

Community Academy Water Resources

Peter Abraham, Water Utility Director
&

Conservation

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October 15, 2026



Town of Oro Valley

Oro Valley Water Utility – The Mission & Commission

Mission

To manage the available water resources to ensure the community has an adequate, safe and reliable water supply to sustain the Town's quality of life and support residential and economic development.

Water Utility Commission

- ▶ Composed of seven members that serve terms of 3-years.
- ▶ Commissioners are selected to give a balanced representation of residential and commercial/turf interests served by the Utility.
- ▶ Makes recommendations on OVWU items that require Council action
Examples: Water code changes, Water rate changes, etc.
- ▶ Commission meets the second Monday of each month at 5 pm.
- ▶ **Currently recruiting for one seat to begin service on January 1, 2027.**





Town of Oro Valley

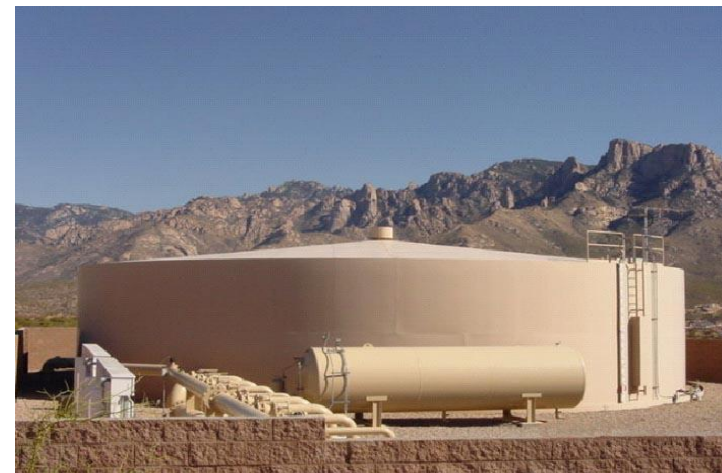
Oro Valley Water Utility - “Yesterday” & “Today”

OVWU Yesterday...

- ▶ 1996 - Town purchased 2 water companies
 - ▶ Canada Hills Water Company & Rancho Vistoso Water Company
 - ▶ 9,800 connections serving 26,000 residents
 - ▶ Solely dependent on groundwater as the only source of supply

OVWU Today...

- ▶ Successfully operated Enterprise fund of the Town for over 30 yrs.
- ▶ Has over 21,800 service connections serving over 48,500 residents
- ▶ Diverse water resource portfolio
 - ▶ Groundwater (All uses)
 - ▶ CAP water – 2012 (All uses)
 - ▶ Reclaimed water -2005 (Turf irrigation)





Town of Oro Valley

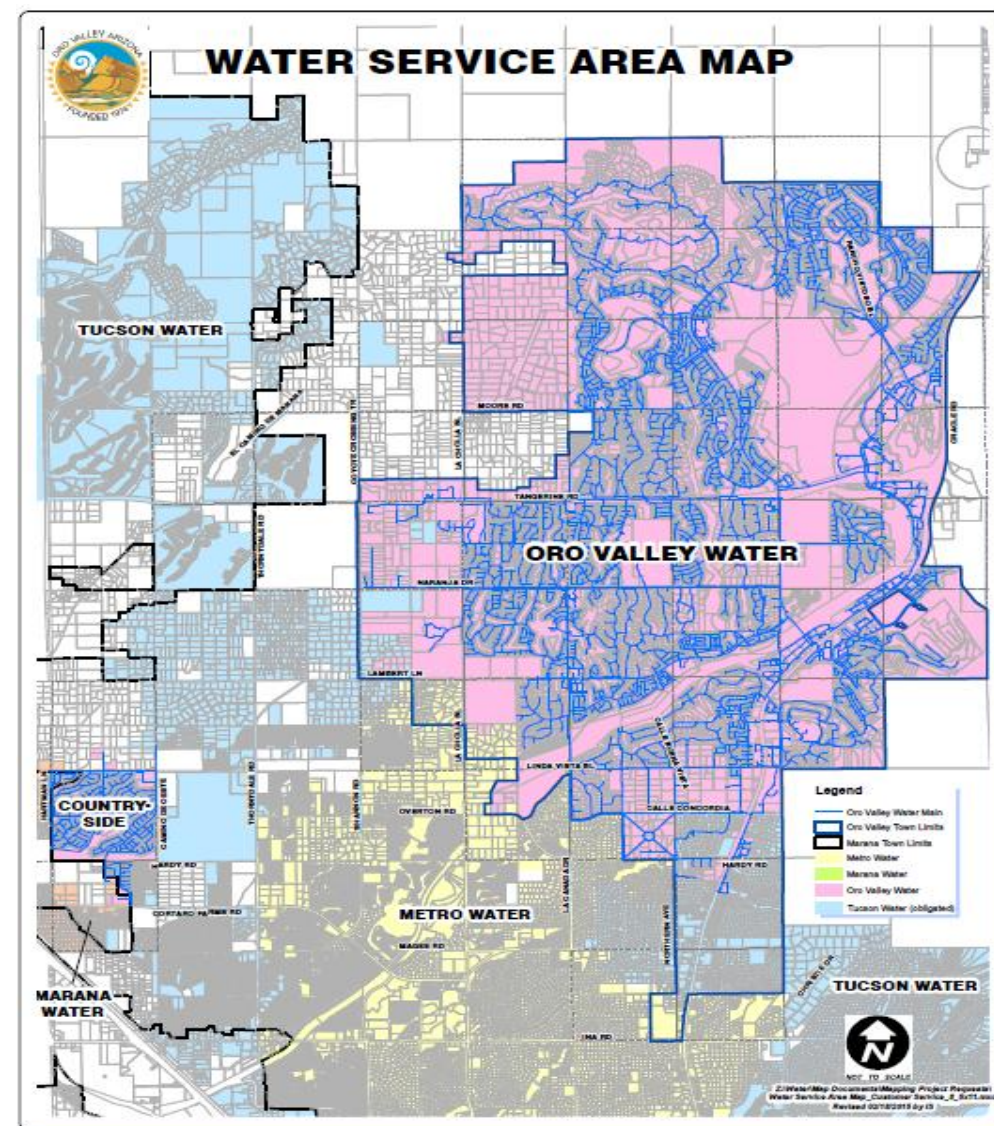
Service Area & Assets

The Oro Valley Water Utility has ...

- ▶ 2 service areas
- ▶ A service area of 33 Sq. miles – Not all of O.V.
- ▶ 18 production wells
- ▶ 26 booster stations
- ▶ 12 reservoirs
- ▶ 385 miles of distribution mains
- ▶ 4 recovered CAP interconnects
- ▶ 2 water systems
 - ▶ Potable & Reclaimed

The Oro Valley Water Utility is...

- ▶ 2nd largest Municipal Water Service provider in Southern AZ
- ▶ Operated and maintained by a staff of 40 water professionals





Groundwater - 100-year assured water supply – What does it mean?

