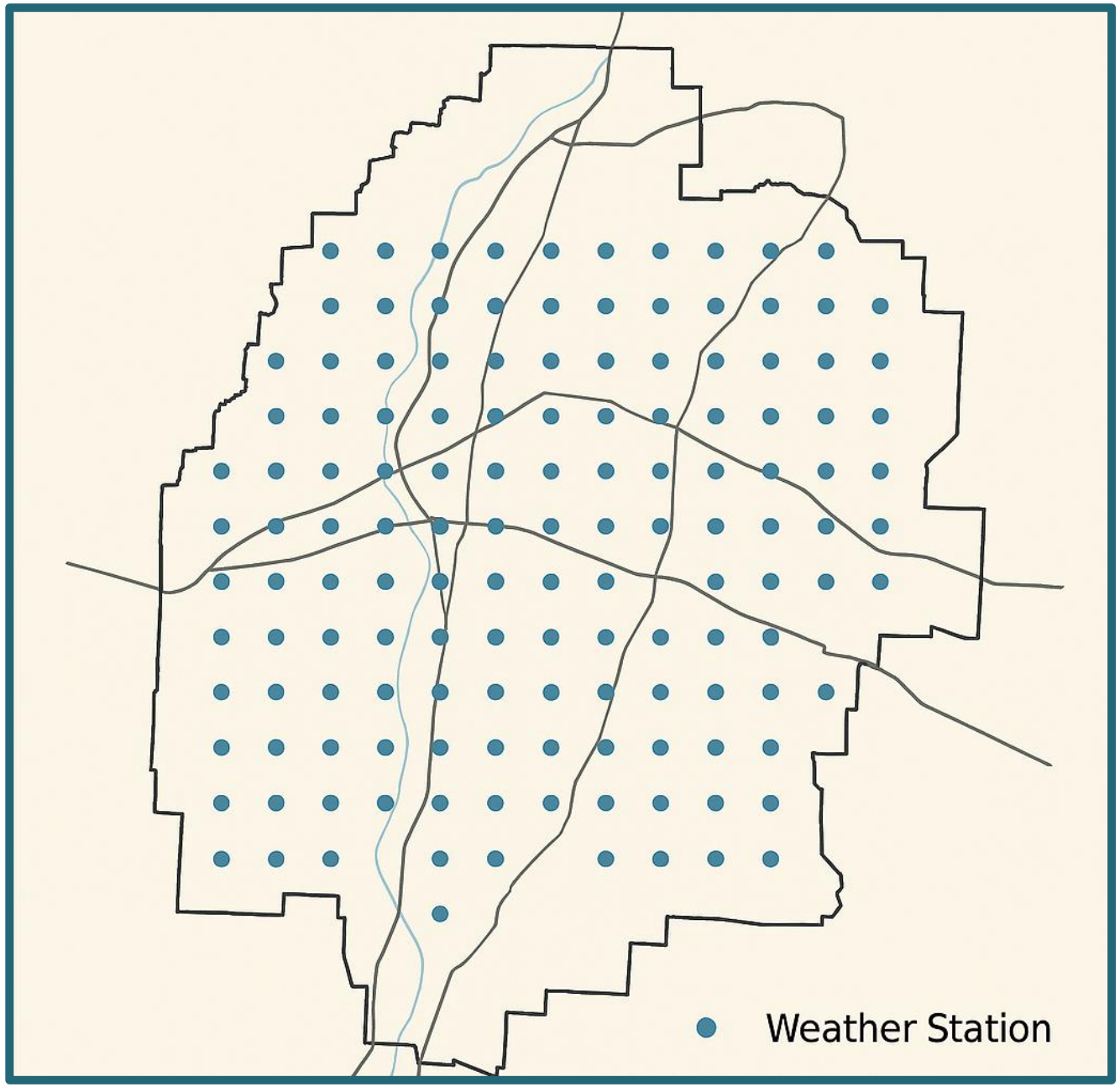
Targeted Mailers Based on Customer Data

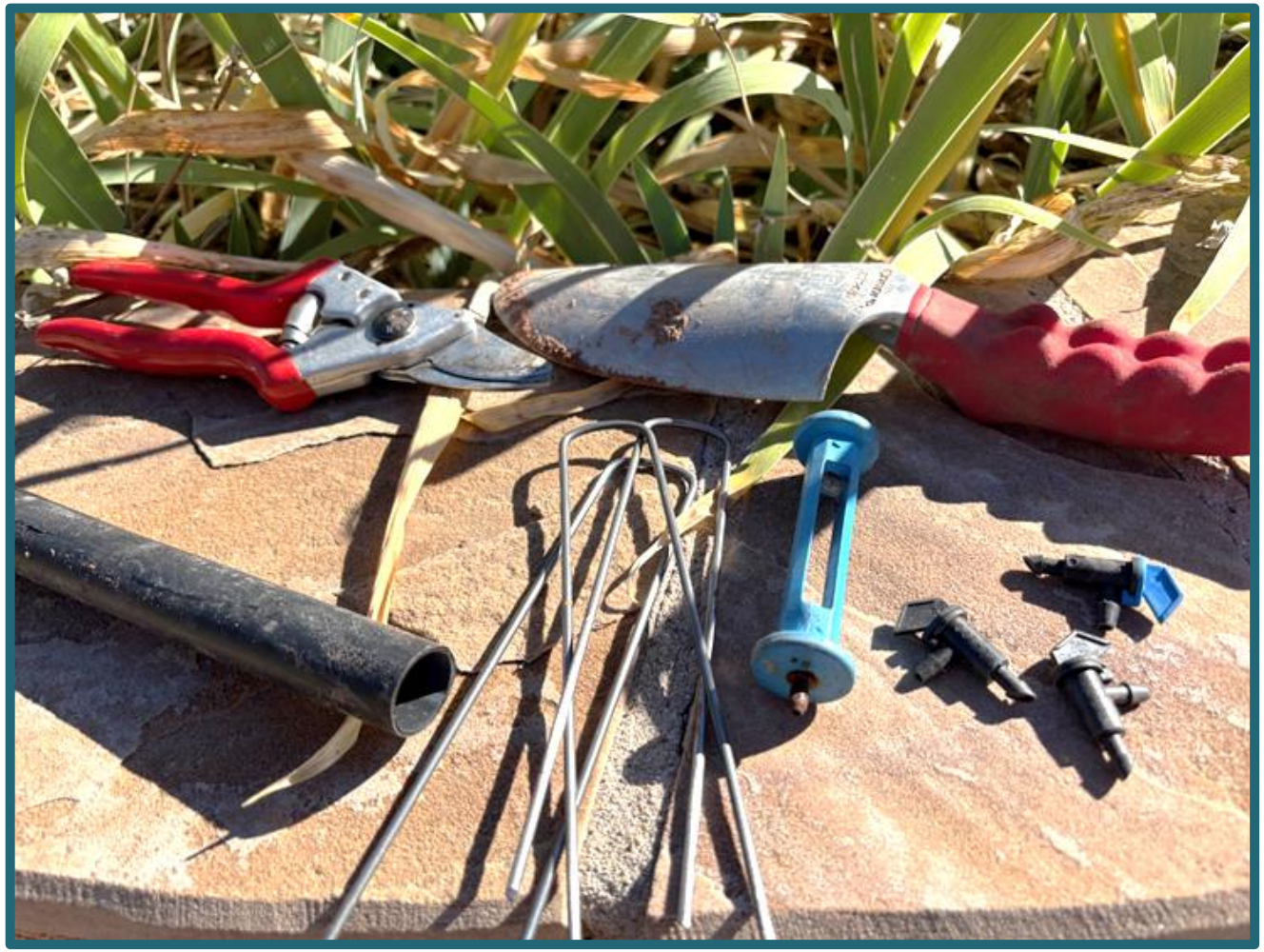
- **Highest water-use** customers
- **Time of Day violations**
- **Landscape type** (lawn, mature trees, etc.)
- **Landscape health** (Improper irrigation curve etc.)

