



WATER UTILITY ANNUAL REPORT 2024



ORO VALLEY
ARIZONA

**TOWN OF ORO VALLEY
WATER UTILITY ANNUAL REPORT
APRIL 2024**

TABLE OF CONTENTS

	Page
About the Water Utility Commission.....	1
Executive Summary	4
Water Resources	6
Engineering and Planning	13
Capital Projects	14
Customer Service	20
Water Conservation	22
Operations & Maintenance	25
Water Quality.....	30
Backflow Prevention	31
Security & Emergency Response	32
Financial Highlights	33

Appendices

- A.** Static Groundwater Levels
- B.** Capital Improvement Program
- C.** Utility Statistics
- D.** Asset Inventory
- E.** Acronyms and Glossary

ABOUT THE WATER UTILITY COMMISSION

The Oro Valley Water Utility Commission is appointed by the Oro Valley Mayor and Council (Mayor and Council). The Mayor and Council have jurisdiction over rates, fees and water management issues. In March of 1996, the Mayor and Council created the Oro Valley Water Utility Commission (commission) to act as their advisory body. Please refer to the Town Water Code, Article 15-4, on the Town website at <http://www.codepublishing.com/AZ/OroValley/>

The Commission is composed of seven members that shall serve terms of three years. The Commissioners are selected to give a balanced representation of residential and commercial/turf interests served by the Utility.

The primary responsibility of the Commission is to review and make recommendations on Oro Valley Water Utility topics that require Mayor and Council action. These topics may include water system development, long-term water resource planning, rate adjustments, five-year capital improvement program, state and federal legislation regarding water related issues, expansion of service areas and water acquisitions. The commission also supports community programs and education related to the Oro Valley Water Utility.

The commission welcomes the public to attend its meetings. The commission meets the second Monday of each month, unless otherwise posted. All meetings are noticed on the Town's website at <https://www.orovalleyaz.gov/Government/Departments/Town-Clerk/Meetings-and-Agendas>

In 2023, the Commission held 8 Water Utility Commission meetings. Work performed or reviewed by the commission in 2023 included:

Meeting Date	Action Item
January 9, 2023	Election of Commission Chair and Vice Chair Appointments to Subcommittees
February 13, 2023	Recommendation on Water Rates Update and Discussion on the Colorado River
March 13, 2023	Recommendation for acceptance of the Annual Report
May 5, 2023	Field Trip – Tour of Tres Rios Water Reclamation Facility
May 8, 2023	Update and Discussion on Water Resource Usage
August 14, 2023	Conservation program by Conservation Specialist
September 11, 2023	Discussion and Possible Action Regarding the Arizona Water Bank Firming Agreement
November 13, 2023	Update and Discussion on OV Path Forward 10-Year Action Plan

Additional notable items on commission agendas in 2023 include:

- Review and comment on groundwater metrics and wellfield condition
- Quarterly updates on Water Utility Financials, Water Operations, Capital Projects and Water Resource Utilization

Notable issues planned for commission review or action in 2024 include:

- Recommendation for acceptance of the Annual Report
- Recommendation for acceptance of the Water Rates
- Northwest Recharge, Recovery and Delivery System project (NWRDRS) review
- Review of Conservation and Water Quality programs
- Water resource usage
- Capital Improvement Projects
- Utility financial review
- Field trips/guest speakers TBD

In addition to the regular commission meetings, there are meetings conducted by standing subcommittees. The 2023 subcommittee membership is as follows:

Finance Subcommittee

Tom Marek, Chair
Niranjan Vescio
Kay Lantow

Water Resources and Conservation Subcommittee:

Alan Forrest, Chair
Greg Hitt
Patricia Olson

COMMITTEE REPORTS

In accordance with the Town's Water code *Article 15-4-5 Committee Reports*, the Commission shall render to the Town Council an annual report on or before April 1st. This report is prepared by the Utility staff and reviewed by the commission for completeness and accuracy.

The Water Utility staff would like to thank the Commission for their detailed review and contributions to ensure the accuracy of this annual report.

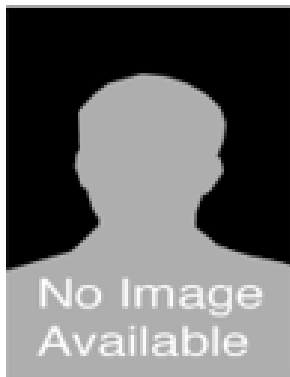
WATER UTILITY COMMISSION 2024



Alan Forrest,
Commission Chair



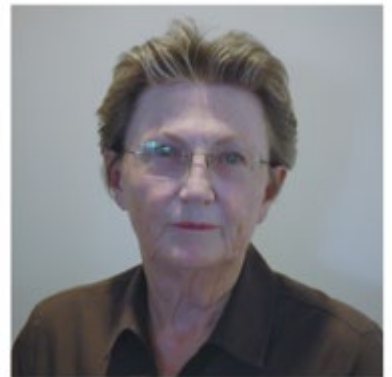
Niranjan Vescio,
Commission Vice- Chair



David Adler,
Commissioner



Gregg Hitt,
Commissioner



Kay Lantow,
Commissioner



Tom Marek,
Commissioner



Patricia Olson,
Commissioner

EXECUTIVE SUMMARY

This section summarizes the activities of the Water Utility Commission, the Utility's operations, capital projects, water resource portfolio, and financial management.

WATER RESOURCES

The Utility operates two water systems, the Oro Valley Water Service Area, and the Countryside Water Service Area. There are three sources of water supply: groundwater, Central Arizona Project water, and reclaimed water. Groundwater is pumped from the wells in the aquifer below the water service areas, blended with the Central Arizona Project water and then delivered through the potable drinking water distribution system. Reclaimed water is for non-potable uses, and is predominantly used for irrigation on golf courses, parks and athletic fields. The potable drinking water system is completely isolated from the reclaimed water system.

TABLE 1

Total Water Produced in 2023 (Acre-Feet)			
Groundwater	CAP Water	Reclaimed Water	Total Water Produced
4,925	2,573	1,880	9,378

The Utility uses Central Arizona Project water in the following three ways:

- 1) Aquifer recharge and recovery for water delivery to the potable water systems in both Oro Valley and Countryside.
- 2) Aquifer recharge for replacement credit for water pumped from the Utility's wells.
- 3) Aquifer recharge in nearby recharge facilities for future use.

As of December 31, 2023, the Utility has accrued an estimated 34,493 acre-feet of long-term storage credits and has a Groundwater Allowance Account balance of approximately 19,500 acre-feet.

CUSTOMER SERVICE

At the end of 2023, the Utility had 21,300 customer connections serving a population of approximately 49,000 residents in the service area. Utility water sales revenues totaled \$14.5 million for fiscal year 2022-23.

WATER CONSERVATION

The Utility encourages water conservation by informing and educating customers. Specifically, in 2023, the following conservation efforts were accomplished:

- Second anniversary of the quarterly newsletter *Behind the Meter*.
- Over 9,000 automated alerts sent with water savings of over 12 million gallons.
- 60% of leaks confirmed by customers on WaterSmart were related to irrigation.

WATER UTILITY OPERATIONS

Water Operations are a 24-hour per day, seven days per week operation. Staff performed routine maintenance on all production and distribution facilities. In 2023, Water Operations completed the following:

- Security upgrades at two main facilities which included badge access, automatic gate actuators and security cameras.
- Staff cross training – internal and external employees.
- Relocated operations staff to single facility.
- Began SCADA software upgrade to Ignition in partnership with ITD.
- Partnership with Water Engineering on efficient and timely plan review.

WATER QUALITY

In 2023, the Utility received 2,661 analytical results for required water sampling and operational data. The water system is in compliance with the Arizona Department of Environmental Quality and the United States Environmental Protection Agency requirements.

FINANCIAL HIGHLIGHTS

The Utility continues to be fiscally sound. The water rate study for FY 2024/25 resulted in a recommendation to increase the base rates and commodity rates for potable water customers. These proposed changes will result in a potable water monthly increase of \$3.65 per month (or 7.9%), compared to last year, for a customer with a 5/8-inch meter using 7,000 gallons per month. Customers with a 5/8-inch meter represent 87 percent of the total customer base and include residential, commercial and irrigation classifications with the majority being residential. Additionally, the proposed changes also include an increase to the potable groundwater preservation fee of 10-cents per 1,000 gallons of water consumption. There are no proposed changes to the reclaimed base or commodity rates or fees. The proposed changes will be presented to the Town Council in June 2024 and, if adopted, the new potable water base and commodity rates and potable groundwater preservation fee would become effective in July 2024.

All current water rates, fees and charges including impact fees are available to view on the Town website at <https://www.orovalleyaz.gov/government/departments/water-utility>

INTRODUCTION

This report provides information to the Mayor and Council and the public on the annual work of the Water Utility Commission, and updated information on the Oro Valley Water Utility (Utility). The report outlines how the divisions within the Utility work together to provide the community with reliable and safe water supplies. Through partnerships with other professional water agencies, the Utility maintains water quality standards, protects the groundwater supply, and conducts long-term planning for water resources and capital infrastructure. The report details how the Utility maintains financial health through analyzing and initiating responsible water rates and through cost recovery for new development. This report provides information and details of activities for calendar year (CY) 2023 with additional financial information reported for the fiscal year (FY) ending June 30, 2023.

WATER RESOURCES

The primary function of the Utility is the production and efficient use of available water resources that meet or exceed water quality standards. To ensure long-term sustainability, the Utility works closely with regional water providers, state agencies and the development community in planning for future water resource requirements. Utility staff closely monitors all water resources in the Utility's water portfolio. The water portfolio includes groundwater, Central Arizona Project (CAP) water entitlement, reclaimed water entitlement, long-term storage credits and groundwater allowance account credits.

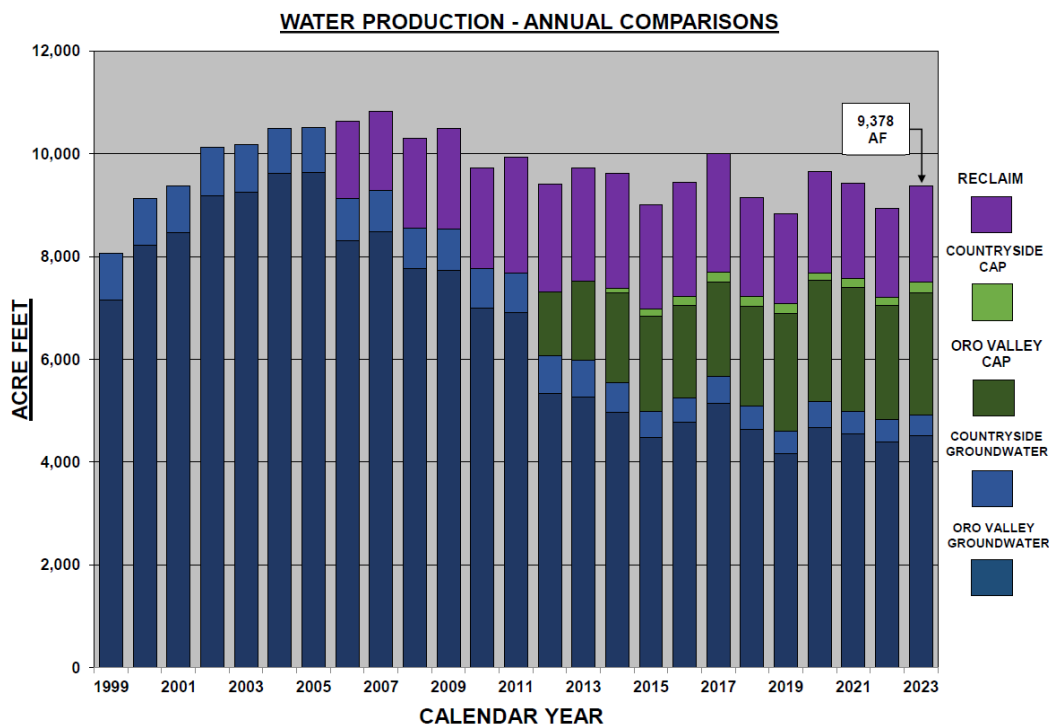
Current Water Supply includes groundwater, CAP water and reclaimed water. The Utility operates in two separate water service areas: the Oro Valley Water Service Area (OVWSA) and the Countryside Water Service Area (CSWSA). The CSWSA was acquired by the Town with the acquisition of the private water companies in 1996. This small satellite service area is located approximately two miles from the western boundary of the Town. Data from these two service areas is combined for regulatory reporting purposes. The following table provides the water production in acre feet (AF) for both service areas in 2023.