In July of 2027 the Utility received a Designation of Assured Water Supply (DAWS)

- ▶ The DAWS takes into consideration the use of groundwater only and stipulates that Oro Valley:
 - ▶ Has the groundwater supply **physically** available for 100-years.
 - ▶ Has the groundwater supply **legally** available for 100-years.
 - ▶ Has demonstrated that the groundwater supply is **continuously** available for 100-years.
 - ▶ Has demonstrated that the groundwater supply is of sufficient **quality**.
 - ▶ Has demonstrated that the groundwater **supply is** consistent with the management plan of the area.
 - ▶ Has demonstrated that groundwater **supply use** is consistent with the management goal of the area.
 - ▶ Has demonstrated that the Utility has the **financial capability** to deliver the groundwater resources.
- ▶ The Decision and Order states that ***“Oro Valley has demonstrated that a total of 11,435.77 acre-feet per year of groundwater will be physically, continuously and legally available for at least 100 years”***.
- ▶ For context in calendar year 2025 the potable demand was 7,492 acre-feet. Water resource models project:
 - ▶ At town buildout the potable demand will be 8,286 acre-feet per year.
 - ▶ Summary: If groundwater was the only source of supply it would be depleted after 145 years.



Town of Oro Valley

Colorado River Water – Colorado River System - Yesterday

- ▶ Colorado River system is 1,450 miles long, Rocky Mountains to Gulf of California
- ▶ Provides water to seven US states & Mexico
- ▶ **Upper Basin States:** Colorado, New Mexico, Utah and Wyoming
- ▶ **Lower Basin States:** Arizona, California and Nevada
- ▶ 7.5 MAF/year for each
- ▶ Lower Basin Colorado River Allocations
 - ▶ California: 4.4 MAF/Yr.
 - ▶ Arizona: 2.8 MAF/Yr. (1.6 MAF/Yr. CAP)
 - ▶ Nevada: 0.3 MAF/Yr.
- ▶ Supplies water for 40 million people
- ▶ Annual delivery volumes to lower basin States determined by water surface elevations of Lake Mead
- ▶ In the midst of a 26-year drought





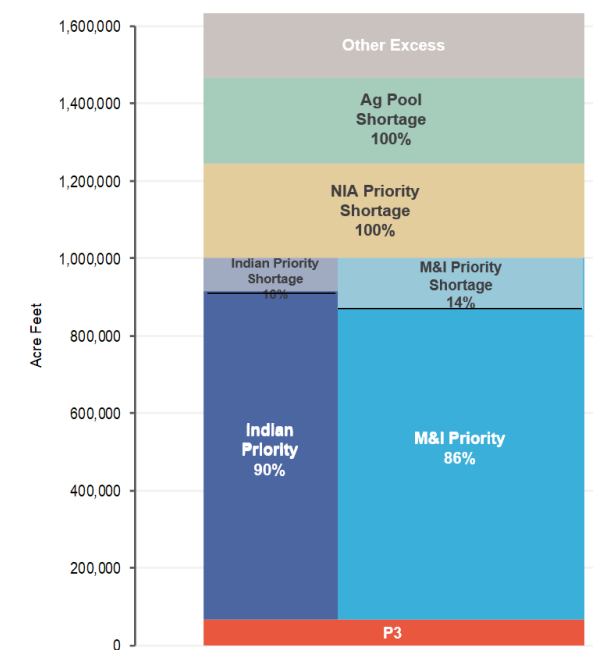
Town of Oro Valley

Colorado River Water - Colorado River System - Today

Bureau of Reclamations Record of Decision – Operations Framework & Operating Guidelines

- ▶ Provides 2027-2036 Decision Framework for Colorado River Operations
 - ▶ Operating Guidelines will be issued in 2-yr intervals.
 - ▶ CY's 2027 & 2028 Arizona can expect a 760 KAF reduction in Colorado River water Deliveries.
 - ▶ CY's 2027 & 2028 municipalities can expect a 14% cut to their CAP allocation.
 - ▶ Larger cuts possible in future years if required to stabilize the Colorado River.

	Arizona	California	Nevada	Total Lower Division States
2027	760 KAF	440 KAF	50 KAF	1,250 KAF
2028	760 KAF	440 KAF	50 KAF	1,250 KAF
Total Reductions 2027-2028				2,500 KAF
Voluntary Conservation 2026-2027-2028	300 KAF	300 KAF	100 KAF	700 KAF
Total Reductions and Conservation	1,820 KAF	1,180 KAF	200 KAF	3,200 KAF



Preliminary data and analysis; for illustrative purposes only



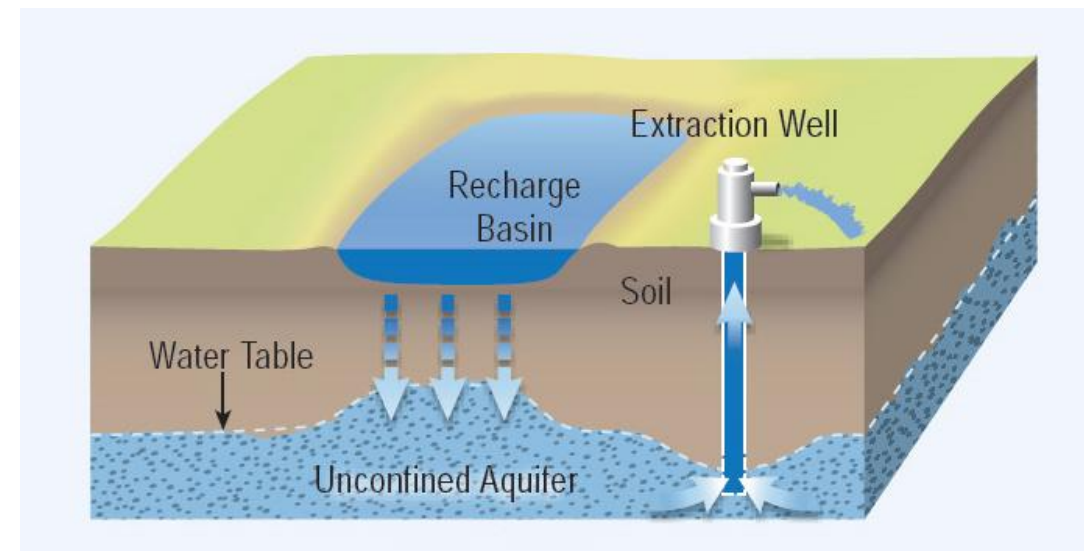
Water Shortage Preparedness – Recharge, Recovery & Storage



- ▶ CAP Recharge and recovery
 - ▶ CAP water delivered to nearby recharge basins
 - ▶ CAP water percolates through soil & recharges groundwater
 - ▶ Recovery wells pump recharge groundwater to service areas
 - ▶ Recharged groundwater not pumped accumulates in the form of LTSC