Future Aspirations

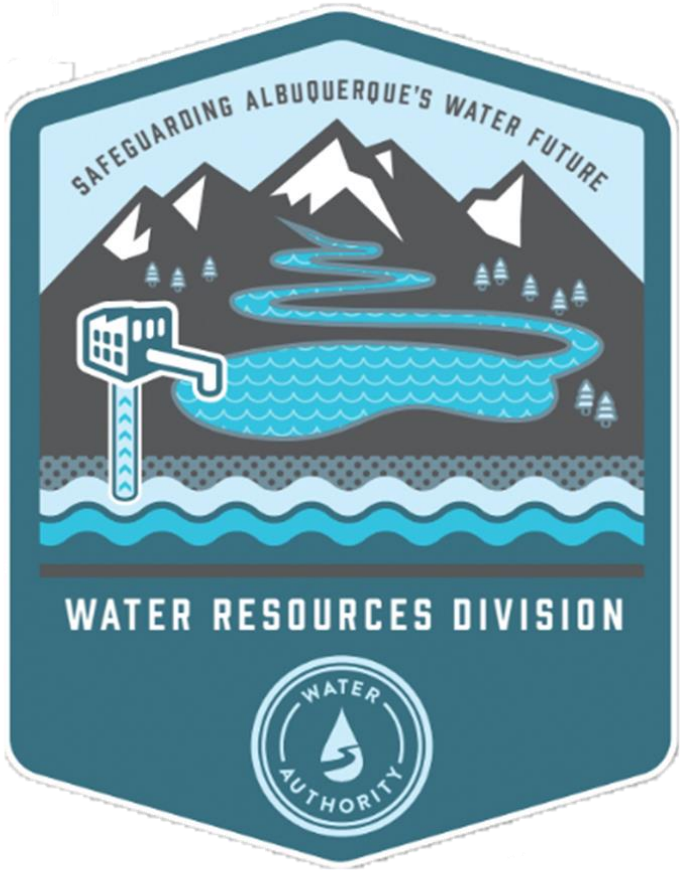
Hyper-local weather data

- Improved Irrigation budgeting
- Real-time Precipitation Monitoring
- Notifications of Moderate Rainfall Events





Questions?