TABLE 2

Total Water Production in 2023			
Water Resources	OVWSA	CSWSA	Totals
Groundwater	4,523 AF	402 AF	4,925 AF
CAP Water	2,364 AF	209 AF	2,573 AF
Reclaimed Water	1,880 AF	----	1,880 AF
Total	8,767 AF	611 AF	9,378 AF

Figure 1 shows total water production in each service area from 1999 through 2023. The components of total water production include 1) groundwater production 2) CAP water utilization and 3) reclaimed water utilization. The graph depicts the increase in overall water production for 2023 as compared to 2022 as well as the dramatic decrease in groundwater utilization since 2005.

FIGURE 1



Groundwater remains the primary potable water resource for the Utility. In 2023, the Utility's 18 groundwater production wells produced 53 percent of the Utility's total water production.

Table 3 highlights the production capacity in all wells, the storage capacity in all reservoirs and the average rise or decline in static water levels for the wells in both service areas at the end of CY 2023.

TABLE 3

	Groundwater Production Capacity	Storage Capacity (Gallons)	Average Water Level +Rise/-Decline
OVWSA	11.9MGD	10.4 million	-.27 Feet
CSWSA	2.2 MGD	.90 million	-1.08 Feet

On an individual basis, groundwater level changes in 2023 for active wells varied from a rise of 7.74 feet to a decline of 7.74 feet (It is correct that the rise and decline are the same value). Details on static groundwater levels for individual wells may be found in **Appendix A**.

Central Arizona Project (CAP) Water is the Utility’s only other potable water resource. In 2023, the Utility’s four CAP wheeling locations delivered 27 percent of the Utility’s total water production. The Utility delivers its entire annual CAP entitlement of 10,305 acre feet to several recharge facilities in the Tucson Active Management Area. In 2023, the Utility purchased the entire entitlement for use as follows:

- 1) Aquifer recharge and recovery for water delivery to the potable water systems in both Oro Valley and Countryside.
- 2) Aquifer recharge for replacement credit for water pumped from the Utility’s wells.
- 3) Aquifer recharge in nearby recharge facilities for future use.

When Oro Valley’s CAP water is recharged and recovered for delivery, it is first delivered to Tucson Water’s Central Avra Valley Storage and Recovery Project. The recharged CAP water is then recovered and delivered (wheeled) through the Tucson Water system to various connection points in the Oro Valley system for delivery to Utility customers.

The Utility has an Intergovernmental Agreement (IGA) with Tucson Water enabling the delivery of CAP water to customers through four connections to the Tucson Water system. There are three CAP water connection points in the OVWSA. One is located on Vista del Sol, north of Naranja Drive, a second connection is on Calle Buena Vista, south of Calle Concordia and a third is located near Oracle and Hardy. CAP water is also delivered to the CSWSA at a connection located on Camino de Oeste, just north of Linda Vista Blvd. The Utility delivered 2,573 acre-feet of CAP water in 2023 thus reducing its reliance on groundwater. CAP water deliveries and locations are shown in Table 4.

TABLE 4

CAP Water Deliveries in 2023	
Locations	Delivery
Vista Del Sol (OVWSA)	1,472 AF
Calle Buena Vista (OVWSA)	445 AF
Oracle & Hardy (OVWSA)	448 AF
Camino De Oeste (CSWSA)	208 AF
Total	2,573 AF

In calendar year 2017, the Town of Oro Valley, Metro Water and the Town of Marana began collaboration on the development of a unique IGA to construct a future project known as the Northwest Recharge, Recovery and Delivery System (NWRDSD). The IGA was unanimously approved by each governing body in March of 2017. This agreement provides another means for the Town to deliver CAP water to the Utility’s service areas. The project is estimated to be completed in FY 2027 and will allow for the annual delivery of up to an additional 4,000 acre feet of recovered CAP water.

The reservoirs on the Colorado River supply water to the CAP and other water projects in the lower basin states of Arizona, California, and Nevada. In addition, these reservoirs provide required water deliveries to Mexico. This Colorado River water storage decline is due to the extended drought the basin has experienced for over 24 years as a result of decreased precipitation and snowpack. This has decreased flow in the river creating significant water level declines in Lake Mead and Lake Powell, resulting in historically low reservoir levels. Over the last 24 years, water demands have exceeded available inflows for supply driving reservoir levels lower.

Reservoir levels determine supply availability in accordance with shortage sharing guidelines established in 2007 and amended in 2019. Beginning in 2018, The Arizona Department of Water Resources (ADWR) and CAP staff collaborated with CAP water users and the Lower Colorado River Basin states to finalize the Lower Basin States Drought Contingency Plan (LBDCP). The LBDCP modifies the 2007 shortage sharing guidelines so that curtailments in CAP deliveries happen sooner and are larger. The goal of this plan is to close the gap between the over-allocation of the river's natural replenishment capability and water deliveries, thus leaving enough water in Lake Mead to avoid drastic cuts to priority subcontract holders like Municipal and Industrial users. The LBDCP was approved by Governor Doug Ducey on January 31, 2019, and was later approved by the Federal Legislature and went into effect on January 1, 2020.

The LBDCP specifies what the curtailments are to each of the Lower Basin States depending on the water surface elevation of Lake Mead on January 1st of the given year.

In 2023 the Bureau of Reclamation (BOR) determined that beginning in January of 2024, the BOR would be declared a Tier 1 water shortage for many Colorado River Water users including Arizona. A Tier 1 water shortage reduces Arizona's Colorado River allocation by 30% but has no effect on Oro Valley's CAP allocation.

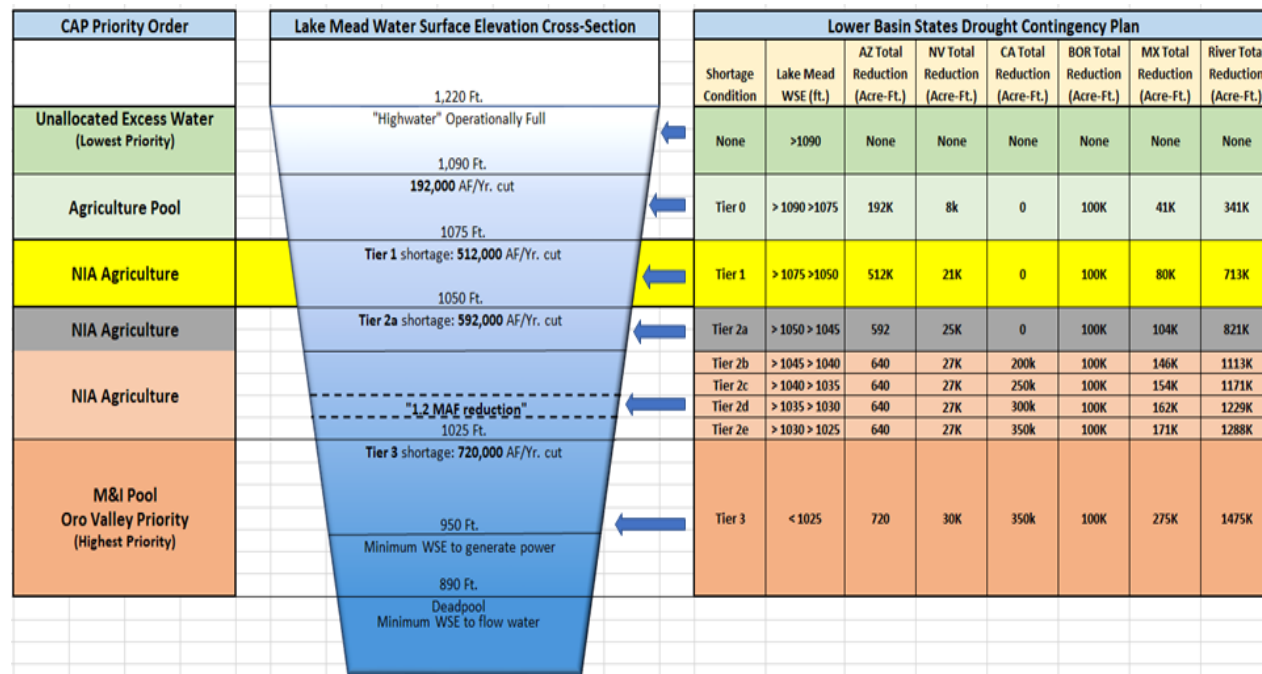
The BOR has requested that all Colorado River water users create a new plan to leave even more water in the river. Six of the seven Colorado River Basin states submitted a consensus framework plan for Colorado River water cuts that met the goals set forth by the BOR. Unfortunately, the plan failed to gain the support of California, seen as critical to making meaningful cutbacks since California has the largest apportionment of the river. California released its own plan which minimizes their obligation to leave water in the river while vastly increasing what Arizona must cut. At the time of this report's creation, it is unclear how the BOR will view any plan to save the river that doesn't have the support of all the states.

The BOR needs to take decisive action. All Colorado River water users will need to commit to reductions. The sooner the river's demand is reduced to a sustainable level the sooner the river will be protected, benefiting everyone. For 2024, Oro Valley will not see any reduction in Colorado River Water deliveries, but we can expect a reduction in deliveries in future years.

Fortunately, Southern Arizona water professionals have been planning for these challenging times for over 2 decades.

Figure 2 shows the relationship between the CAP priority order, Lake Mead water surface elevation and the LBDCP. The area highlighted in yellow represents the current Tier 1 water shortage which results in a 512 acre-ft reduction in CAP deliveries for calendar year 2024.

FIGURE 2



The State of Arizona offers a level of protection from CAP curtailments for priority CAP users through the creation of the Arizona Water Banking Authority. The AWBA has been storing water underground for municipal and industrial water users for decades to guard against the impacts of CAP delivery curtailments. Over 600,000 acre feet of water have been stored underground by the AWBA in the Tucson Active Management Area. This stored water will be made available to municipal water providers to mitigate curtailments of CAP water deliveries to municipal water users. In addition to the AWBA storing water, the Central Arizona Groundwater Replenishment District (CAGR) has stored water for the future to replenish groundwater.

The Utility also continues to store a portion of its CAP water to increase its balance of long-term storage credits. This water is also available to mitigate curtailments of CAP water deliveries.

The above action plans combined with a diverse water resource portfolio reduces the chances of a water resource shortage when CAP water delivery curtailments occur. In addition, reducing demands through an increased focus on the efficient use of water resources will help to preserve water supplies for future uses.

Reclaimed Water is produced from wastewater effluent from the sanitary sewer system and then treated for irrigation and other non-potable uses. In 2023, the Utility’s reclaimed system produced 20 percent of the Utility’s total water production.

Oro Valley owns all the effluent produced by its customers. The Utility has an IGA with Tucson Water to deliver reclaimed water to the OVWSA through their facility at Thornydale and Tangerine. From that location, the Utility independently operates the transmission and water distribution system that delivers the reclaimed water to reclaimed water customers in the OVWSA. No reclaimed water is delivered to the CSWSA.

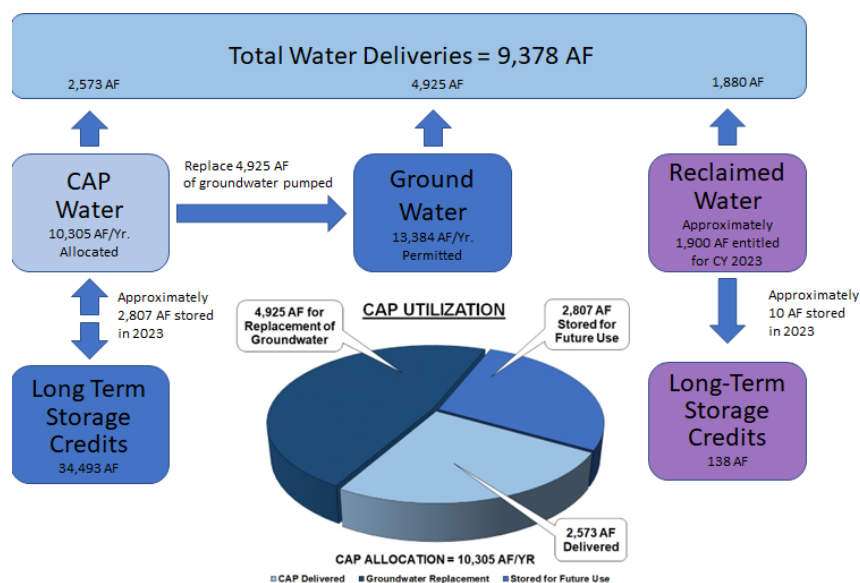
The Utility supplies reclaimed water for the irrigation of four golf courses, athletic fields at one elementary school and Naranja Park. In 2023, 1,880 acre-feet of reclaimed water was delivered.