- ▶ Storage

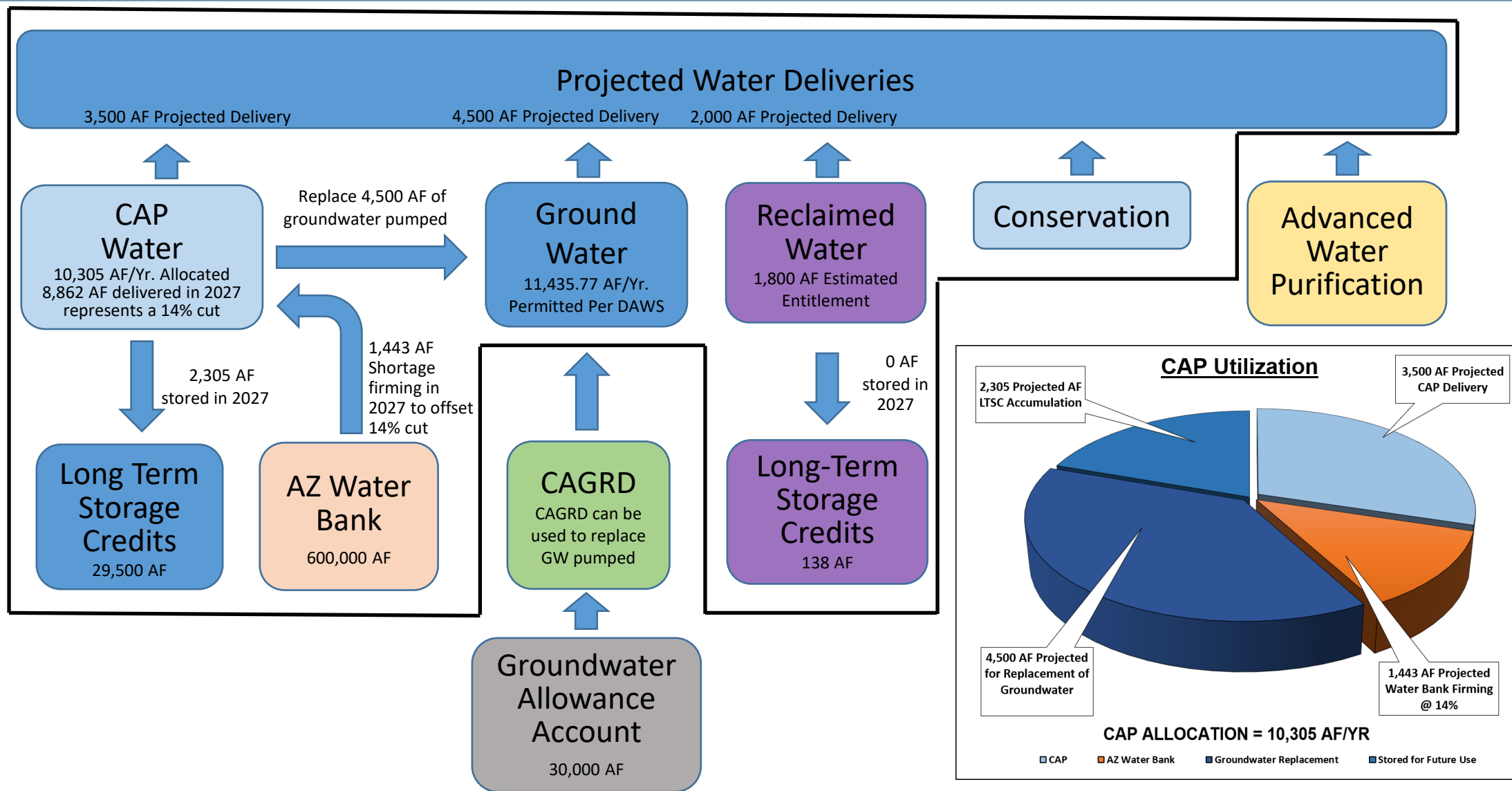
- ▶ For over a decade the OVWU has recharged groundwater in nearby aquifer storage facilities
 - ▶ OVWU has always recovered less water than stored annually
 - ▶ OVWU has accrued years of LTSC





Town of Oro Valley

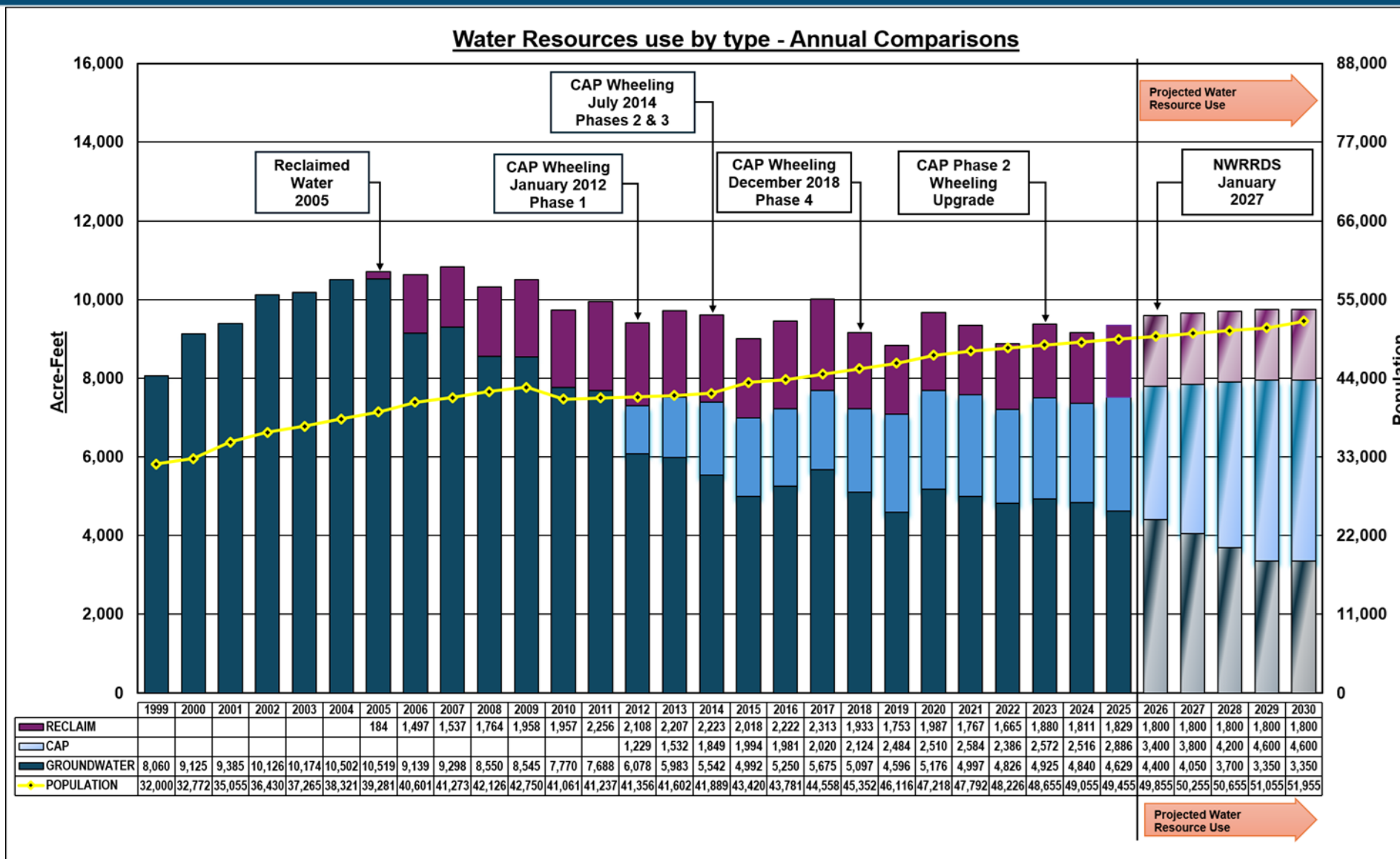
OVWU 2027 Water Resource Utilization Model Projections