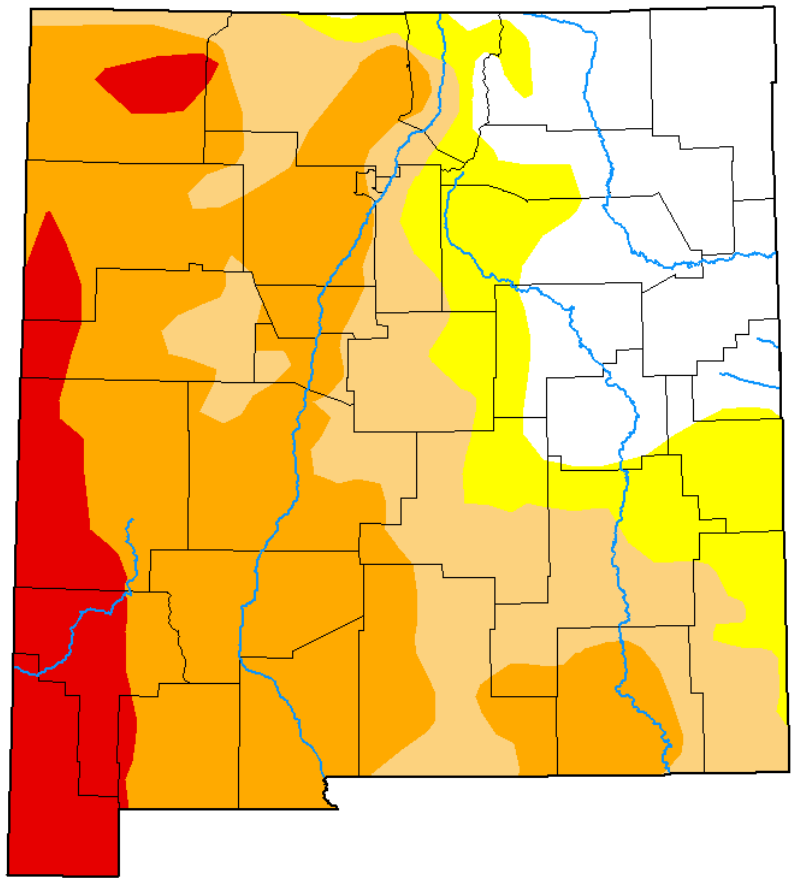


Water Resources Division

Water Report

Mark Kelly, PE
Water Resources Manager

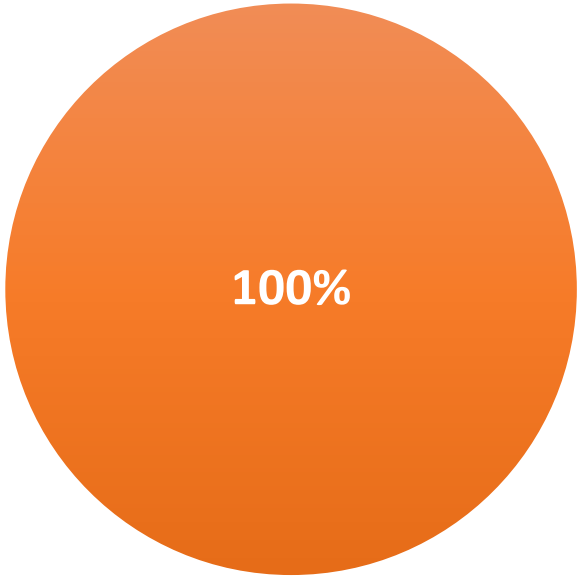
SUPPLY METRICS SNAPSHOT



D0 D1 D2 D3 D4

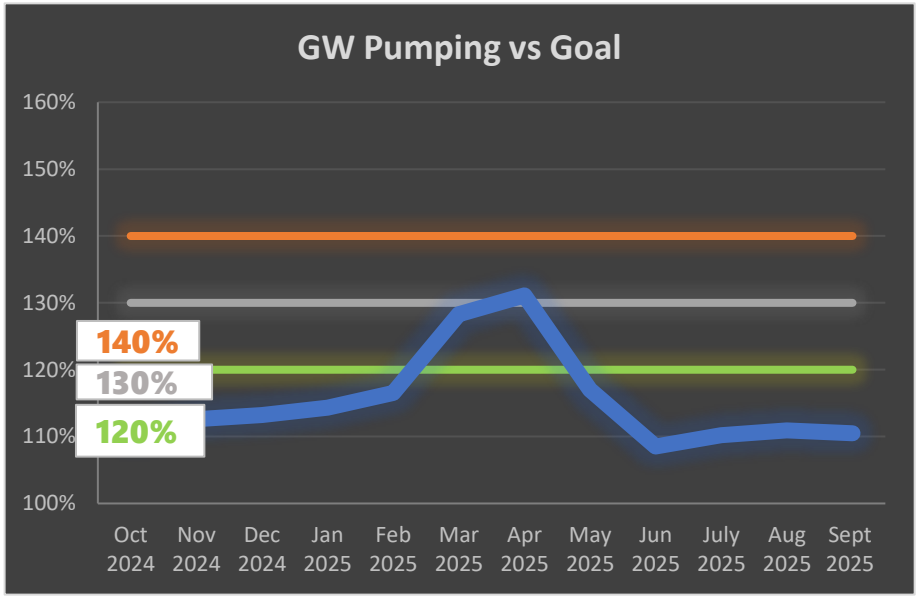
Water Authority Drought Stage: None

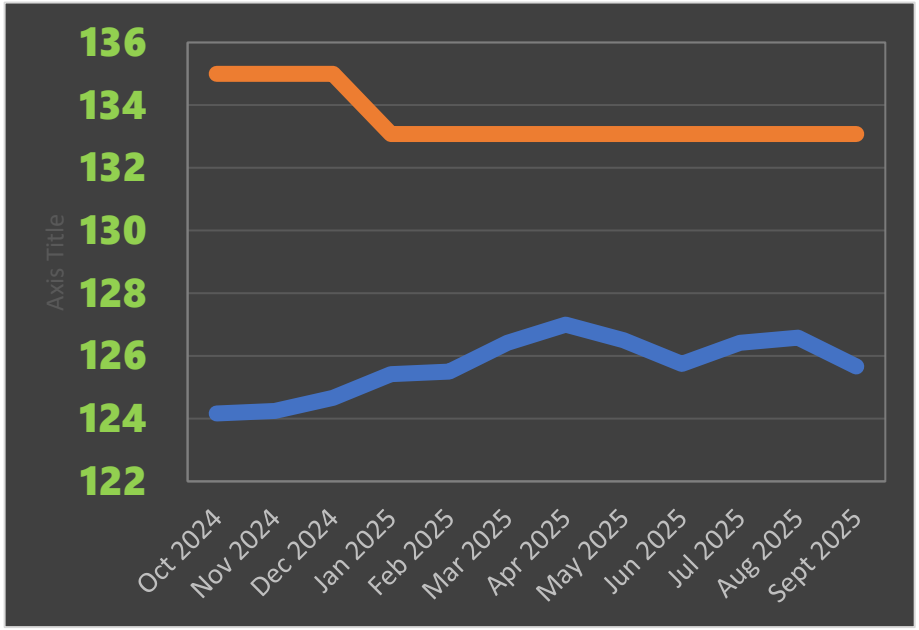
November 2025
(September Supply Data)