REGULATORY

The ADWR requires the Water Utility to replace all the groundwater pumped from wells owned and operated by the Utility. To comply with this requirement, every acre foot of groundwater pumped is replaced through annual aquifer recharge utilizing CAP water. The replacement of pumped groundwater can happen anywhere within the Tucson Active Management Area. Due to the lack of Utility-owned aquifer recharge facilities, the Utility recharges the aquifer outside of the service area to meet this requirement. Long-term storage credits can also be used to replace the groundwater pumped to maintain compliance with ADWR requirements.

Figure 3 graphically shows how the Utility utilized water resources in 2023 as described in this **WATER RESOURCES** section.

FIGURE 3



The Designation of Assured Water Supply (DAWS) issued by the ADWR requires compliance with the Fourth Management Plan in the Tucson Active Management Area. In 2023, the Utility was in compliance with all requirements under the DAWS and fully expects to meet all requirements in 2024. The ADWR requires the Utility to submit water system information and water usage data in an annual report. The information provided includes service area boundaries, total water use, population, gallons per capita per day, recharge, recovery and system water loss.

Pursuant to the DAWS, the Utility has a right to pump a maximum of 13,384 acre-feet per year of groundwater.

Long-Term Storage Credits are earned when water is recharged and stored underground for more than one year. In 2023, the Utility purchased 10,305 acre-feet of CAP water for delivery to recharge facilities. Of that amount, approximately 2,807 acre-feet were not used for direct delivery or annual recovery; therefore, increasing the long-term storage credit balance. The water stored will be saved for future use. At the end of 2023, the Utility calculated that it had approximately 34,493 acre-feet in long-term storage credits.

Table 5 shows the estimated water storage summary for the end of the 2023 calendar year. The ADWR will adjust the storage balance to account for recharge basin evaporation and aquifer losses. The final balance will be provided by the ADWR in October of 2024.

TABLE 5

Water Storage Summary for Calendar Year 2022 (Acre Feet)			
Groundwater Storage Facility	2023 CAP Delivery to Storage Facility	2023 CAP Recovery from Storage Facility	Storage Balance 12/31/23
Kai Farms	4,000	2,000	21,260
Lower Santa Cruz	2,805	2,200	9,575
Pima Mine Road	---	---	2,868
Central Avra Valley	3,500	3,298	660
Effluent Storage	---	---	138
Total	10,305	7,498	34,493

*Note: The 2023 CAP recovery from storage facility column (3rd column) represents the aggregate of CAP water either delivered to customers or used to replace the groundwater that was pumped. **The ADWR will adjust the storage balance to account for recharge basin evaporation and aquifer losses. The Storage balances provided are an approximation.***

The Groundwater Allowance Account identifies the amount of groundwater that can be pumped, if desired, and still be considered exempt from the state's requirement for replenishment in the Tucson Active Management Area. In general, the balance in the account may be used for any groundwater pumped from a well that has a five-year average annual decline greater than four feet or water pumped from a well that is not permitted as a recovery well. In 2023, the Utility did not use any credits from the Groundwater Allowance Account. All the Utility's wells are permitted as recovery wells; therefore, long-term storage credits were used to meet the replenishment requirements instead of using credits in the Groundwater Allowance Account. The balance in the Groundwater Allowance Account at the end of 2023 was 19,230 acre-feet.

Engineering and Planning

The engineering and Planning Division is responsible for planning and managing the design, construction and inspection of new water infrastructure for the Town of Oro Valley, as well as providing engineering support to the Water Operations group.

Engineering and Planning is also responsible for managing and maintaining a Geographic Information System (GIS) database on all existing and new water system infrastructure. Maps produced by GIS staff facilitate Utility operations, planning and engineering. Additionally, Engineering has spearheaded the design and parameters for the Water Utility's asset management system (Cartegraph) and documenting the lifecycle of our water assets. Engineering is continuing to develop standardization across all the design work and expectations for future deliverables.

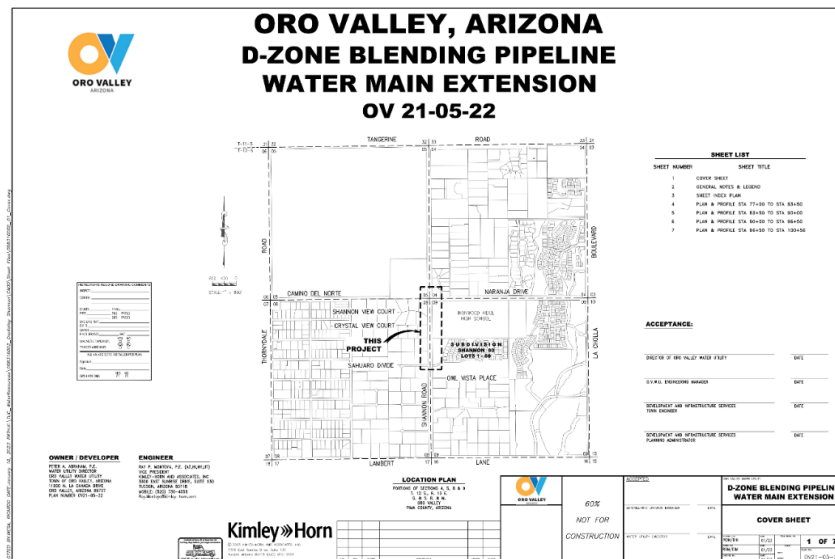
In 2023, the New Development Section within the Engineering and Planning Division completed the following:

- Reviewed and approved water improvement plans for 10 construction projects
- Approved plans and completed 11 as-built plans

CAPITAL PROJECTS

The Engineering and Planning Division manages the design and construction of capital projects identified in the Capital Improvement Program and annual operating budget. These projects are designed to improve efficiencies to existing facilities and improve service levels. Some of the notable capital projects are described next.

- **Northwest Recharge, Recovery and Delivery System (NWRD) Blending Pipeline project:** This project is designed to blend the “D” Zone water with our incoming NWRD Partnered water that is delivered from the Lower Santa Cruz Recharge Facility to the OVWU service area.



- **NWRD Shannon Road Forebay:** This project is designed as a forebay reservoir between the lower Santa Cruz Water Recovery Area and the Oro Valley Service Area. Once completed, this water infrastructure will allow the Utility to deliver up-to an additional 4,000-acre feet of Central Arizona Project (CAP) water per year to the Oro Valley Water Utility customers. This infrastructure will also aid in preserving our groundwater resource.



- **Well E-2 Rehabilitation:** Well rehabilitation work includes pre and post video logs to assess the well's condition along with down-hole survey. This work is followed by brushing and bailing of the well (or alternative method of well casing cleaning), repair of the well casing as required, header piping replacement and the installation of new oilers and pads if needed. Well E-2 will require a liner installation from 16" to 12" to stabilize well casing and formation around the well. Additionally, motor rehabilitation work will be completed prior to placing the well back into service.



The well rehabilitation contractor prepares to install a column pipe. Perpetual well maintenance is an important part of the Utility's Capital Improvement Program and ensures a reliable water system for the community.

- **Nakoma Sky Well Design and off-site electrical work:** Nakoma Sky offsite electrical and discharge piping is currently in the construction stage with La Posada. Design of this well site facility is 100 percent and scheduled for late FY 2023-2024/ 2024-2025



A contractor installs an 8-inch Ductile Iron Pipe (DIP) & adjacent electrical conduit as part of the Nakoma Well Discharge line into the OVWU system pressure vessel above-ground piping and instrumentation.

- **Steam Pump Well Design, Control Panel, and Off-Site Electrical Work:** The Steam Pump Station Control Panel, off site electrical and design work have been completed. Construction documents and specifications are in preparation for the bidding process, which will take place in early July 2024. Construction for this project has been scheduled for FY 2024-2025.

[illegible]

- **Pressure Vessel Replacements for Wells and Boosters:** The purpose of this multi-year Pressure Vessel Replacement program is to upgrade the Utility's existing pressure tanks to meet current safety requirements based on the American Society of Mechanical Engineers (ASME) standards. These standards are for structural design and integrity of pressure vessels.



A contractor prepares to replace a non-ASME certified pressure vessel with a new ASME certified pressure vessel. Work included new pressure vessel above-ground piping and instrumentation.

- **Palisades Redundancy 8-inch water main:** This project adds additional reliability to the Palisades service area. Design was completed in FY 2022/23. Construction has been set for FY 2023-2024 and officially started in January 2024.

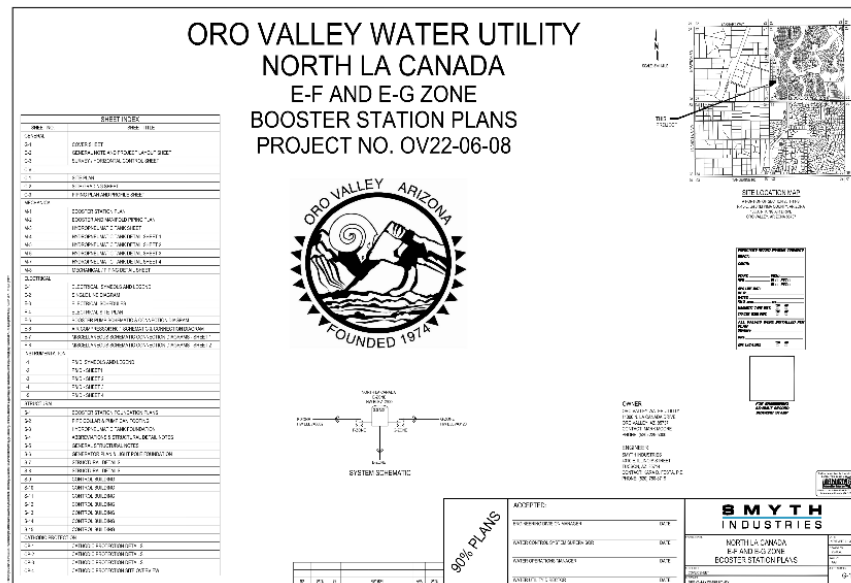


Construction Inspectors Ray Ochoa and Ray Carrasco reference the plans as they inspect the water line.



Construction Inspectors Ray Ochoa, Ray Carrasco, and Engineering Division Manager Lee Jacobs tracking the progress of the project.

- **La Cañada Design of “E” to “F”; and “E” to “G” Zone Booster Design:** This project is to equip the La Cañada Reservoir with two new booster stations. The design for this project is complete. The Notice to Proceed for construction was issued for January 2024. The first year of work included the design and construction of the electrical improvements necessary to power the future booster stations at La Cañada. This will ultimately help the Utility with moving water to “F” and “G” zones.



- **Countryside Wheeling Station Upgrade:** This project will increase the wheeling capacity from Tucson Water to Oro Valley Water’s remote water service area known as “Countryside”. The site will be equipped with telemetry to monitor and control flows into Countryside to supplement our groundwater well production. An additional 200-gallons per minute capacity will be added to the current capacity of 100-gallons per mile. Construction will include a security wall, telemetry for valve flow control and remote flow meter monitoring. Project is expected to be constructed in FY 2023/24.

- **Rancho Vistoso Booster Upgrades:** The purpose of this project is to improve our pumps and motors to a more efficient system for delivering water in our closed zone. This project is consistent with our goals of reducing energy consumption without sacrificing production and delivery of water.



The contractor prepares to replace a non-ASME certified pressure vessel with a new ASME certified pressure vessel. Work included new pressure vessel above-ground piping and instrumentation.

- **Big Wash Reservoir Relining 200:** The purpose of this project is to prolong the life of our existing infrastructure and to maintain its integrity. The Utility has contracted with an industrial coater to blast and expose any structural issues that may exist and to repair if necessary and recoat prior to April 2024.