Putting it all together - OVWU Water Resources Utilization (Past/Present/Future)

Town of Oro Valley

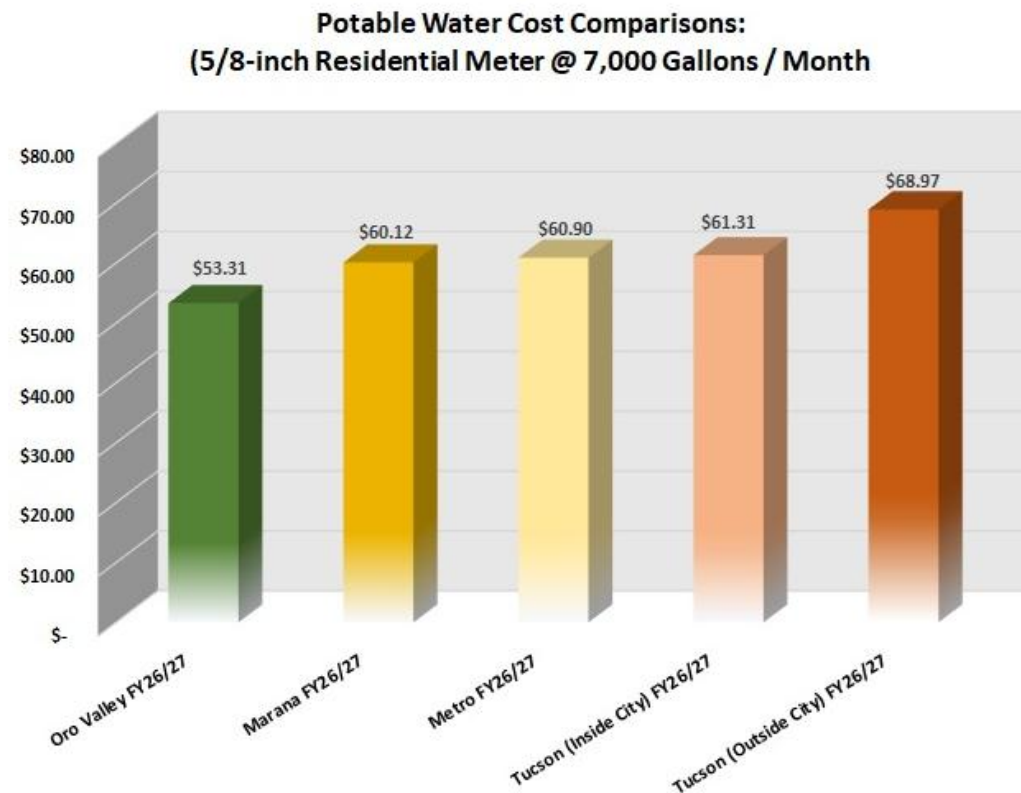




Drinking Water Cost Comparisons

Monthly Water Bill Comparisons to Other Water Providers:

- ▶ 84% of Oro Valley Water Utility customers have a 5/8-inch meter and consume an average of 7,000 gallons per month
- ▶ Continued upward pressure on water resource & operational costs for all water service providers
- ▶ The community can expect 3%-5% annual water rate increases every year in the near future





Looking Forward

- ▶ With the support of the Community and Town Leadership the Water Utility will...
 - ▶ Continue it's 30-year tradition of successfully managing, growing and firming the Communities water resource portfolio
 - ▶ Continue to work with water professionals and law-makers to reach consensus on sound water policies, regulations and management strategies
 - ▶ Continue to responsibly implement incremental rate adjustments as necessary to match the pace of increasing water resource costs
 - ▶ Continue to meet the water resource needs of the community





Questions

Town of Oro Valley





Community Academy: Water Conservation at Home

Class 9
October 15, 2026

Town of Oro Valley

Earth – Water Planet

An abundance of water?

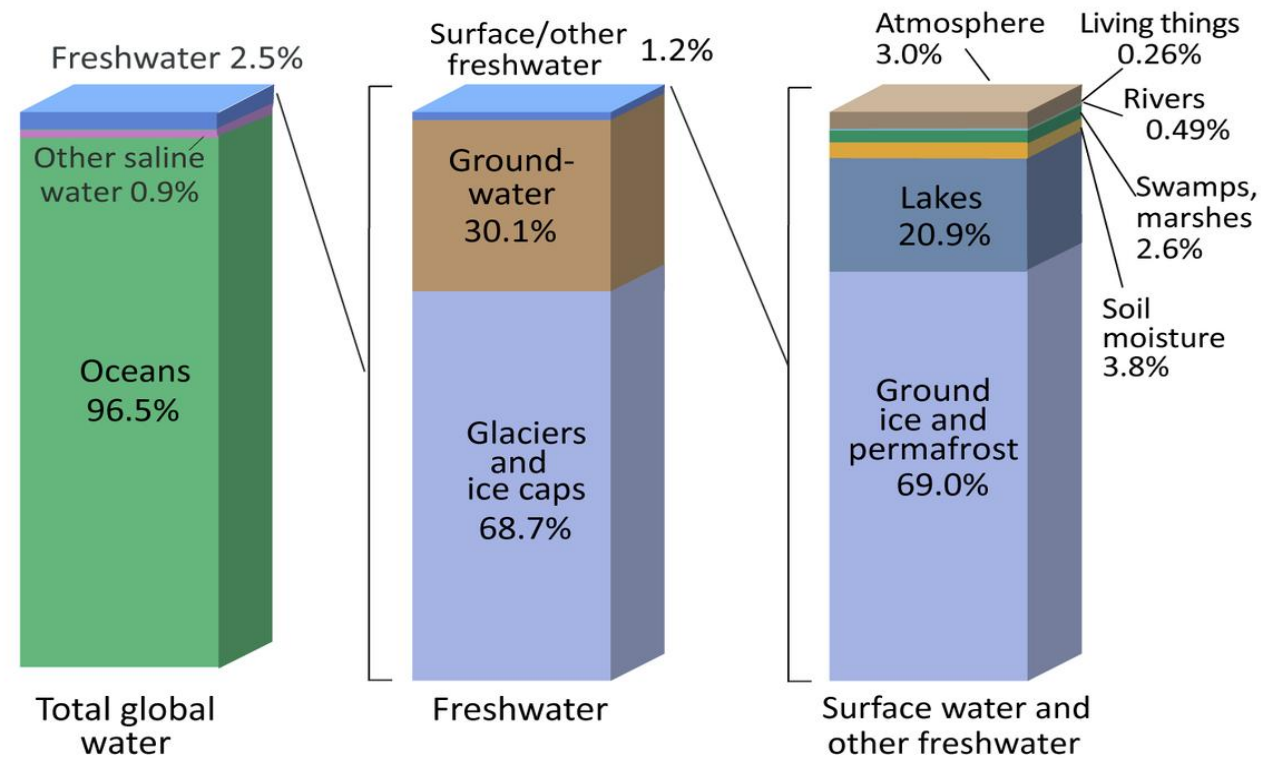
- ▶ 71% of the Earth's surface is covered by water.
- ▶ Oceans hold 96.5% of all water on Earth.
- ▶ Only 2.5% of the Earth's water is freshwater.
- ▶ Nearly all of that freshwater, about 98.8%, is locked in ice, the atmosphere, or in the ground.
- ▶ Just slightly more than 1.2% of all freshwater is surface water.