Groundwater Production

Surface Water Production





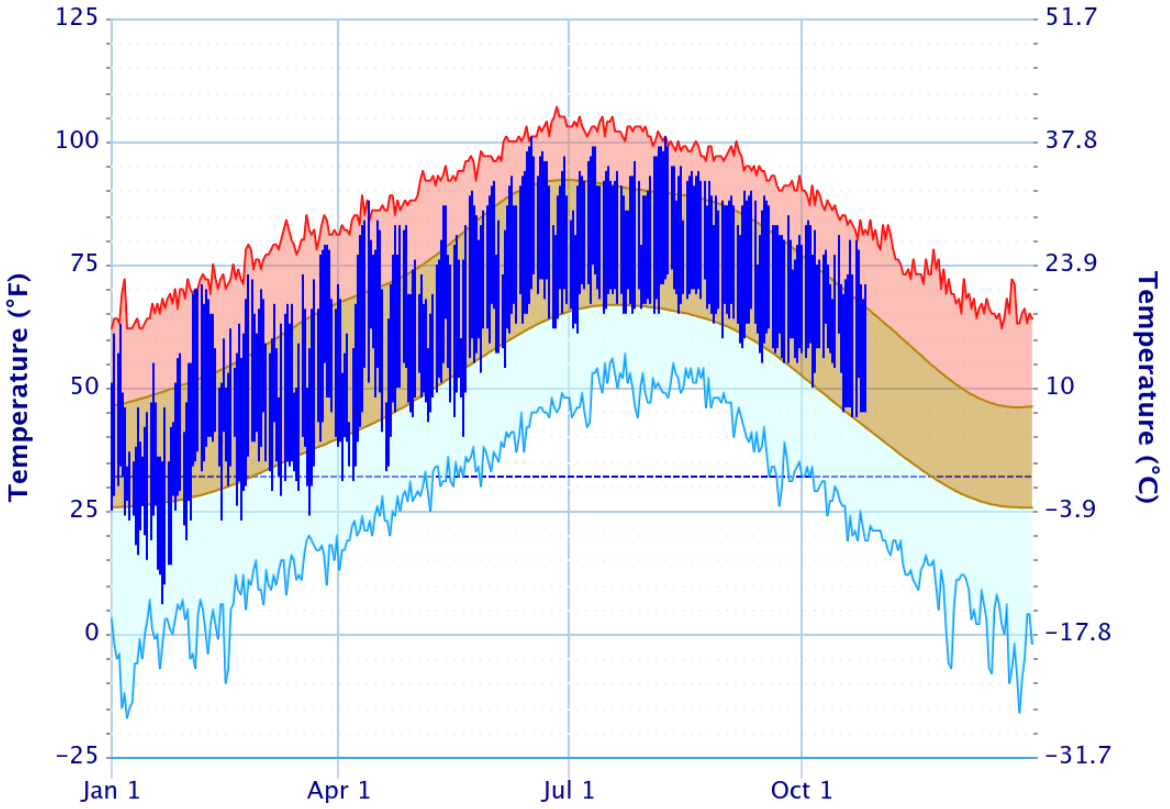
Drought Stages

Groundwater Production / GPCD	DSCI ≥ 300	Less than 120% of the Annual GW Production Goal	Between 120% and 130% of GW Production Goal	Between 130% and 140% of GW Production Goal	More than 140% of the GW Production Goal
0 to < 2 GPCD over the goal	Drought Advisory	Drought Advisory	Drought Advisory	Drought Advisory	Drought Watch
2-4 GPCD over the goal	Drought Advisory	Drought Advisory	Drought Watch	Drought Watch	Drought Warning
4-6 GPCD over the goal	Drought Advisory	Drought Advisory	Drought Watch	Drought Warning	Drought Emergency
> 6 GPCD over the goal	Drought Advisory	Drought Watch	Drought Warning	Drought Emergency	Drought Emergency

Temperature and Precipitation

Daily Temperature Data – Albuquerque Area, NM (ThreadEx)

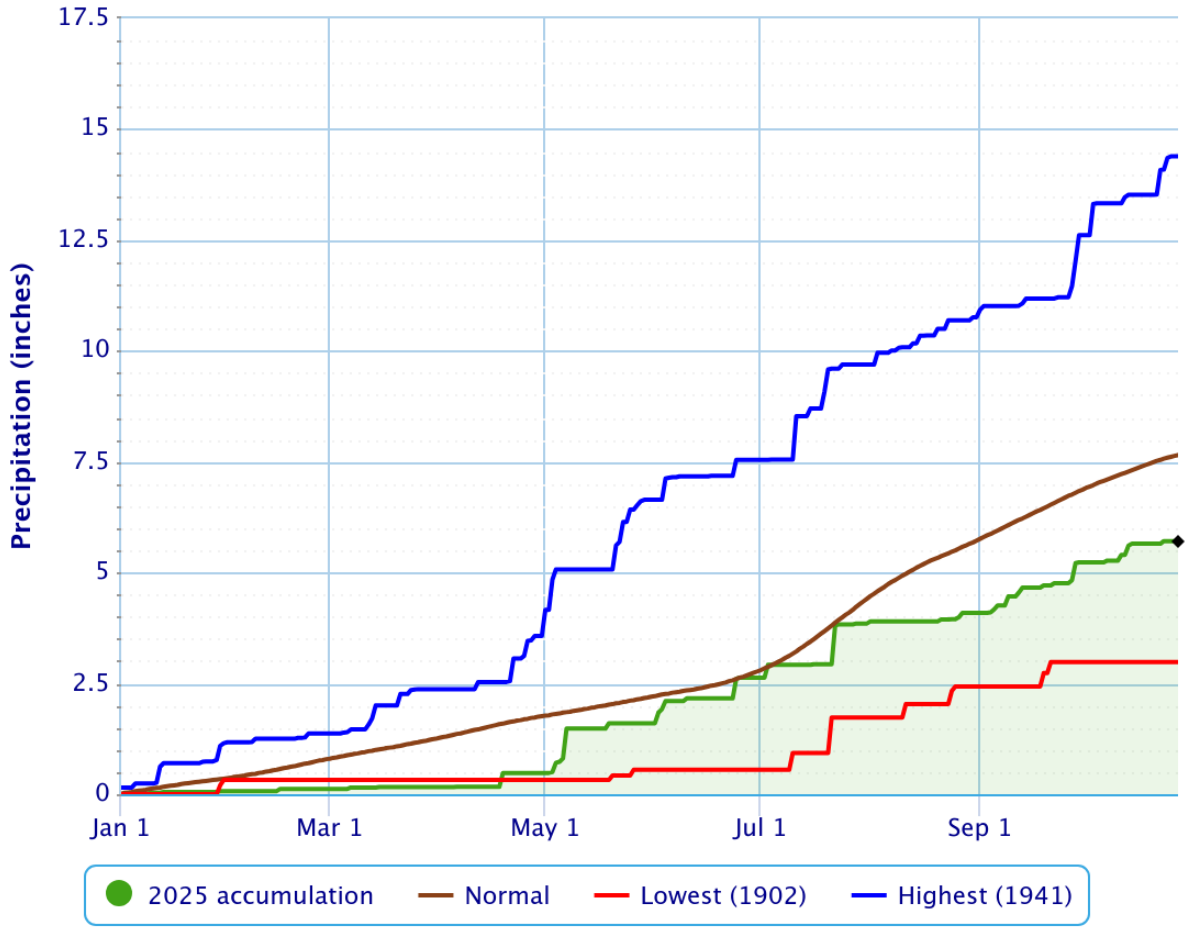
Period of Record – 1891-12-01 to 2025-10-26. Normals period: 1991-2020. Click and drag to zoom chart.