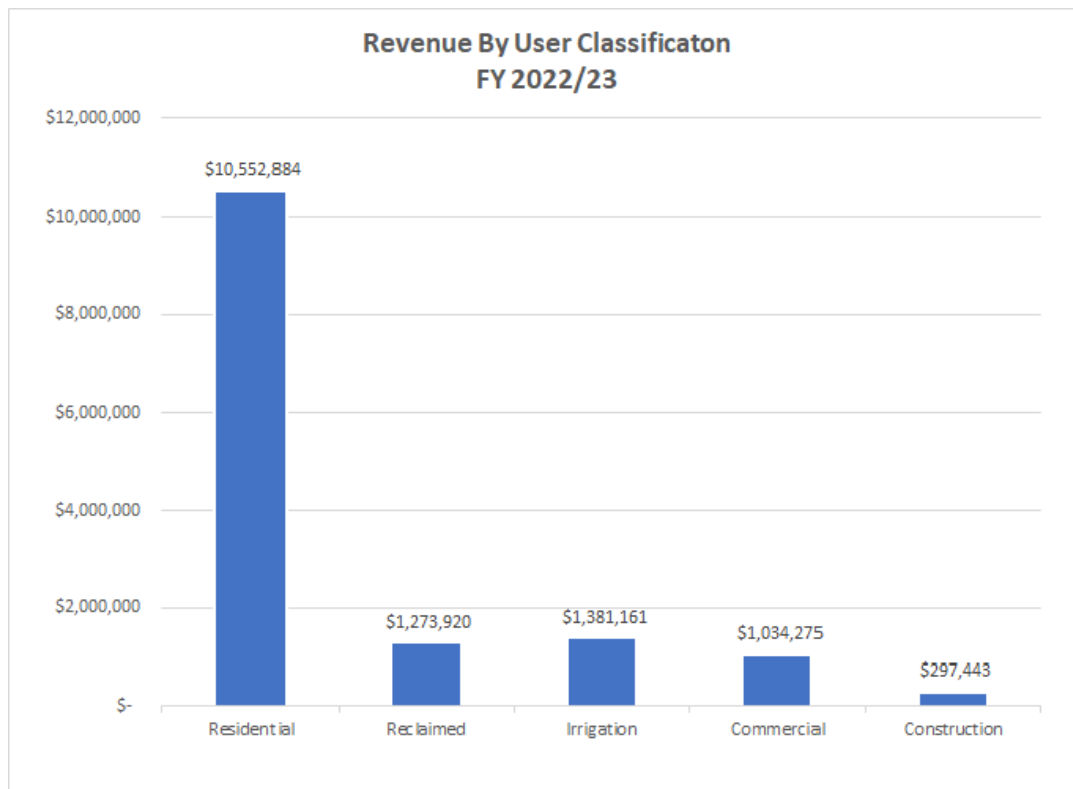


CUSTOMER SERVICE

Customer Service is an integral element of the Utility, providing a full range of support to its customers. The Utility's 21,300 metered connections serve a combined population of approximately 49,000 for both water service areas. Customer Service responsibilities include preparing the monthly billing, processing cash receipts, preparing daily deposits, and processing new meter applications. Staff also manages new and closed accounts as customers move in and out of the water service areas.

Customer Service staff produced over 306,432 bills in FY 2022/23, generating \$14,539,682 in water sales revenue. This revenue does not include sales taxes, groundwater preservation fees, or service fees. Water sales revenue by user classification is illustrated in Figure 2.

FIGURE 2



The Utility has an IGA with Pima County Regional Wastewater Reclamation Department to provide their monthly sewer billing. In addition, the Utility provides monthly and quarterly billing for the Town's Stormwater Utility. In FY 2022/23, the Utility processed a total of \$31,237,131 in payments for the Utility and the other two organizations as follows:

- Oro Valley Water Utility \$ 19,708,384
- Pima County Wastewater Reclamation \$ 10,051,961
- Town of Oro Valley Stormwater Utility \$ 1,476,786

Total payments handled by the Oro Valley Water Utility are in excess of the water sales billed because the payments processed include sales taxes, groundwater preservation fees, security deposits and other service fees charged by the Utility.

Of the above payments processed, payments made by credit card or electronically totaled \$30.9 million, or 99 percent. These payment methods are more convenient for water utility customers and customer service staff. Payments are posted to customer accounts in a more timely and efficient manner. In addition, this reduces data entry errors and increases time available for staff to perform other job functions.

The Water Utility's Customer Information System (CIS) implemented last year has been a huge success with customers and staff. In addition to CIS, this software includes a mobile application for field staff and a customer portal. The customer portal allows customers to manage their account, review consumption information, make payments with several payment options, and a variety of other self-service features. In FY 2022/23, 8,200 or 39% of Water Utility customers registered for the customer portal.

WaterSmart is a customer portal that provides customers the ability to monitor their own water use on an hourly, daily, weekly or monthly basis. They can also set their individual water use thresholds that will enable the technology to send them high water use alerts. Customer Service staff use the Utility's customer kiosk to assist customers with registering in WaterSmart and to teach them how to establish water use thresholds.

The major accomplishments by Customer Service staff in FY 2022/23 include the following:

- Produced over 306,432 water bills.
- Registered 2,500 customer portal accounts for a total of 8,200.
- Processed 186 new meter installation applications.

Utility Statistics may be found in **Appendix C**.

WATER CONSERVATION

Water Conservation is a key component of the Utility's overall water resource management efforts. The Water Conservation Program serves customers through community outreach and education. It engages the public with a variety of tools and information to emphasize long-term support for more efficient water use.

The Utility continually looks for new ways to engage and communicate important water information to our customers. Spring of 2022 marked the first edition of our quarterly newsletter *Behind the Meter*. This publication is mailed as a billing insert to all customers and highlights information on our water resources, services, and programs offered. It is also available electronically on the WaterSmart customer portal and our website.

Additional Publications

- Virtual Welcome Guide
- Water Wisdom Video Series



Community Outreach and Education Programs

Participation in the **WaterSmart Program** continues to increase. This online program provides customers with a self-service tool to view their water use at any time. Early leak detection and high use notifications save water, reduce water waste and reduce the shock of high water bills. Although the program is available to all customers, Single Family Residential (SFR) and Irrigation accounts show the highest average registration rate at 34% over the last year.

- There are over 7,200 registered accounts on the WaterSmart Program
- Approximately 8,500 automated alerts were sent during CY 2023 with water savings of over 12 million gallons.
- 45% of leaks confirmed by customers on the WaterSmart program were related to irrigation.
- There were over 3,900 visits to the WaterSmart customer portal in CY 2023.

The **Water Audit Program** is a free educational and technical assistance service offered to residential, HOA and commercial customers. Audits are typically conducted onsite and used to evaluate potential water savings for both indoor and outdoor water use. The water use information available through smart meters allows staff to help many of our customers over the phone. Irrigation is one of the most common leak problems reported by customers. Leaks related to irrigation may not be obvious to the customer. Confusion with irrigation timer settings and over watering are significant contributors to high water use complaints.

- Customers saved just over 500,000 gallons participating in our Water Audit program (2023 audits).
- 35% of participants had pools.
- Over 2,350 audits have been completed since 2003.

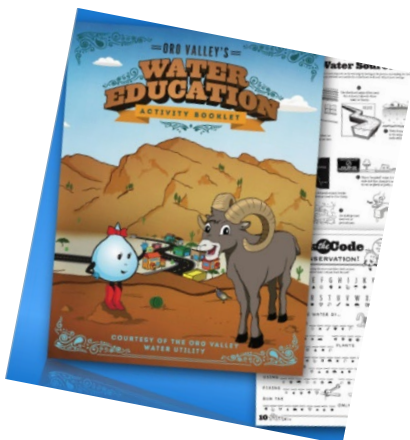


Break Down of Leaks Reported to WaterSmart



Youth Education Programs

Oro Valley Water Utility partnered with the Environmental Education Exchange in 2013 to develop and manage our Conservation Kids Program (grades 1-3). In 2022, we added Discover Our Water Program to serve grades 4-5. For the current school year to date we have reached over 1,100 students within Oro Valley and adjacent service areas.



Future Focus Areas

The Utility continually looks for ways to expand opportunities for public education and advocacy regarding water conservation.

- Increase customer participation in the WaterSmart Program across all meter classes through targeted outreach efforts.
- Improve our understanding of key water use patterns by leveraging the data from our Automated Metering Infrastructure.
- Develop water use benchmarks that are useful and practical to Utility customers as determined by evaluation models.

OPERATIONS AND MAINTENANCE

All Production, Distribution and Meter Operations Personnel are certified operators licensed by the Arizona Department of Environmental Quality (ADEQ).

All operations personnel work together to address water system problems. On-call staff respond to water system problems 24 hours per day, seven days per week. This on-call staffing utilizes a tiered-level after-hours response protocol in accordance with the existing Emergency Response Plan.

Water Production

Personnel are responsible for the operation and maintenance of wells, booster pumps, and reservoirs on the potable water system. In addition, Production personnel are responsible for the booster pumps, metering stations, and the reservoir on the reclaimed water system. These systems are monitored with the use of Supervisory Control and Data Acquisition (SCADA) technology that is managed by the Water Control Systems Department. Production staff perform routine mechanical maintenance, and assist with electrical maintenance at 45 production sites. They uphold operational balance for CAP water delivery to the potable systems, maintain 21 disinfection injection pumps and disinfection residuals at injection points on the potable and reclaimed water delivery systems. Production staff also perform an annual groundwater level survey of static water levels in all wells.

The following are major activities and accomplishments of Water Production personnel in 2023:

- New Operations Supervisor lateral from Distribution
- Operator III promoted from Distribution
- Implementation of new SCADA system
- Cleaned and inspected 6 potable water reservoirs
- Vertical turbine motor preventive maintenance program
- Completed 3,228 potable and reclaimed water facility site checks
- Measured and recorded static water levels of 32 active and deactivated wells quarterly
- Performed 13 water storage tank overflows to achieve consistent production of exceptional water quality to our customers
- Through the provision of continued training, diverse skillsets, and veteran operator knowledge; over 10 intricate projects/major repairs were able to be completed in house



Staff installing a flowmeter at Glover Reservoir (left). Staff replacing a check valve on a booster pump discharge at Vistoso Reclaimed Plant (right).



ADC Program

Water Operations implemented the Arizona Department of Corrections (ADC) Inmate Work Program in August of 2022. This program's labor force completes the general facility maintenance, which provides Water Utility staff the time to perform advanced skilled tasks required to maintain a robust preventative maintenance program.

Below are the major accomplishments of the ADC Program in 2023:

- 8 operators continuing ADC training-process for working with or around inmates.
- Cleaned 10 water facilities for vegetation abatement.
- Installed new sample stations at active well sites.
- Restored site perimeter areas eroded from water runoff using rip rap and back fill materials.



Using the ADC crew, sites, such as the one pictured above, are cleaned and maintained on a regular schedule basis. Utilizing this program saves the Utility money, resulting in lower Utility rates for our customers.

Water Distribution

Distribution Personnel are responsible for routine maintenance of all water distribution system components. This work includes the repair and installation of water mains and services, isolation valves, fire hydrants, pressure reducing valves, drain valve assemblies, and air relief valves. Water Distribution Operators additionally perform a variety of internal tasks that go beyond typical Water Utility maintenance. The tasks performed may include erosion repairs, grading, paving, concrete work, landscaping and various types of demolition, construction, and fabrication related activities. Staff also collaborate with the Water Engineering Staff to provide

accurate as-built data for the GIS system, which ensures that assets remain current and are accurately depicted on system maps. Additionally, assets are tracked and updated using the Town's Asset Management Program. Distribution staff regularly establish and maintain professional relationships with contractors and vendors. These professional relationships are especially important when responding to emergencies, such as large water main breaks or other major repairs. The Utility's Distribution staff provides assistance and guidance to residential customers who have questions or concerns about their water.

The following are the major activities and accomplishments of Water Distribution staff in 2023:

- Responded to 192 customer inquiries including after-hour call outs and emergencies.
- Exercised 1447 water valves and replaced 2 isolation valves.
- Repaired 52 fire hydrants and replaced 3 fire hydrants.
- Performed 172 inspections on 43 pressure reducing valves (PRV) and performed repairs on 27 PRVs.
- Responded to and repaired 5 water mainline breaks.
- Repaired 3 DVAs.
- Cut and plugged water main installed between residential lots.
- Operator II promoted to Operator III.
- Promoted two staff members from Operator I to Operator II.
- Performed 65 Air relief valve (ARV) repairs.

An inventory of all facility assets may be found in **Appendix D**.



The Utility's Water distribution staff installed a new 2" bypass PRV at Lambert booster station to assist with pressure sustaining in the surrounding neighborhood.



Distribution staff worked with Engineering and Contractors at the Community Center/ La Cañada main replacement project.

Meter Operations

Advanced Metering Infrastructure (AMI) is an integral part of the Oro Valley Water system. The advanced metering technology transformed how the Utility gathers water use data, how staff collaborates with customers, and improved water data management practices. The AMI system has improved customer service by providing historical, on-site water usage data to the customer to assist with the explanation of a problem, such as a water leak. This saves customers water, money, and promotes continued water conservation efforts. Utility staff has

increased their technical knowledge and skills to provide this improved customer service feature. Staff uses analytical and critical thinking skills to analyze and troubleshoot complex metering problems and technical issues within the AMI system. Staff uses AMI network software, Meter Data Management software, field collection and meter reading hardware, GIS software and data collection software to manage water usage data and develop solutions to solve complex problems and mitigate water use issues that impact Utility customers.