Earth – Water Planet

Where is Earth's Water?



Credit: U.S. Geological Survey, Water Science School. <https://www.usgs.gov/special-topic/water-science-school>
Data source: Igor Shiklomanov's chapter "World fresh water resources" in Peter H. Gleick (editor), 1993, *Water in Crisis: A Guide to the World's Fresh Water Resources*. (Numbers are rounded).



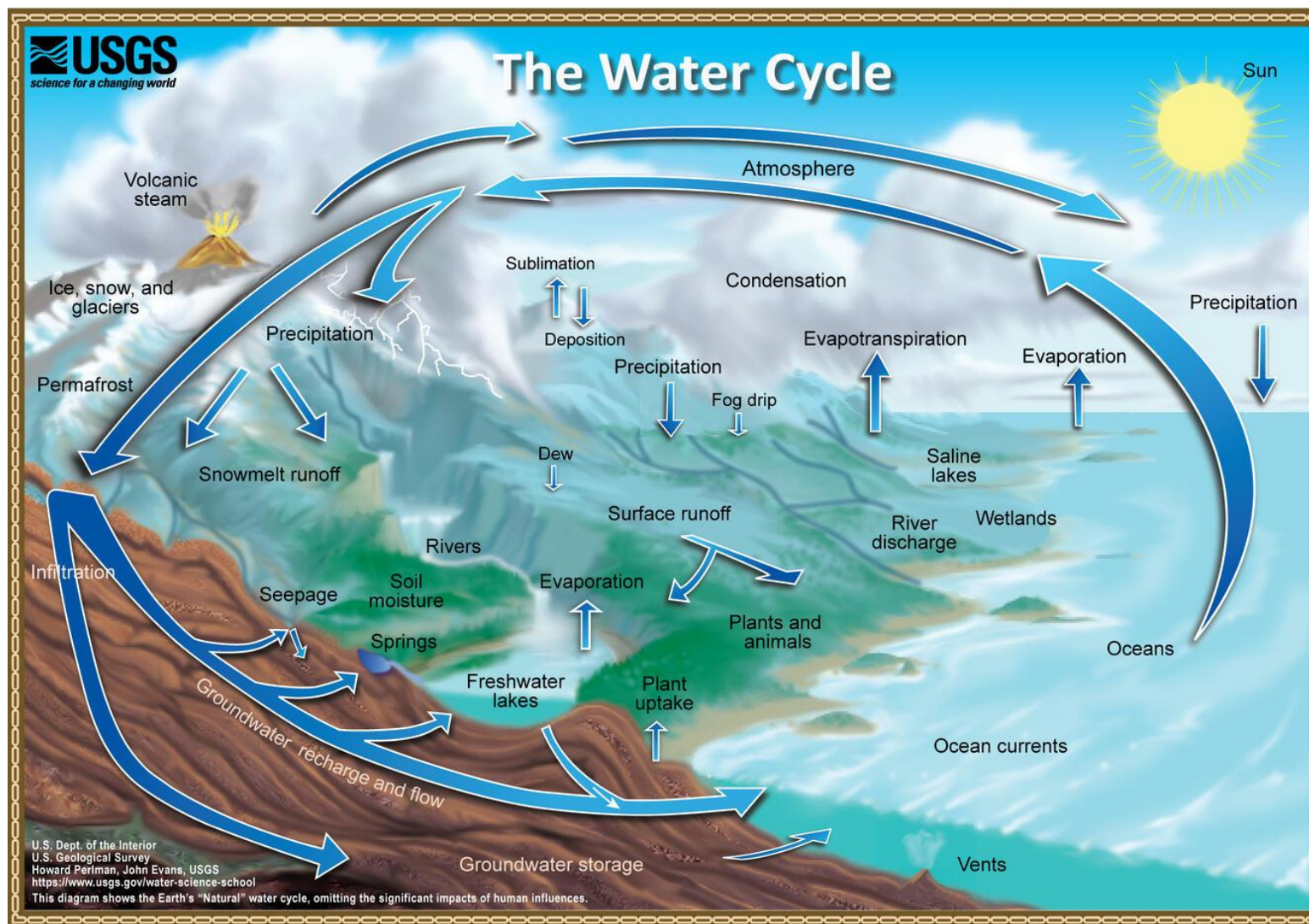
The Water Cycle

“Flow, Fall, Repeat”

- ▶ The continuous movement of water on, above, and below the surface of the Earth.
- ▶ It is powered by the sun and driven by gravity.
- ▶ Key Stages
 - ▶ Evaporation – Water turns into vapor from oceans, lakes, and rivers.
 - ▶ Condensation – Water vapor cools to form clouds.
 - ▶ Precipitation – Water falls as rain, snow, sleet, or hail.
 - ▶ Collection – Water gathers in oceans, rivers, lakes, and groundwater.
- ▶ Why is it important?
 - ▶ Regulates the Earth’s temperature.
 - ▶ Supports all life on the planet.
 - ▶ Distributes fresh water around the planet.

The Water Cycle

Town of Oro Valley





Water Conservation

Why is Water Conservation important?

- ▶ **Finite Supply** - Water is a finite resource essential for life, health, and the environment. A very small amount of the planet's water is available for human use.
- ▶ **Climate Change Impacts** - Changing rainfall patterns, droughts, and rising temperatures can reduce the availability of water in many regions. Water Conservation practices can help communities adapt to these challenges.
- ▶ **Growing Demand** - As global population increases, so does demand for water. Conservation is a tool to help ensure those needs are met.
- ▶ **Ecosystem Health** – Rivers, Lakes, and Wetlands need adequate water to support life. Overuse can dry out ecosystems and harm biodiversity.

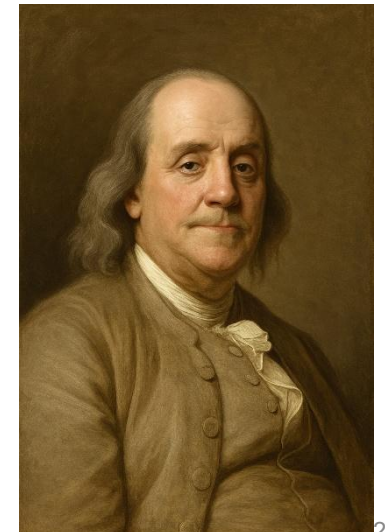


Water Conservation

Why is Water Conservation Important?