Powered by ACIS

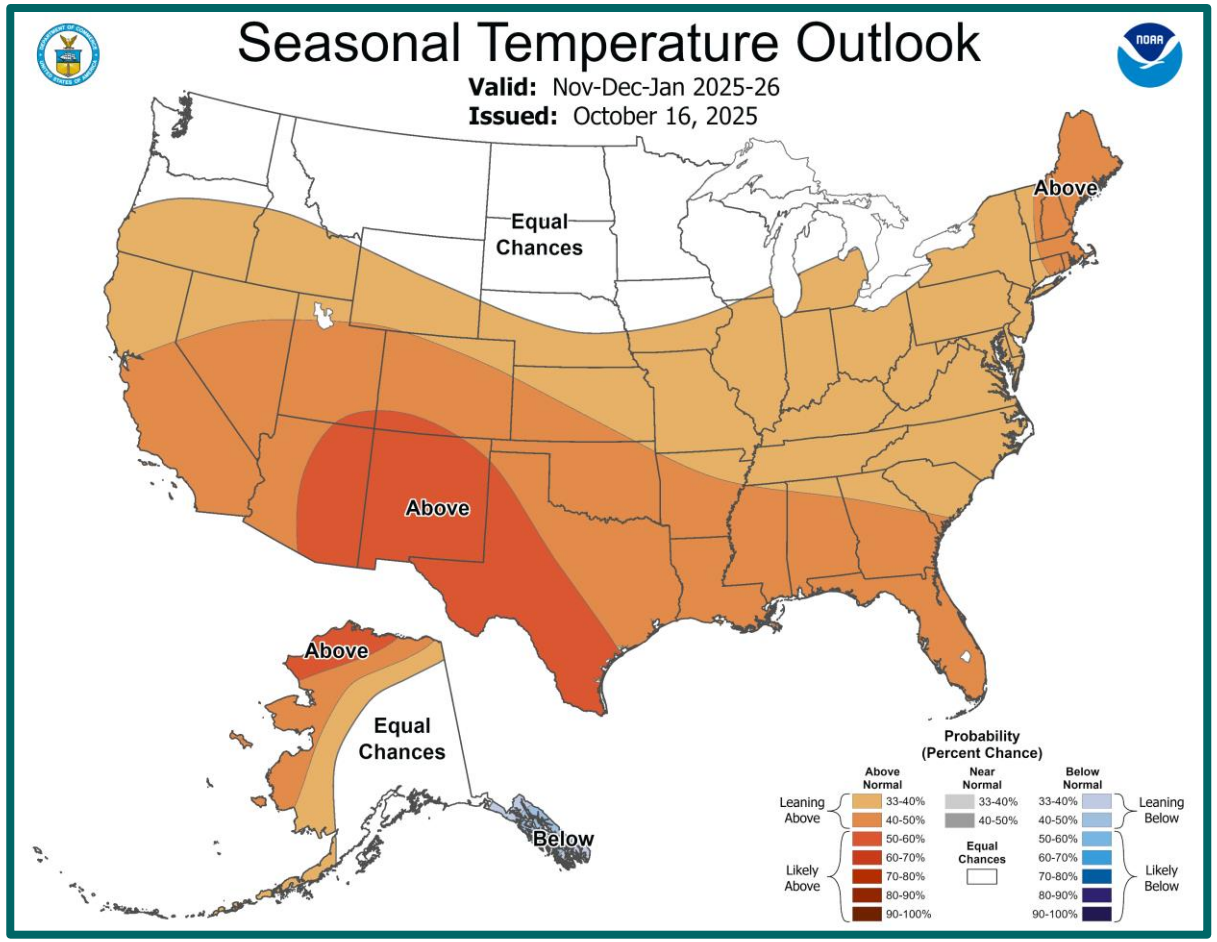
Accumulated Precipitation – Albuquerque Area, NM (ThreadEx)