The use of AMI technology also increases operational efficiency by eliminating the need for labor- intensive manual meter reading, as well as reducing travel time. By increasing operational efficiencies, meter operations staff can focus their time and capabilities on oversight of the AMI system and related software. This includes proactively monitoring and maintaining the AMI system, providing instruction and insight for electronic equipment installations, programming, maintenance, and repairs. Meter Operations Staff members focus their efforts on improving operational efficiencies to perform additional water system preventive maintenance and commercial meter testing.

Meter staff bluestakes underground water mains for all new and existing construction projects throughout the Town's water service area. Arizona law requires that all underground utilities be bluestaked prior to any excavation to ensure the safety and welfare of the community by protecting underground facilities from damage.

An inventory of all facility assets may be found in **Appendix D**.

The following are major activities and accomplishments of Water Meter personnel in 2023:

- Installed 157 meters for new developments.
- Replaced an estimate of 1000 warranty residential meters.
- Repaired 22 angle meter stops.
- Completed 10,192 AZ811 utility locate requests.
- 3 Water Utility Operator I promoted to Utility Operator II.
- 4 new employees trained.
- Worked with Sensus to collaborate with Metering Services Inc. to start a warranty meter changeout program.
- Working with Metron Farnier to test the feasibility of cellular endpoint residential and hydrant meters



Meter Operations and Water Distribution staff repairing a damaged AMS (left).

Meter Operations staff testing a 6-inch meter for accuracy at La Cholla Airpark (right).



Water Control Systems

Personnel are responsible for the Supervisory Control and Data Acquisition (SCADA) system, facility instrumentation and controls, facility electrical equipment, telemetry radio systems, and programmable logic controllers (PLC).

Key functions of Water Control Systems include troubleshooting control system and electrical issues, equipment calibration, instrumentation and control upgrades for wells, pressure reducing valves, boosters, reservoirs, facility system security, and preventative maintenance for all instrumentation and electrical equipment.

Staff works with Water Utility Engineering Staff and Contractors reviewing capital projects and is responsible for all new instrumentation and control process start-ups for facilities.

The following are major activities and accomplishments of Water Control systems personnel in 2023:

- Project Manager for permanent generator, automatic transfer switch, and main electrical disconnect at Countryside reservoir and booster facility.
- Upgraded air compressor controls at two booster stations.
- Upgraded water level instrumentation at two reservoirs.
- Upgraded Reclaimed SCADA radio system..
- Programmed four flow meter upgrades.
- New preventative maintenance program for electrical, instrumentation, and controls.
- Reviewed engineering plans for two booster sites.
- Upgraded instrumentation at four well rehabilitation projects.



Water Control Systems staff calibrating and programming new instrumentation (left).



Water Control System staff performing preventative maintenance on electrical controls (left).

WATER QUALITY

Water quality sampling and testing is essential to provide safe and reliable water. The Town's water system is in full compliance with all State and Federal regulations. The Utility is regulated by the Arizona Department of Environmental Quality (ADEQ) and works closely with the ADEQ to ensure all Federal and State standards are met. The Water Utility provides all required water quality testing results to the ADEQ as well. The website for the ADEQ is www.azdeq.gov.

In 2023, the Utility received 2,661 analytical results for required water sampling and operational data for the potable water system, and met requirements of the US Environmental Protection Agency's (EPA), Safe Drinking Water Act (SDWA). Each year, the Utility collects hundreds of water samples from 15 point of entry sites, including groundwater wells, reservoirs, and pumping stations. The Utility also retrieves samples from 58 sampling stations as required by the ADEQ. These stations are located in neighborhoods that are specifically selected to represent the water quality delivered to the customers throughout the water distribution system. The Utility has an additional 101 sampling stations that can be used during emergencies, or to meet future testing requirements. Every three years, water samples are taken from 50 private residences within the water service areas to test for lead and copper. The most recent sampling was completed in June of 2022. The results met the EPA's SDWA rules for lead and copper. The Utility provides all water quality testing results to the ADEQ.

During 2023, the Utility collected 696 compliance samples for analysis of Total Coliform and E. Coli bacteria, in which the samples resulted negative for these contaminants. This is a direct result of a successful disinfection program through wellhead chlorination, effective system monitoring, proficient sampling methods and routine maintenance.

Testing includes water hardness, which is a measurement of the concentration of calcium and magnesium. During 2023, the hardness levels in Oro Valley ranged from 2.1 to 15.8 grains per gallon (36 ppm to 270 ppm). The Utility's water hardness ranges from soft to very hard with the majority of the water testing at moderately hard to hard. The water hardness varies depending on the volume of CAP water that is being blended at any given time in a specific pressure zone.

In 2023, due to proposed regulatory changes and requirements, the Utility continued preparation to phase in five proposed and pending EPA regulations related to monitoring rules:

- | | |
|---|--------------|
| ➤ Fifth Unregulated Contaminant Monitoring Rule | 2023-2025 |
| ➤ Revised Long-Term Lead and Copper Rule | October 2024 |
| ➤ Perchlorate | TBD |
| ➤ Strontium | TBD |
| ➤ Chromium Total/Hexavalent Chromium | TBD |

In 2024, the Utility will continue to phase in sampling and monitoring of new contaminants in accordance with SDWA regulatory requirements.

The Utility produced a 2022 Consumer Confidence Report for each water system in April of 2023. These reports are available electronically. The Utility notified customers via mail that the Consumer Confidence Report could be accessed on the Town's website. The 2023 Consumer Confidence Reports will be completed and available to consumers by June of 2024.

In addition to sampling the potable water system, water quality samples are routinely taken on the reclaimed water system for chlorine levels and turbidity to assure compliance with regulatory standards. All the ADEQ standards and regulations for reclaimed water were met in 2023.

In 2024 the Water Quality section of the Utility will continue implementation of SAMS Water. SAMS Water is a scheduling monitoring and analysis software tool that helps water systems comply with federal and state drinking water regulations. SAMS Water is an additional module added to the Cross Connection Module we are currently using.

BACKFLOW PREVENTION

Backflow prevention is an important component of water quality designed to protect the public water system. The purpose of this program is to keep the water supply safe from contaminants that could be introduced into the distribution system through backflow, back siphoning or back pressure from customer's plumbing systems or internal processes.

The Backflow Prevention Program is administered in accordance with the Town of Oro Valley Ordinance (O) 07-21, the ADEQ Arizona Administrative Code (A.A.C.) section R18-4-215, and the guidelines of the University of Southern California Foundation for Cross Connection Control and Hydraulic Research.

There are 1,559 backflow prevention assemblies in the program. The following are major activities and accomplishments of Water Quality personnel in 2023:

- Tested 223 backflow assemblies
- Repaired 15 in-ground and construction water backflow prevention assemblies
- Issued 63 permits for new and replacement backflow prevention assemblies
- Implemented new cross connection control program software



Staff repairing and testing Town of Oro Valley backflow prevention assembly. (left).



Staff collecting compliance water samples (left).

SECURITY AND EMERGENCY RESPONSE

Under current federal guidelines, Water Operations personnel are considered first responders. Though primarily mandated by state rules with public health responsibilities (Arizona Administrative Code Title 18), Water Operators also have a public safety responsibility relevant to the water systems they operate which includes support of firefighting tasks. Any water system security situations also directly involve water operations along with the Oro Valley Police Department as a first response action.

In 2020, Utility personnel, with the assistance of a security consultant were mainly focused on finalizing and submitting the Risk and Resilience Assessment Certifications for the America's Water Infrastructure Act (AWIA) of 2018. Certifications for the Oro Valley Water System and the Countryside Water System were submitted, and confirmation received, before the due date of 12/31/2020. Selective training will be conducted in Spring of 2024, and Water Utility staff will participate in an Emergency Simulation Tabletop Exercise. The training will be conducted in accordance with the guidelines from the Department of Homeland Security, Federal Emergency Management Agency, and the United States Environmental Protection Agency. The Utility continues to update the Emergency Response Plan and Business Continuity Plan on an annual basis and will continue to mitigate the elements defined in the vulnerability assessments, as well as those identified through the course of business.

Security features which include perimeter fencing, security walls, warning signage, motion sensors, and cameras at all active production facilities were inspected to maintain integrity. Hydrants throughout the system are protected by security locking systems.

The Utility is kept abreast of local, regional, and national security issues by the Water Information Sharing and Analysis Center (WaterISAC). WaterISAC has established secure and close contact with partners in government to access sensitive and classified security information. WaterISAC maintains two-way communication with the U.S. Department of Homeland Security, especially its National Cybersecurity and Communications Integration Center, the FBI, the U.S. Environmental Protection Agency, State Intelligence Fusion centers, and other Federal and State agencies.

The Utility is also a member of the Arizona Water/Wastewater Agency Response Network (AZWARN). Members of AZWARN agree to provide aid to other member utilities in the event of an emergency.

FINANCIAL HIGHLIGHTS

The Utility is financially sound and continues to manage its revenues, control expenses, and reduce debt. The Water Utility's outstanding revenue bonds have a rating of "AA+" from Standard and Poor's, and "AA" from Fitch Ratings. Ratings criteria include stable economic base, sufficient water supply for current and long-term needs, a manageable capital improvement plan, timely rate increases, maintaining adequate debt service coverage and cash reserve balances.

Revenues and Expenses

The Utility's revenue consists of potable and reclaimed water sales, groundwater preservation fees, miscellaneous service fees and charges, water development impact fees, and interest income. The Utility has two funds:

- **The Operating Fund** is the primary fund for the Utility. Costs for the administration, operations, existing system improvements and debt service are managed in this fund. The sources of revenue are water sales, service-related charges, and Groundwater Preservation Fees (GPF). The GPF funds are dedicated to paying for debt or capital costs related to renewable water resources, renewable water supplies and costs to wheel CAP water to the Town.
- **The Water Resource and System Development Impact Fee Fund (WRSDIF)** provides funding for expansion related projects for new growth, development of renewable sources of water supply and infrastructure required for delivery of those resources. The source of revenue for this fund is impact fees collected at the time water meters are purchased.

Table 6 below illustrates actual to budgeted revenues for Fiscal Year 2022/23 for the Operating Fund and Water Resource and System Development Impact Fee Fund:

TABLE 6

Revenue Source	Actuals FY 2022/23	Budget FY 2022/23	Over / (Under) Budget	% Budget to Actual
Potable Water Sales:				
Residential	\$ 10,552,884	\$ 11,300,000	\$ (747,116)	93.4%
Commercial	\$ 1,034,275	\$ 1,000,000	\$ 34,275	103.4%
Irrigation	\$ 1,298,563	\$ 1,400,000	\$ (101,437)	92.8%
Turf	\$ 82,598	\$ 84,000	\$ (1,402)	98.3%
Construction	\$ 297,443	\$ 225,000	\$ 72,443	132.2%
Reclaimed Water Sales:				
Turf	\$ 1,149,640	\$ 1,300,000	\$ (150,360)	88.4%
Irrigation	\$ 82,649	\$ 65,000	\$ 17,649	127.2%
Construction	\$ 41,631	\$ 9,000	\$ 32,631	462.6%
Subtotal Water Sales:	\$ 14,539,682	\$ 15,383,000	\$ (843,318)	94.5%
Fees, Charges, Misc. & Interest:				
Service Fees & Charges	\$ 795,022	\$ 824,000	\$ (28,978)	96.5%
Miscellaneous	\$ 142,032	\$ -	\$ 142,032	100.0%
Groundwater Preservation Fees	\$ 2,256,987	\$ 2,400,000	\$ (143,013)	94.0%
Impact Fees	\$ 1,818,383	\$ 1,101,346	\$ 717,037	165.1%
Interest Income	\$ 426,923	\$ 250,000	\$ 176,923	170.8%
Subtotal Fees, Charges, Misc. & Interest:	\$ 5,297,316	\$ 4,575,346	\$ 721,970	115.8%
Total Revenues	\$ 19,979,030	\$ 19,958,346	\$ 20,684	100.1%

Revenues from water sales were below budget due to higher-than-average rainfall during FY 2022/23. Impact fee revenues were above budget due to higher than anticipated meter sales.

Table 7 below illustrates actual expenses for the Operating Fund and Water Resource and System Development Impact Fee Fund compared to budgeted expenses (excluding depreciation and amortization) for FY 2022/23:

TABLE 7

Expenses	Actuals FY 2022/23	Budget FY 2022/23	Over / (Under) Budget	% Budget to Actual
Personnel	\$ 3,519,660	\$ 3,653,064	\$ (133,404)	96.3%
Operations & Maintenance	\$ 9,280,511	\$ 9,899,261	\$ (618,750)	93.7%
Capital Outlay	\$ 4,450,097	\$ 4,809,978	\$ (359,881)	92.5%
Total Expenses	\$ 17,250,269	\$ 18,362,303	\$ (1,112,034)	93.9%

Operations & Maintenance was below budget attributed to cost savings in various divisions. Capital outlay was slightly below budget due to projects carried forward to the next fiscal year.