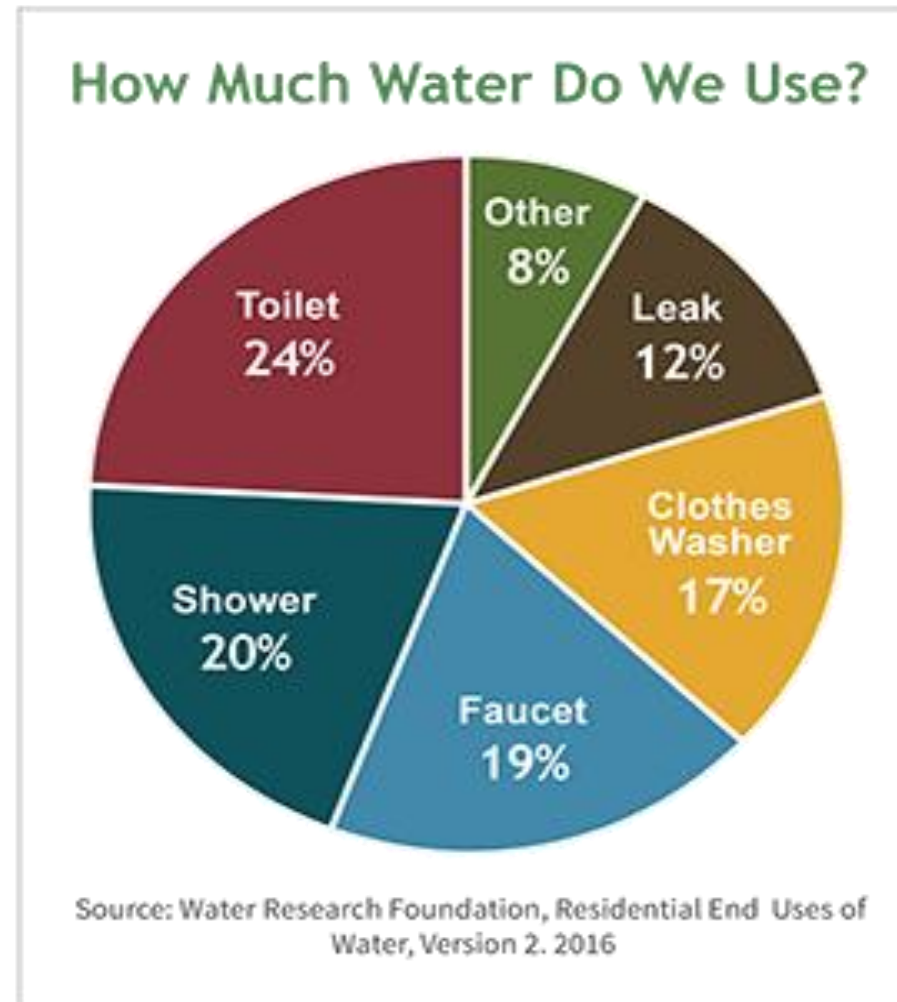
- ▶ Energy and Cost Savings – Pumping, treating, and heating water requires energy. Using less water reduces energy consumption and lowers utility bills.
- ▶ Food Security – Agriculture uses about 70% of global freshwater. Efficient water use helps ensure stable food production reducing the risks of shortages.
- ▶ Future Generations – Conserving water today helps ensure clean and reliable supplies for future generations.

“When the well is dry, we know the worth of water.” - Benjamin Franklin



Household Water Use

Breakdown of where water is used most in homes



Water-Saving Tips by Area

Bathrooms

- ▶ Fix leaks!
- ▶ A dripping faucet can waste about 3,000 gallons per year – enough for 180 showers!
- ▶ A running toilet can waste more than 200 gallons per day, which adds up to over 70,000 gallons per year if left unrepaired.
- ▶ A running tap uses about 2-4 gallons of water per minute. Turn it off while brushing teeth or shaving!





Water-Saving Tips by Area

Bathrooms

- ▶ Standard older toilets use 3.5-7 gallons per flush (gpf).
- ▶ Modern low-flow toilets use 1.28-1.6gpf.
- ▶ For the average family of four this can save up to 13,000 gallons per year – particularly if replacing multiple old toilets.
- ▶ Older Showerheads use 3-5 gallons per minute (gpm).
- ▶ Low-flow models use 1.5-2.0gpm.
- ▶ This can save per person up to 2,700 gallons per person per year based on a 10-minute shower.



Water-Saving Tips by Area

Kitchen

- ▶ Use the dishwasher efficiently (full loads, energy-saving mode).
- ▶ Modern dishwashers are very good for water conservation when used efficiently. Modern Energy-Star rated dishwashers use about 3-4 gallons of water per cycle, which is often less than washing dishes by hand (@20 gallons).
- ▶ Scrape dishes instead of rinsing before washing – Doing so can save up to 20 gallons of water per load.
- ▶ Install aerators on faucets – Faucet aerators reduce water flow by mixing air into the stream, cutting water use by up to 50%. Easy and low-cost way to save water and lower bills.



Water-Saving Tips by Area

Laundry Room

- ▶ Use high efficiency washing machines – High-efficiency washing machines reduce water use by up to 70% compared to older models.
- ▶ Only wash full loads – Running full loads instead of small ones and using shorter wash cycles can also help conserve water without sacrificing cleanliness.
- ▶ Adjust water level settings – Be sure to select the proper water level for the load.





Water-Saving Tips by Area

Outdoors (Yard & Garden)

- ▶ Water early morning or late evening – Watering in the early morning or late evening reduces evaporation, allowing more water to reach plant roots.
- ▶ Use drought-tolerant plants and native landscaping – local nurseries are an excellent source of information on drought-tolerant plants and native plants which thrive in our area.
- ▶ Install drip irrigation – Drip irrigation conserves water by delivering it directly to plant roots, reducing evaporation and runoff. It uses 30-50% less water than sprinklers and is ideal for dry climates.
- ▶ Collect rainwater with barrels – Rain Barrels collect rainwater from rooftops for outdoor use reducing water bills and conserving resources.
- ▶ Regularly walk out the system inspecting for leaks.



Water Saving Tips by Area

Xeriscape: Beautiful, Sustainable Landscaping

- ▶ Traditional landscapes (especially turf/lawns) require an excessive amount of water, stressing local water supplies and increasing costs.
 - ▶ Up to 50% of residential water is used for outdoor landscaping.
- ▶ Xeriscaping is a smart approach. Xeriscape focuses on efficiency, natural beauty and native resilience.
- ▶ It's not just rocks and cactus! It's mindful design.
- ▶ Key Benefits
 - ▶ Water savings (up to 50-75% reduction).
 - ▶ Lower maintenance time – less mowing and weeding
 - ▶ Reduced fertilizer/pesticide use
 - ▶ Lower utility bills

Xeriscape – The Seven Principles

1. Planning and Design

- ▶ Planning and Design: Create a detailed blueprint of the landscape layout.
 - ▶ Use graph paper and a measuring tape to draw a to-scale diagram of your entire property. A common scale is 1 inch = 10 feet
 - ▶ Include all permanent features of the property: your house, driveway, patios, walkways and other permanent structures.
 - ▶ Mark the North arrow for orientation
- ▶ Analyze Site Conditions
 - ▶ Sun/Shade Exposure: Note on the property areas that receive full sun (6hrs), partial sun, and full shade.
 - ▶ Slopes and Drainage: Observe how water naturally flows and pools. Use this to place high-water-use plants.