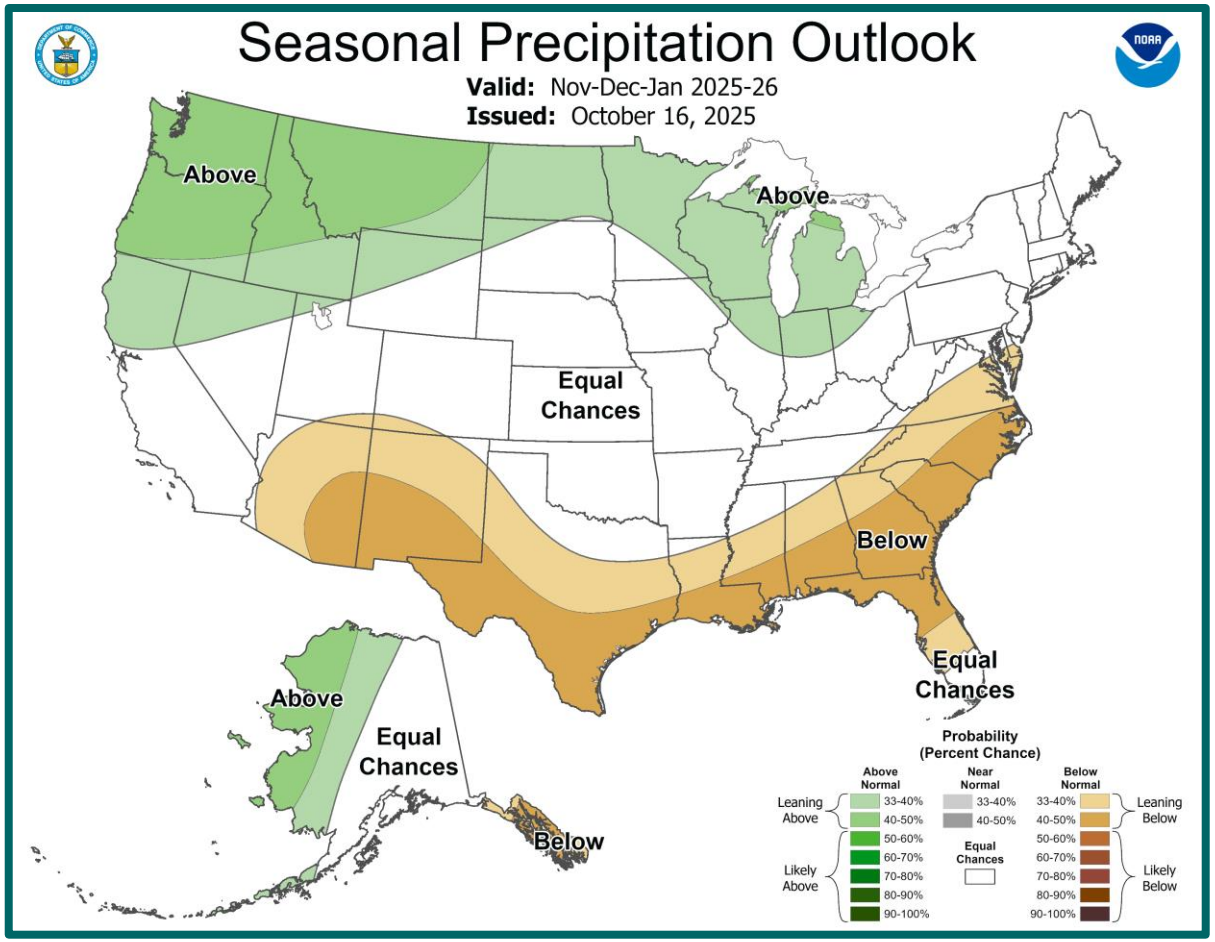
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