Outstanding Debt

Table 8 is a summary of the outstanding debt (principal only) and the annual debt service payments (principal and interest) for all funds within the Utility:

TABLE 8

Debt Service	Bond Series	Outstanding Debt At 6/30/23	Debt Service Payment -Principal FY 2023/24	Debt Service Payment-Interest FY 2023/24	Interest Rate	Maturity
WIFA Loan-Sr. Lien-Operating	2014	\$ 2,087,127	\$ 325,496	\$ 51,035	2.7%	2028
2015 Excise Tax Bonds-Operating	2015	\$ 439,230	\$ 144,210	\$ 7,012	2.3%	2025
2017 Excise Tax Bonds-Operating	2017	\$ 6,248,394	\$ 1,506,548	\$ 132,531	2.4%	2026
2018 Excise Tax Bonds-Operating	2018	\$ 4,812,000	\$ 375,000	\$ 139,660	3.0%	2033
Series 2021 Sr. Lien Bonds-Operating	2021	\$ 1,621,614	\$ 349,888	\$ 17,517	1.5%	2029
Series 2021 Sr. Lien Bonds-GPF	2021	\$ 2,779,359	\$ 599,688	\$ 30,023	1.5%	2029
Series 2021 Sr. Lien Bonds-WRSDIF	2021	\$ 331,027	\$ 71,424	\$ 3,576	1.5%	2029
TOTAL		\$ 18,318,751	\$ 3,372,254	\$ 381,354		

New debt issuance in the amount of \$20 million is requested in the FY 2024/25 budget. Repayment would be with funds from Groundwater Preservation Fees and Water Resources and System Development Impact Fees. Loan proceeds will be used for the Northwest Recharge, Recovery, and Delivery System (NWRDSD) project. **Water Rates**

The functions and duties of the commission include annually reviewing and developing recommendations for water revenue requirements, water rates and fee structures. The commission evaluates staff recommendations based on an annual water rates analysis to ensure the recommendations meet Town policies and bond covenants. The Utility bases its financial analysis on the American Water Works Association Cash Needs Approach.

The water rate study for FY 2024/25 resulted in a recommendation to increase the base rates and commodity rates for potable water customers as well as an increase to the potable groundwater preservation fee (GPF). These proposed changes will result in a potable water monthly increase of \$3.65 per month (or 7.9%) for a customer with a 5/8-inch meter using 7,000 gallons per month, as compared to last year. Customers with a 5/8-inch meter represent 87 percent of the total customer base and include residential, commercial and irrigation classifications with the majority being residential. GPF is proposed to increase from \$0.90 cents to \$1.00 cents per 1,000 gallons used per month. The proposed changes will be presented to the Town Council on June 5, 2024, and if adopted, the new potable water and potable groundwater preservation fee changes would become effective in July 2024.

All current water rates, fees and charges including impact fees are available to view on the Town website at <https://www.orovalleyaz.gov/government/departments/water-utility>



TOWN OF ORO VALLEY WATER UTILITY

2024 ANNUAL REPORT

APPENDIX A

STATIC GROUNDWATER LEVELS

STATIC GROUNDWATER LEVELS

The following table lists all production wells, the amount of groundwater pumped and the change in depth to groundwater between January of 2022 and 2023 for both the Countryside and Oro Valley Main Water Service areas. To provide context the amount of groundwater pumped and the change in depth to groundwater is also shown for years 2002, 2007, 2012, 2017, 2022, and 2023.

Drawdowns not highlighted indicate an aquifer drawdown while drawdowns highlighted in green indicate aquifer recovery.

Countryside Water Service Area													
Annual Acre-Feet Pumped and Annual Drawdown													
Well ID	2002		2007		2012		2017		2022		2023		2019-2023 5-YEAR AVERAGE
	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Drawdown (Feet)
CS-1	347	-6.20	461	-1.67	390	-1.50	239	-0.39	290	-3.77	183	-1.69	-0.82
CS-2	588	-9.66	353	2.98	356	-4.00	293	-1.67	152	-6.36	220	-0.47	-0.95
Average		-7.93		0.66		-2.75		-1.03		-5.07		-1.08	-0.89
Total	935		814		746		532		442		403		
Oro Valley Water Service Area													
Annual Acre-Feet Pumped and Annual Drawdown													
Well ID	2002		2007		2012		2017		2022		2023		2019-2023 5-YEAR AVERAGE
	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Pumpage (Acre-Feet)	Drawdown (Feet)	Drawdown (Feet)
C-4	40	-8.32	263	-14.26	92	-1.84	83	-4.90	98	-1.71	77	4.82	0.32
C-5	840	-8.60	599	-1.75	272	1.08	478	-4.89	241	-0.81	606	-7.43	-2.46
C-6	1,105	-12.84	886	-4.87	274	1.29	302	-2.39	251	-0.77	165	-3.81	-1.31
C-8	273	-12.31	277	-1.80	243	-5.33	296	-8.61	365	-1.13	231	2.35	-1.27
C-9					374	-3.37	420	-0.83	276	0.02	353	-5.85	-1.70
D-1		0.00	434	-5.66	169	3.33	133	-4.54	153	-0.08	122	-3.08	-1.35
D-6	406	-4.95	325	-5.09	247	8.83	113	-3.83	157	1.51	127	-1.30	-0.85
D-7	494	-8.77	532	-1.15	338	-7.08	182	-3.92	260	-4.24	257	7.74	-1.22
D-8	319	-10.36	11	7.25	216	-12.15	183	-4.01	201	-2.87	145	4.48	-0.58
D-9			567	-7.91	723	-3.00	382	-1.96	116	-3.73	256	-1.60	-1.47
E-1B					282	12.25	471	-7.25	467	-1.47	462	-7.74	-2.44
E-2	626	-10.13	518	-4.96	271	2.55	259	-2.29	366	-1.16	54	5.82	-0.77
E-5B	1,180	-3.20	961	-7.89	192	6.96	330	-5.84	315	-2.00	345	1.71	-1.40
E-6B	1,067	-4.06	840	-10.31	270	0.38	533	-7.95	386	0.89	488	0.07	-1.07
E-7B			748	-7.50	197	-1.63	330	-7.04	314	3.02	366	-0.93	-0.90
F-1	415	-8.05	496	1.03	496	0.78	515	-2.34	420	-3.07	468	0.46	-1.69
Average		-7.63		-4.63		0.19		-4.54		-1.10		-0.27	-1.26
Total	6,766		7,456		4,654		5,010		4,384		4,522		



TOWN OF ORO VALLEY WATER UTILITY

2024 ANNUAL REPORT

APPENDIX B

PROPOSED FIVE - YEAR CAPITAL IMPROVEMENT PROGRAM

B-1 Projects funded by the Operating Fund

B-2 NWRD Projects funded by the Groundwater Preservation Fee

B-2 NWRD Projects funded by the Water Resource and System
Development Impact Fee Fund

B-3 Miscellaneous Growth-Related Projects funded by the Water
Resources and System Development Impact Fee Fund

5-Year							
Oro Valley Water Utility							
Existing System Capital Projects							
		Colors:		Study/Design/Permit	Construct	Purchases	
Operating Fund Projects							
Project No.	Project Name	2024-25	2025-26	2026-27	2027-28	2028-29	Totals Years 1-5
Wells							
1	Well Rehabilitaion	220,000	220,000	220,000	220,000	520,000	1,400,000
2	HP Tank Replacement		170,000	170,000	170,000	170,000	680,000
	Subtotal	220,000	390,000	390,000	390,000	690,000	2,080,000
Reservoirs							
3	Reservoir Rehabilitation	200,000		200,000	200,000	400,000	1,000,000
	Subtotal	200,000	-	200,000	200,000	400,000	1,000,000
Booster Stations							
4		100,000	470,000	100,000	500,000	740,000	1,910,000
5			70,000	170,000	170,000	170,000	580,000
6	Reclaimed Facility Booster Rehab	320,000					320,000
7	High Mesa Booster Rehab		100,000	400,000	740,000		1,240,000
	Subtotal	420,000	640,000	670,000	1,410,000	910,000	4,050,000
Mains							
8	El Con/Cmo Diestro main & valve replacement	160,000					160,000
	Subtotal	160,000	-	-	-	-	160,000
Buildings & Improvements							
	Subtotal	-	-	-	-	-	-
	Total Capital Projects	1,000,000	1,030,000	1,260,000	2,000,000	2,000,000	7,290,000
Meters & Equipment							
9	Water Meters - New Connections (Based on 210 meters per year)	150,000	150,000	150,000	150,000	150,000	600,000
10	Control Systems	200,000	500,000	500,000	500,000	500,000	1,700,000
	Subtotal	350,000	650,000	650,000	650,000	650,000	2,300,000
Vehicles							
11	Replacement Vehicles - Meter Operations			70,000			70,000
12	Replacement Vehicles - Distribution Operations		70,000			70,000	70,000
13	Replacement Vehicles - Production Vehicles	60,000			70,000		130,000
14	New Vehicle - Water Control System Operations			70,000		70,000	70,000
15	Replacement Vehicles - Const Inspectors				70,000		70,000
16	Replacement Vehicles - Water Quality	60,000			70,000	70,000	130,000
17	ADC Truck / Trailer / Tools						-
	Subtotal	120,000	70,000	140,000	210,000	210,000	540,000
	Total for all projects	1,470,000	1,750,000	2,050,000	2,860,000	2,860,000	10,130,000

5 - Year							
Oro Valley Water Utility							
Projects funded by Groundwater Preservation Fees (GPF)							
NWRRRDS Projects - Existing Customer Related Projects - 40% of Total NWRRDS Costs							
Colors:		Study/Design/Permit		Construct		Purchases	
NWRRDS Growth related projects paid for by GPF							
Project No.	Project Name	Percent of Total	2024-25	2025-26	2026-27	2027-28	Totals Years 1-5
NWRRDS Partnered Projects							
1	NWRRDS (Partnered) Well Equipping TRICO power to sites and associated tasks	40%	480,000	480,000	-	-	960,000
2	NWRRDS (Partnered) Pipeline construction (Recovered Water & Transmission)	40%	1,400,000	2,440,000	-	-	3,840,000
3	NWRRDS (Partnered) Forebay Reservoir Construction	40%	1,600,000	-	-	-	1,600,000
Subtotal			3,480,000	2,920,000	-	-	6,400,000
NWRRDS Independent Projects							
4	NWRRDS (Independent) Booster Station at Partnered Reservoir	40%	980,000	300,000	-	-	1,280,000
5	NWRRDS (Independent) Pipeline from Partnered Reservoir to Shannon Rd. Reservoir	40%	1,600,000	2,880,000	-	-	4,480,000
6a	NWRRDS (Independent) Shannon Road Reservoir	40%	-	-	-	-	-
6b	NWRRDS (Independent) Shannon Road Booster Station	40%	160,000	-	-	-	160,000
Subtotal			2,740,000	3,180,000	-	-	5,920,000
Existing System Improvements for blending & distribuion of NWRRDS water							
7	NWRRDS (Independent) E-zone Main Interconnect to Tangerine	40%	640,000	-	-	-	640,000
8	NWRRDS (Independent) E-zone Main Interconnection to Naranja	40%	-	-	-	-	-
9	NWRRDS (Independent) D-zone Blending line extension to Reservoir	40%	-	-	-	-	-
Subtotal			640,000	-	-	-	640,000
Total for all projects			6,860,000	6,100,000	-	-	12,960,000

5 - Year							
Oro Valley Water Utility							
Projects funded by Water Resources and System Development Impact Fee Fund (WRSDIF Impact Fees)							
NWRRRDS Projects - Growth Related Projects - 60% of Total NWRRDS Costs							
		Colors:	Study/Design/Permit	Construct	Purchases		
NWRRDS Growth related projects paid for by WRSDIF							
Project No.	Project Name	Percent of Total	2024-25	2025-26	2026-27	2027-28	2028-29
	NWRRDS Partnered Projects						Totals Years 1-5
1	NWRRDS (Partnered) Well Equipping TRICO power to sites and associated tasks	60%	720,000	720,000	-	-	-
2	NWRRDS (Partnered) Pipeline construction (Recovered Water & Transmission)	60%	2,100,000	3,660,000	-	-	-
3	NWRRDS (Partnered) Forebay Reservoir Construction	60%	2,400,000	-	-	-	-
	Subtotal		5,220,000	4,380,000	-	-	-
	NWRRDS Independent Projects						
4	NWRRDS (Independent) Booster Station at Partnered Reservoir	60%	1,470,000	450,000	-	-	-
5	NWRRDS (Independent) Pipeline from Partnered Reservoir to Shannon Rd. Reservoir	60%	2,400,000	4,320,000	-	-	-
6a	NWRRDS (Independent) Shannon Road Reservoir	60%	-	-	-	-	-
6b	NWRRDS (Independent) Shannon Road Booster Station	60%	240,000	-	-	-	-
	Subtotal		4,110,000	4,770,000	-	-	-
	Exisiting System Improvements for blending & distribuion of NWRRDS water						
7	NWRRDS (Independent) E-zone Main Interconnect to Tangerine	60%	960,000	-	-	-	-
8	NWRRDS (Independent) E-zone Main Interconnection to Naranja	60%	-	-	-	-	-
9	NWRRDS (Independent) D-zone Blending line extension to Reservoir	60%	-	-	-	-	-
	Subtotal		960,000	-	-	-	-
	Total for all projects		10,290,000	9,150,000	-	-	-