Xeriscape – The Seven Principles

2. Soil Improvement

- ▶ Amend the soil for better absorption and root growth.
- ▶ Determine Soil Type: Is it heavy clay (which holds water but drains slowly), or fast-draining sand/gravel (which retains little water)?
- ▶ Spread a 1-3-inch layer of organic material (like high quality compost or well-rotted manure) over the area and work into the top 6-8 inches of existing soil.
- ▶ Caution with Native Plants – Many truly native plants are adapted to lean, poor soil. In some cases, adding too much rich compost can be detrimental.
- ▶ Use mulch extensively – Adding mulch helps retain soil moisture and prevent water loss as quickly through evaporation. Wood chips, bark, and gravel are all good options.



Xeriscape – The Seven Principles

3. Efficient Irrigation

- ▶ Utilize Drip Irrigation: This is the most highly recommended method for trees, shrubs, flowers, and ground cover in a xeriscape.
 - ▶ Drip Irrigation delivers water slowly and directly to the plant's root zone via a network of tubes and emitters.
 - ▶ Benefits include minimizing water loss from evaporation and wind (30-70% less water loss than with sprinklers), reduced weed growth, and promotes a healthy soil-water-air balance.
- ▶ Bubblers/Micro-sprayers: These are suitable for individual large plants or densely planted beds, delivering a low volume of water directly to the base of the plant.



Xeriscape – The Seven Principles

4. Plant Selection

▶ The “Right Plant, Right Place” Principle

- ▶ The golden rule of xeriscaping. The goal is to choose plants that naturally thrive in your site’s specific conditions, minimizing the need for supplemental water, excessive soil amendments, or extensive care.
- ▶ Native Plants: These are excellent choices that handle the local conditions and require the least intervention once established.
- ▶ Drought/Tolerant Plants: These are species from other arid regions of the world that are well-adapted to dry conditions.
- ▶ Site-Specific Factors: Sun exposure, soil type and microclimates.
- ▶ Limiting Turfgrass
- ▶ Only keep a lawn where it has a functional purpose (play area for example).

Xeriscape – The Seven Principles

5. Turf Alternatives/Limitation

- ▶ Replace high water using lawn areas
 - ▶ Check with Nurseries for alternative choices
 - ▶ Consider Hardscapes and Non-Living alternatives such as pavers, gravel, or river rock. They help the soil retain moisture, suppress weeds, and serve as excellent accents around planted beds.
 - ▶ Artificial Turf: While it requires a significant initial investment, it mimics the look of grass without the maintenance and is a viable alternative in our area.





Xeriscape – The Seven Principles

6. Mulching

- ▶ Apply a layer of organic or inorganic material to the soil surface to conserve moisture, moderate soil temperature, and suppress weeds.
- ▶ Mulch acts as a protective blanket. It significantly reduces water evaporation from the soil.
- ▶ Use materials like shredded bark, wood chips, gravel or decomposed granite at a depth of 2-4 inches. Mulch also prevents soil erosion and keeps roots cool in the summer.

Xeriscape – The Seven Principles

7. Appropriate Maintenance

- ▶ Adjust the irrigation schedules seasonally.
- ▶ Inspect Drip System regularly. Repair all discrepancies.
- ▶ Prune plants regularly to reduce water needs and promote air circulation.
- ▶ Avoid over-fertilizing, which can be detrimental.





Smart Technology and Tools

Outdoors (Yard & Garden)

- ▶ Smart irrigation controllers – adjust watering based on weather and soil conditions, reducing outdoor water use by 20-50%. They prevent overwatering, save money, and are ideal for dry climates.
- ▶ Leak detection systems – monitor water use, alert you to leaks, and can prevent waste and damage. They help conserve water, lower bills, and protect your home.

Smart Technology and Tools

Rainwater Harvesting

- ▶ What is Rainwater Harvesting? The practice of collecting and storing rainwater for a variety of uses.
 - ▶ Captures water before it becomes runoff, reducing the demand on public water supplies.
- ▶ How a Rainwater Harvesting System works.
 - ▶ Catchment: The roof collects the rain.
 - ▶ Conveyance: Gutters and Downspouts guide the water.
 - ▶ Filtration: Removes debris.
 - ▶ Storage: A tank or cistern holds the water.
 - ▶ Distribution: A pump or gravity-fed system delivers the water for use



Smart Technology and Tools

Rainwater Harvesting

► Benefits

- Environmental: Reduces the water consumption and energy required for water treatment.
- Economic: Lowers your water bill.
- Social: Promotes water independence and community resilience.

► Uses

- Garden and landscape irrigation.
- Flushing toilets.
- Laundry use.
- Cleaning.





Smart Technology and Tools

Spry IDM

▶ Spry IDM – A powerful tool provided at no cost to customers by Oro Valley Water Utility. Spry IDM allows users to monitor their water usage, receive alerts for leaks or unusual spikes, and forecast future bills.

▶ <https://www.watercs.orovalleyaz.gov/login>



Smart Technology and Tools

Spry IDM – A Tool For Conservation

[Home](#)
Welcome

Account Number
Address
[View Account Details](#)
[My Accounts](#)

Account Balance
Current Balance **\$0.00**
Total Balance (Due 09/28/2026) **\$0.00**
[View Current Bill](#)
[Make a Payment](#)

Additional Options

Paperless Billing
Save paper and view and receive your bills online.
[Sign Up](#)

AutoPay
Preauthorize your payments so you never forget about a bill.
[Sign Up](#)

My Wallet
Enter your payment information once and save it for quick bill payments.
[Manage](#)

Water Usage Summary
Current Usage

Consumption (Aug) 6000 gal	Days 30 days	Average Daily Consumption (Aug) 200 gal
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Usage History

Consumption Last Billing Period (Jul) 5000 gal	Average Daily Consumption Last Billing Period (Jul) 161 gal
Consumption Last Year (Aug) 4000 gal	Average Daily Consumption Last Year (Aug) 138 gal

Water Consumption Profile
[View My Interval Data](#)
Date Range
Please enter the date range in the format MM/DD/YYYY to MM/DD/YYYY.
09/01/2025 - 09/21/2026