Powered by ACIS

Seasonal Outlook

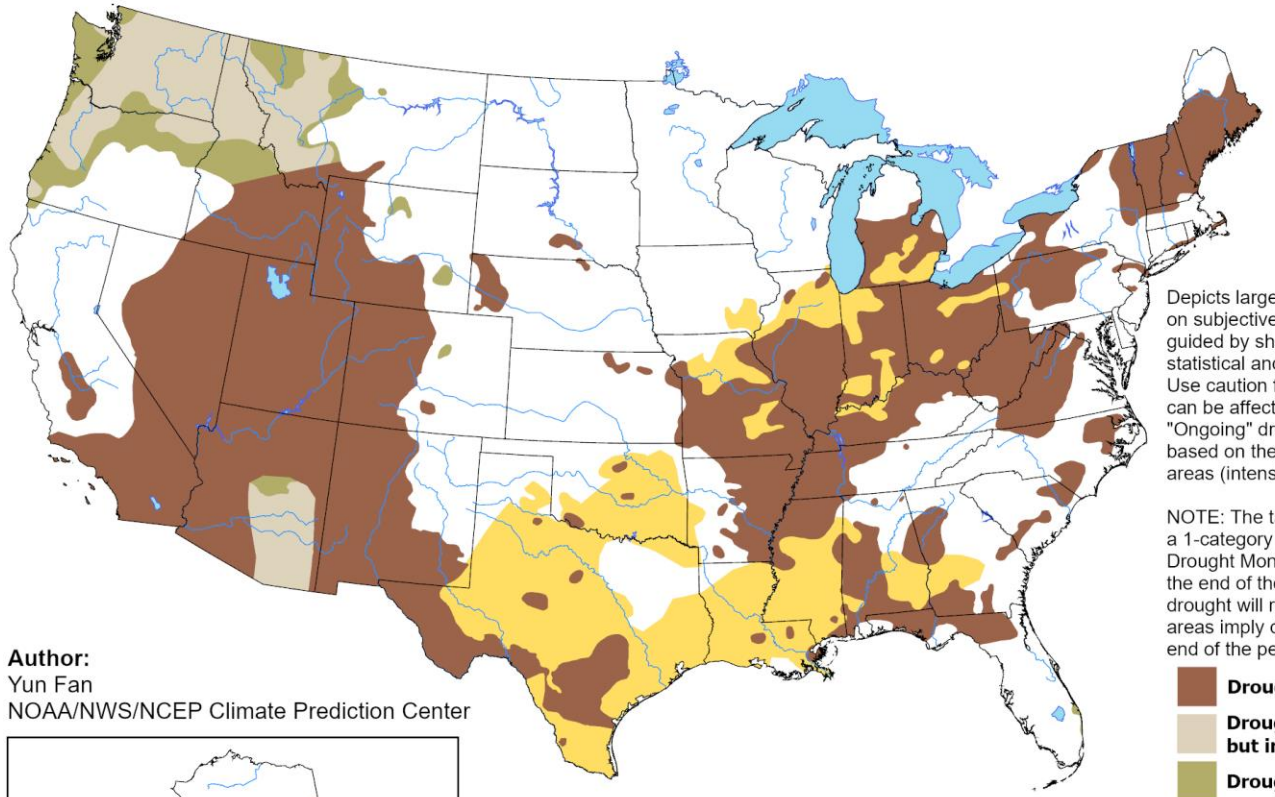




U.S. Monthly Drought Outlook

Drought Tendency During the Valid Period

Valid for October 2025
Released September 30, 2025

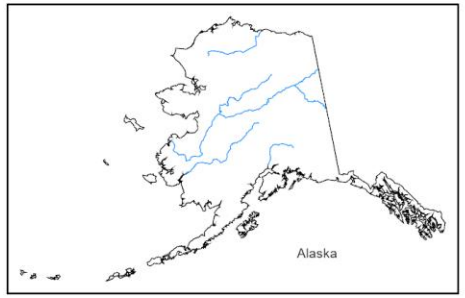


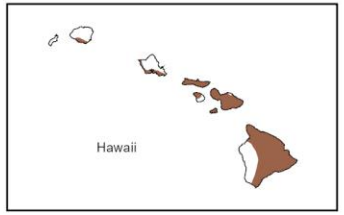
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

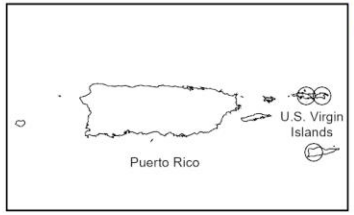
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- **Drought persists**
- **Drought remains, but improves**
- **Drought removal likely**
- **Drought development likely**
- **No drought**

Author:
Yun Fan
NOAA/NWS/NCEP Climate Prediction Center







https://go.usa.gov/3eZGd

Questions?