5 - Year								
Oro Valley Water Utility								
Projects funded by Water Resources and System Development Impact Fee Fund (WRSDIF Impact Fees)								
Miscellaneous Growth Related Projects								
		Colors:	Study/Design/Permit	Construct	Purchases			
Miscellaneous Growth related projects paid for by WRSDIF								
Project No.	Project Name	Percent Growth	2024-25	2025-26	2026-27	2027-28	2028-29	Totals Years 1-5
	Wells							
1	Steam Pump D-Zone Well (Design/Permit/Drill/Equip)	100%	300,000					300,000
2	La Posada Well (Design/Permit/Drill/Equip)	100%	300,000					300,000
	Subtotal		600,000	-	-	-		600,000
	Reservoirs							
	Subtotal		-	-	-	-		-
	Booster Stations							
3	La Canada Booster Station Expansion	100%	1,700,000					1,700,000
	Subtotal		1,700,000	-	-	-		1,700,000
	Mains							
	Subtotal		-	-	-	-		-
	Buildings and Improvements							
	Subtotal		-	-	-	-		-
	Total for all projects		2,300,000	-	-	-	-	2,300,000



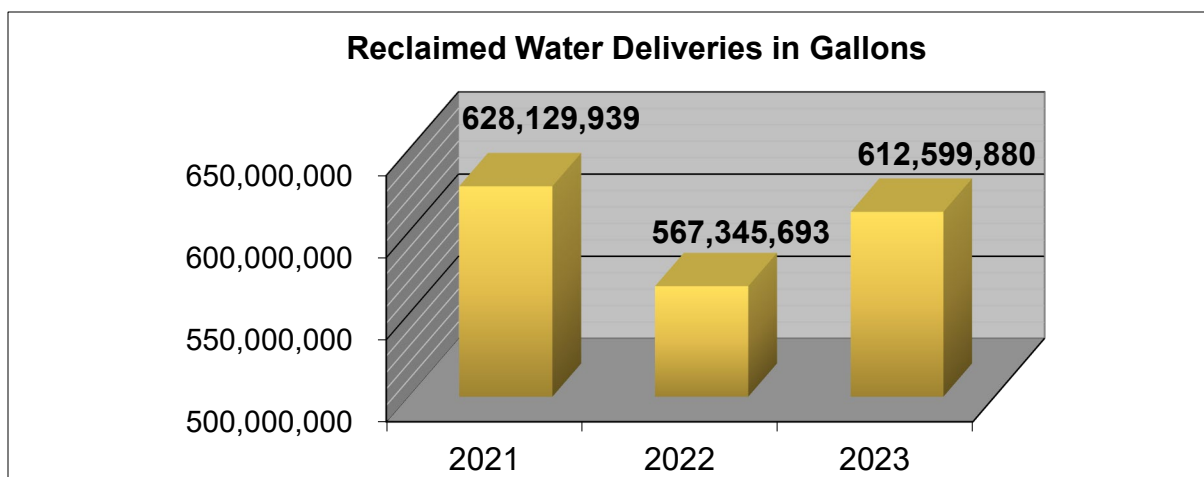
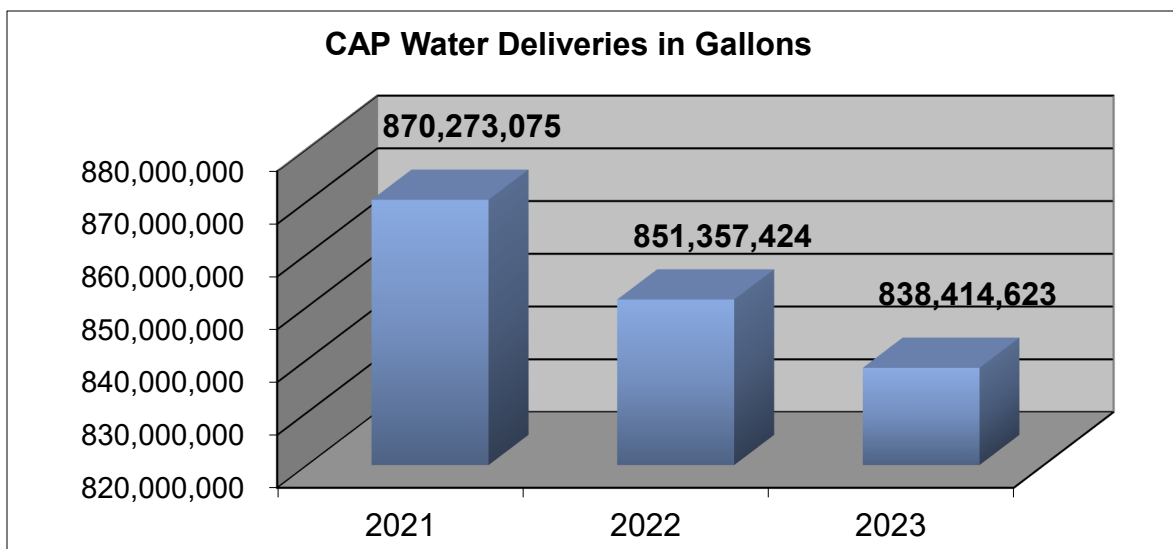
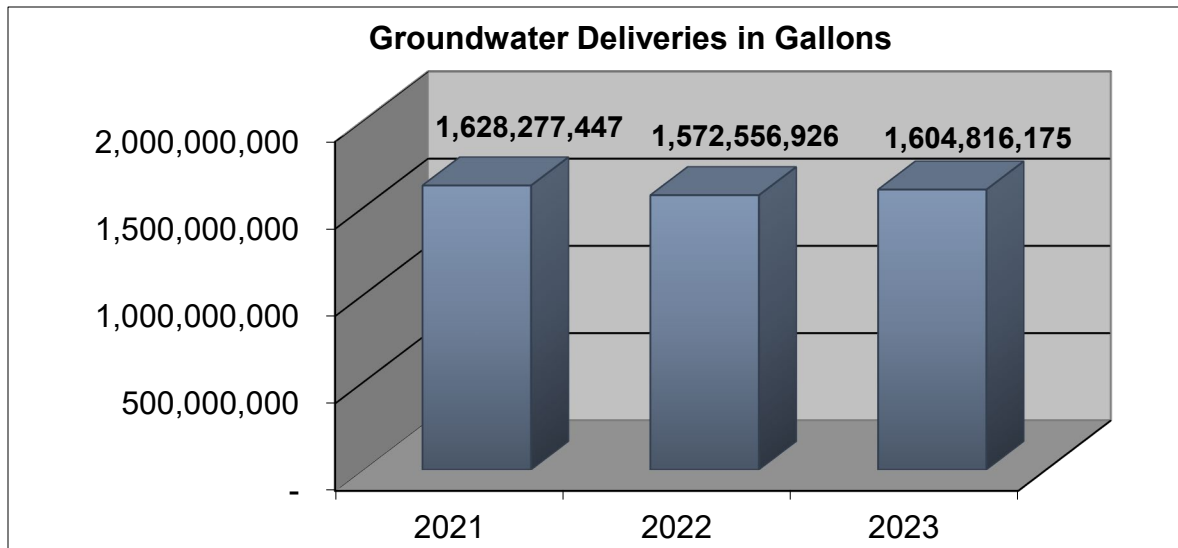
TOWN OF ORO VALLEY WATER UTILITY

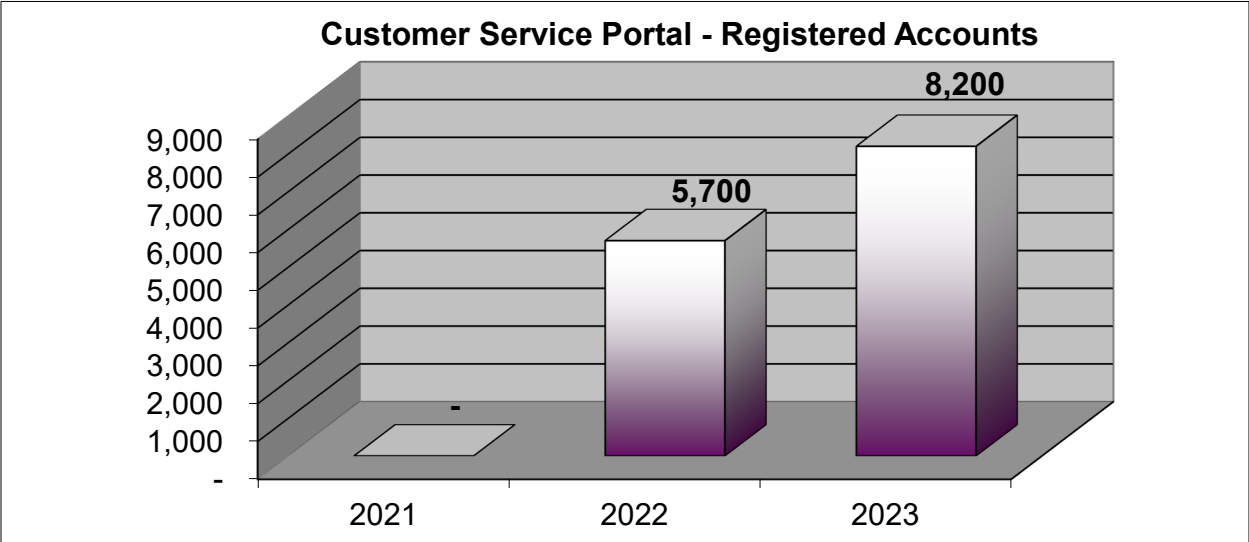
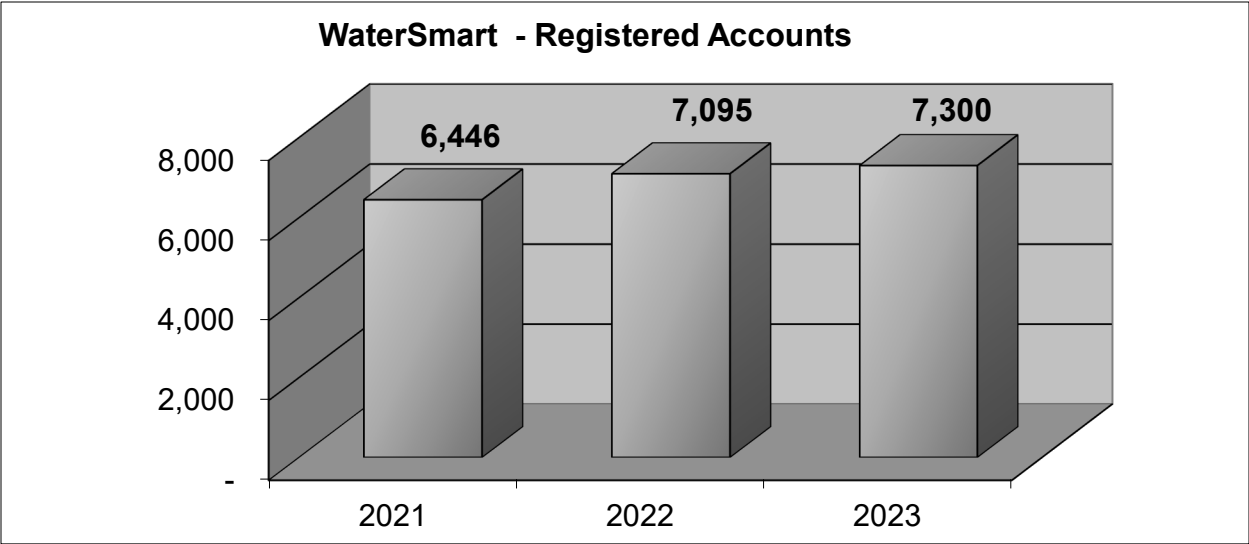
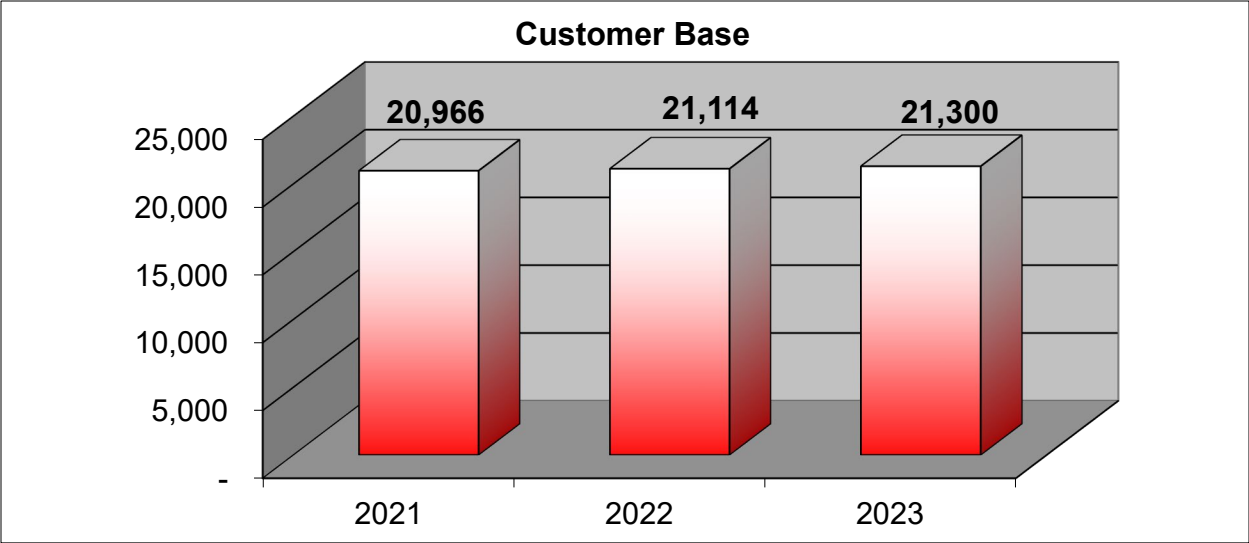
2024 ANNUAL REPORT