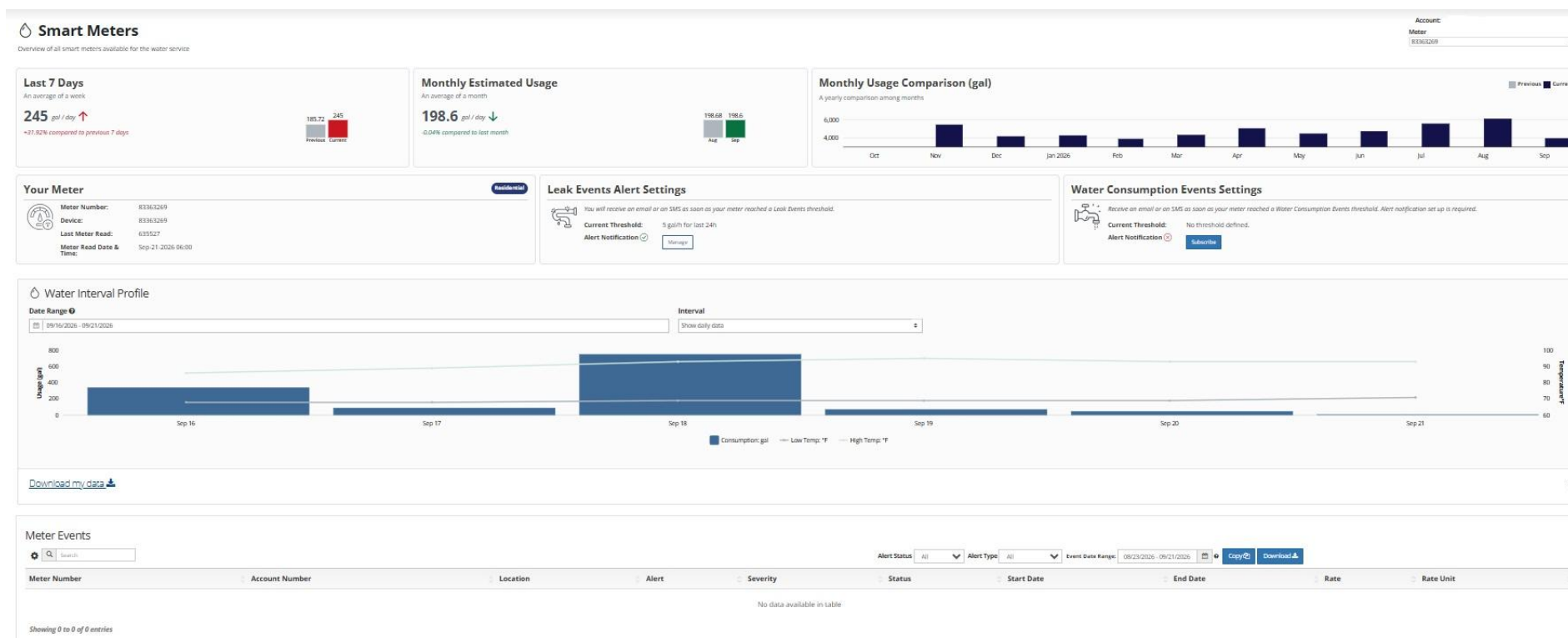
This is the total consumption (potable + reclaimed). To see a breakdown by service, click on ["My Interval Data"](#).

Have more accounts? Manage all your accounts under one profile. [Link an account in your profile.](#)



Smart Technology and Tools

Smart Meters Page – Monitor Your Water Use

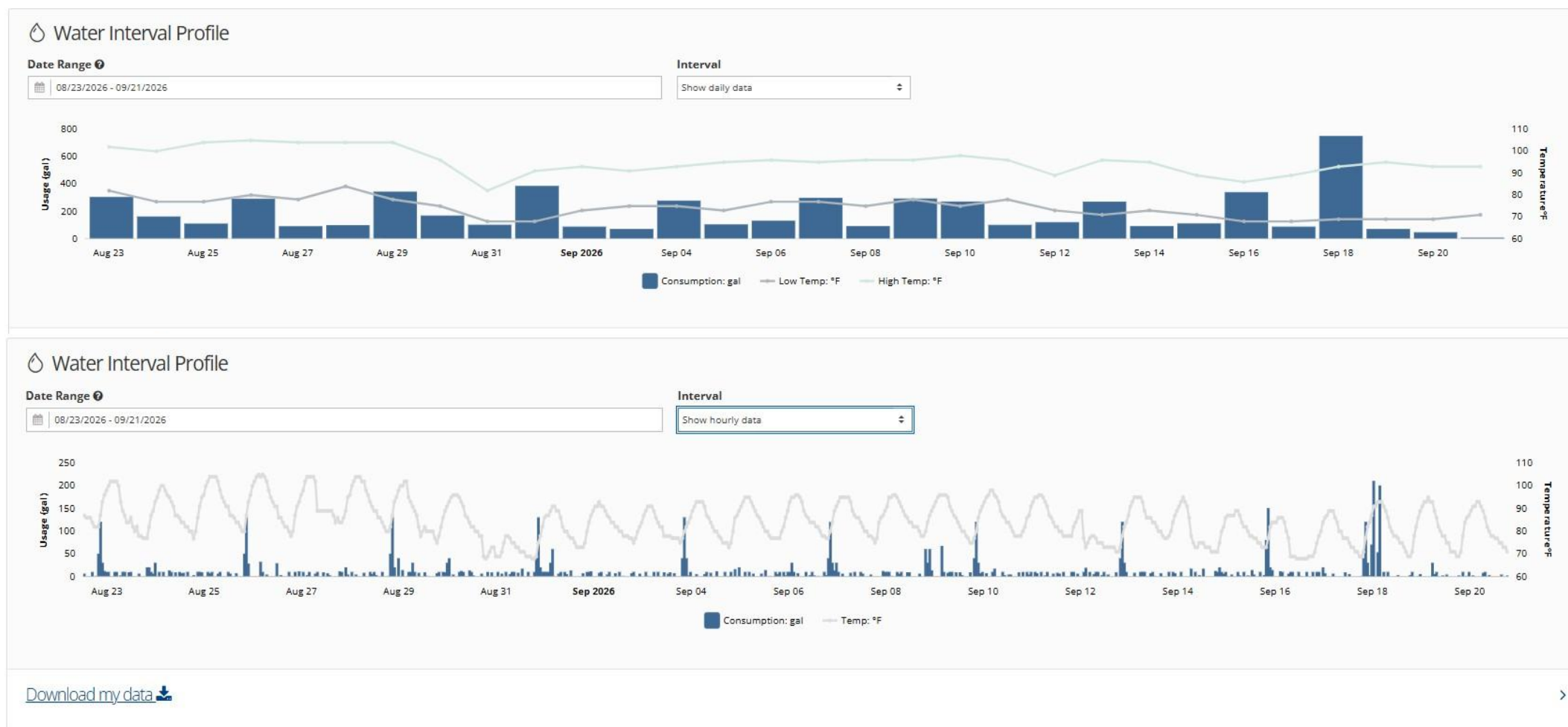




Smart Technology and Tools

Town of Oro Valley

View Data either Daily or Hourly



Water Conservation at Home

Behavioral Changes

- ▶ Develop water-saving habits (shorter showers, turning off taps)
- ▶ Encourage household participation (kids, roommates, etc.)
- ▶ Set Water-saving goals
 - ▶ Install water-efficient fixtures like low-flow toilets and showerheads
 - ▶ Shorten showers – 5 minutes or less
 - ▶ Turn off taps while brushing teeth or shaving
 - ▶ Keep a pitcher near the sink to capture water before it reaches desired temperature for drinking water, plants, pets or cleaning
 - ▶ Run full loads in the appliances
 - ▶ Fix leaks quickly
 - ▶ Sweep driveways and sidewalks instead of hosing them down
 - ▶ Use mulch to reduce evaporation in gardens





Water Audits

- ▶ A Water Audit for a residential customer helps identify how and where water is being used in the home and pinpoints ways to reduce waste.
- ▶ Typically involves checking for leaks, measuring water flow rates in irrigation and fixtures.
- ▶ Provides a clear picture of total water consumption, highlights inefficient systems or habits, and offers recommendations to lower water use, save money, and conserve resources



Community Academy: Water Conservation at Home

Questions?

Town of Oro Valley