APPENDIX C

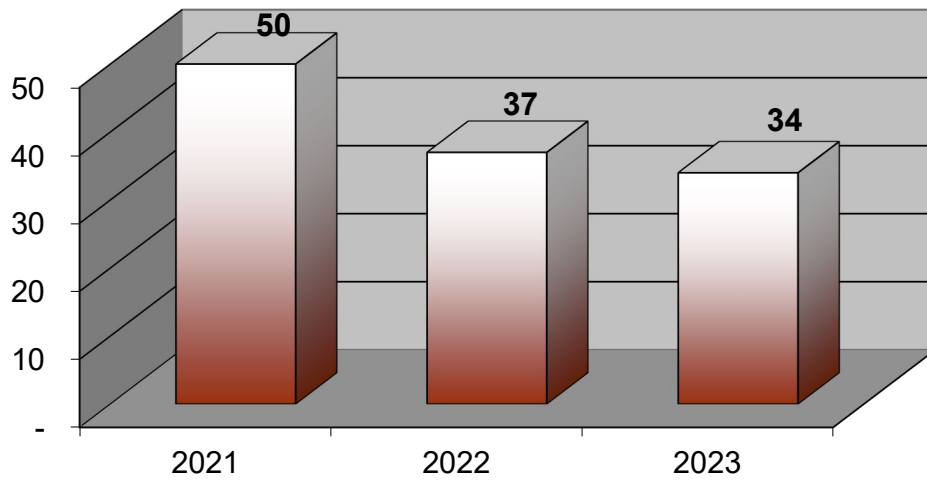
UTILITY STATISTICS

UTILITY STATISTICS

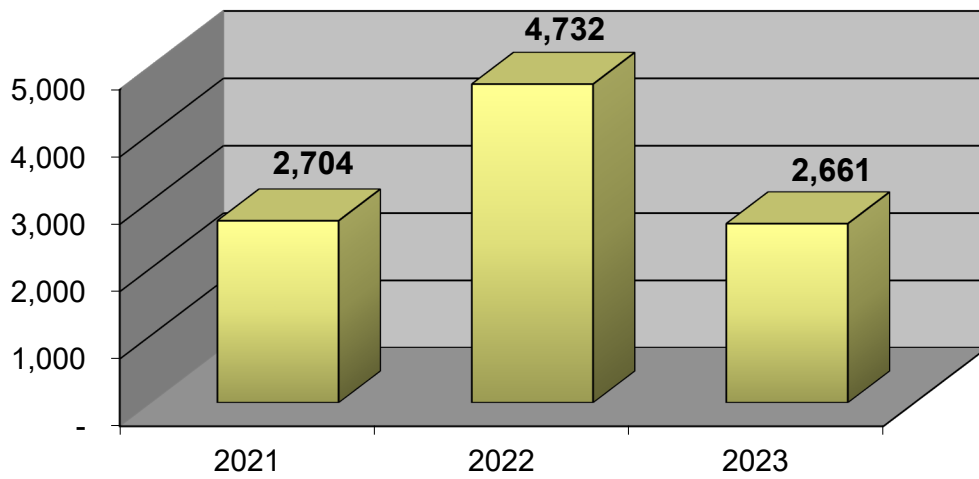




Water Conservation Audits



Water Quality Samples





TOWN OF ORO VALLEY WATER UTILITY

2024 ANNUAL REPORT

APPENDIX D

ASSET INVENTORY

Water Utility Capital Assets at 6/30/23

Potable Assets		Value
CAP Water Rights (allotment in acre feet)	10,305	\$ 8,534,490
Land	-	\$ 2,189,864
Wells (active & inactive)	35	\$ 11,829,514
Booster Stations (active & inactive)	26	\$ 5,495,815
Reservoir Capacity (million gallons)	11	\$ 13,518,460
Fire Hydrants	2,414	\$ 3,806,218
Meters	21,300	\$ 9,179,780
Services	22,119	\$ 6,235,104
Equipment	-	\$ 2,627,086
Structures	-	\$ 1,998,819
Vehicles	38	\$ 2,294,247
Telemetry	-	\$ 451,416
Buildings & Improvement	-	\$ 645,495
Water Mains (miles)	376	\$ 71,039,632
Construction in Progress	-	\$ 11,709,343
Subtotal Value of Potable Assets		\$ 151,555,283
Accumulated Depreciation		\$ (58,375,061)
Net Value of Potable Assets		\$ 93,180,222
Reclaimed Assets		
Land	-	\$ 220,796
Telemetry	-	\$ 29,654
Booster Stations	2	\$ 7,478,811
Reservoir Capacity (million gallons)	1	\$ 2,494,603
Water mains (miles)	14	\$ 14,762,599
Subtotal Value of Reclaimed Assets		\$ 24,986,462
Accumulated Depreciation		\$ (8,170,513)
Net Value of Reclaimed Assets		\$ 16,815,949
Total Value of Water Assets Net of Depreciation		\$ 109,996,171



TOWN OF ORO VALLEY WATER UTILITY

2024 ANNUAL REPORT

APPENDIX E

ACRONYMS AND GLOSSARY

ACRONYMS

ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AF	Acre Feet
AMI	Advanced Metering Infrastructure
AWBA	Arizona Water Banking Authority
AZWARN	Arizona Water and Wastewater Agency Response Network
CAGR	Central Arizona Groundwater Replenishment District
CAP	Central Arizona Project
CAVSRP	Central Avra Valley Storage and Recovery Project
CSWSA	Countryside Water Service Area
CY	Calendar Year
DAWS	Designation of Assured Water Supply
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FY	Fiscal Year
GIS	Geographic Information System
GPF	Groundwater Preservation Fee
IGA	Intergovernmental Agreement
MGD	Million Gallons per Day
NWRRDS	Northwest Recharge and Recovery Delivery System
OVWSA	Oro Valley Water Service Area
PDEQ	Pima County Department of Environmental Quality
SCADA	Supervisory Control and Data Acquisition
WRSDIF	Water Resource and System Development Impact Fee Fund

GLOSSARY

Acre Foot – The volume of water necessary to cover an area of one acre to the depth of one foot, 43,560 cubic feet. One acre foot is equal to 325,851 US gallons.

Arizona Water/Wastewater Agency Response Network – AzWARN is a statewide mutual assistance program between water and wastewater utilities. This volunteer-based network allows utilities to help one another in times of emergency when the resources of a utility are overwhelmed. The foundation of the network is a signed mutual aid agreement between all participating utilities.

Aquifer – An underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, or silt) from which groundwater can be extracted using a water well.

Central Arizona Groundwater Replenishment District (CAGRD) – It was created in 1993 to replenish (or recharge) the amount of groundwater pumped or delivered to its members which exceeds their pumping limitations using any water source available except groundwater.

Central Avra Valley Storage and Recovery Project – An approved Underground Storage Facility operated by Tucson Water located in the Tucson Active Management Area located approximately one mile west of Sandario Road and just south of Mile Wide Road, in the Avra Valley, Pima County, Arizona.

Colorado River Basin – The drainage basin of the Colorado River is located in the southwestern United States and northwest Mexico. The 1,450 mile river drains an expansive, arid watershed that encompasses parts of six U.S. (Wyoming, Colorado, Utah, New Mexico, Arizona and California) and two Mexican states (Sonora and Baja). Rising in the central Rocky Mountains in the U.S., the river flows generally southwest across the Colorado Plateau and through the Grand Canyon before reaching Lake Mead on the Arizona–Nevada line, where it turns south toward the international border at Yuma, Arizona. After entering Mexico, the Colorado approaches the large Colorado River Delta where it naturally empties into the Gulf of California.

Effluent – Generally refers to wastewater that is treated and discharged to a natural water course. Oro Valley Water Utility's effluent is treated at facilities owned and operated by Pima County. This treated wastewater effluent is the source of Oro Valley's reclaimed water.

Five Year Capital Improvement Plan – A long-term plan for development of water related projects to develop and deliver water supply to our community. It includes existing system improvements and expansion related projects to meet future demands.

Groundwater – The water located in an aquifer beneath earth's surface in soil pore spaces and in the fractures of rock formations. The depth at which soil pore spaces or fractures and voids in rock become completely saturated with water is called the water table.

Groundwater Extinguishment Credits – Credits that are generated when a grandfathered groundwater right is extinguished or retired and never used again. The credits are issued as a certificate from the Arizona Department of Water Resources. Ownership of the credits can be transferred from the owner to another entity within the same Active Management Area.

Kai Farms – An approved Groundwater Savings Facility located at a farm near Redrock, Arizona that uses CAP water for irrigation.

Lake Powell – A water storage reservoir on the Colorado River near Page, Arizona with a capacity of 24.3 million acre feet. Glen Canyon Dam forms the lake and provides hydro-electric power.

Lake Mead – The largest water storage reservoir in the United States with a capacity of 25.9 million acre feet. It is located on the Colorado River about 24 miles southeast of Las Vegas, Nevada. Hoover Dam forms the lake and provides hydro-electric power.

Long-Term Groundwater Storage Credit – A credit for storing CAP water or wastewater effluent that is accrued when this water is delivered to and recharged into an approved underground water storage facility. Once the water is recharged and stored and a deduction is taken for losses to the aquifer, it becomes a credit that can be used in the future either by direct delivery or used as credits to replace groundwater pumped from recovery wells.

Lower Santa Cruz Replenishment Project – An approved Underground Storage Facility operated by the Central Arizona Project located in the Tucson Active Management Area near Marana, Arizona.

Northwest Recharge Recovery and Delivery System – Partnership project between The Town of Oro Valley, Metro Water and Town of Marana to plan, design, construct and operate a recovery and delivery system to facilitate the delivery of recovered CAP water from the Lower Santa Cruz Recharge Project and the Avra Valley Recharge Project to each partner's respective service area.

Pima Mine Road Recharge Project – An approved Underground Storage Facility operated by the Central Arizona Project located in the Tucson Active Management Area near Sahuarita, Arizona.

Recharge – The replenishment of an aquifer's groundwater. An aquifer recharges water that percolates into the ground. Recharge takes advantage of water supplies available now and stores them for future use. Recharge also allows the slow introduction of new water supplies into our drinking water system by blending the new source with existing groundwater.

Tucson Active Management Area – One of five Active Management Areas in Arizona established under the 1980 Groundwater Code to manage groundwater usage through the Assured Water Supply Program.

Turbidity – Turbidity is the cloudiness or haziness of a fluid caused by large numbers of individual particles that are generally invisible to the naked eye similar to smoke in air.

Zones – A “zone”, or “pressure zone” is defined as the area bounded by both a lower and upper elevation. Water service areas with elevation changes establish pressure zones to ensure that all customer's water pressure is within a prescribed pressure range regardless of the customers' service elevation.