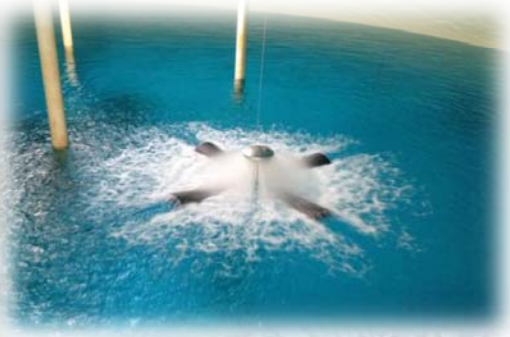
Oro Valley Water Utility Commission Annual Report

April 2016









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WATER UTILITY COMMISSION ANNUAL REPORT
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ORO VALLEY TOWN COUNCIL

Satish I. Hiremath, D.D.S., Mayor
Lou Waters, Vice Mayor
Brendan Burns, Councilmember
William Garner, Councilmember
Joe Hornat, Councilmember
Mary Snider, Councilmember
Mike Zinkin, Councilmember

ORO VALLEY WATER UTILITY COMMISSION

Winston Tustison, Chair
Robert Milkey, Vice Chair
Javier Arriaga, Commissioner
Anne Campbell, Commissioner
Thomas Kibler, Commissioner
Shanna Weagle, Commissioner

TOWN STAFF

Greg Caton, Town Manager
Philip C. Saletta, P.E., Water Utility Director
Peter Abraham, P.E., Water Resources and Planning Manager
Shirley Kiel, Water Utility Administrator

Special recognition to OVWU staff that provided graphics, data, photos and their time to assist in the preparation of this report:

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Mark Moore
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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 Town Code – Water Code – Article 15-4 on the Town website.

The Commission is composed of five to seven members, serve a term of three years, and are limited to a maximum of two full successive terms. Members are residential and commercial/turf representatives served by the utility. One residential representative from the Water Utility's Countryside service area located outside of the Town boundary is eligible to serve.

The primary responsibility of the Commission is to review and make recommendations on those Water Utility items that require Mayor and Council action. These items may include water system development, long-term water sources, capital needs, rate adjustments, capital budget and allocations, state and federal legislation regarding water-related issues, expansion of utility service areas, and water acquisitions. The Commission also assists in community programs and education related to the Water Utility.

The Commission welcomes the public to attend its meetings. The Commission meets the second Monday of each month. All meetings are noticed on the Town's website.

In 2015, the Commission met on 10 occasions. Notable actions taken by the Commission in 2015 include:

Meeting Date	Action Item
February 9, 2015	Election of Chair and Vice Chair
March 9, 2015	Approval of and recommendation for acceptance of the Annual Report
June 8, 2015	Recommendation for a change in policy for cash reserves
June 8, 2015	Recommendation to expand the use of the groundwater preservation fees
October 12, 2015	Recommendation to approve refunding of the 2005 Series Bonds
October 12, 2015	Recommendation for Amendment 3 to the Reclaimed IGA
November 9, 2015	Recommendation for an increase in water rates and fees

Additional notable items that were on Commission agendas in 2015 include:

- Water conservation
- Long-term storage credits
- Arizona Power Authority Hoover Power Reallocation
- Groundwater extinguishment credits
- Water resources
- Water policies and code
- Advanced metering infrastructure
- Colorado River and Central Arizona Project water
- Your Voice, Our Future
- Well and aquifer metrics

Notable issues planned for Commission agendas in 2016 include:

- Review and approval of Annual Report
- Continued planning for long-term CAP water delivery
- Review of water rates analysis and developing a Preferred Financial Scenario
- Review of contract with Arizona Power Authority for Hoover Power Reallocation
- Review of IGA for wheeling CAP water
- Review water code changes pertaining to water conservation and penalties
- Review annual water level data and aquifer metrics, well analysis and condition
- Review Drought Preparedness Plan

In addition to the regular Commission meetings, there are meetings conducted by three standing subcommittees: the Finance Subcommittee, the Conservation Subcommittee and the Water Resources Subcommittee. In 2015, the subcommittee membership was as follows:

Conservation Subcommittee:	Richard Davis and Anne Campbell
Finance Subcommittee:	Winston Tustison and Javier Arriaga
Water Resources Subcommittee:	Richard Reynolds, Javier Arriaga and Shanna Weagle

The Commission and staff would like to thank and acknowledge Richard Davis and Richard Reynolds for their dedication and service on the Water Utility Commission through December 2015.

WATER UTILITY COMMISSION 2016

Winston Tustison, Chair

Robert Milkey, Vice Chair

Javier Arriaga, Commissioner

Anne Campbell, Commissioner

Thomas Kibler, Commissioner

Shanna Weagle, Commissioner

EXECUTIVE SUMMARY

TOWN OF ORO VALLEY
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The goals of this report are to brief the Mayor and Council and the public on the annual work of the Commission, as well as to provide updated information on the Oro Valley Water Utility (Water Utility). The information is organized in sections related to the operation of the Water Utility. It includes topics on customer service, water quality, water supply, water resource planning, conservation and capital improvements. This report covers information and activities primarily for calendar year 2015 ending December 31, 2015. However, some information is as of fiscal year (FY) ending June 30, 2015 and is noted as such in the report. The body of this report focuses on the Water Utility, noting key metrics, changes from previous years and new information relevant to current topics being addressed.

CUSTOMER SERVICE SECTION

In 2015 the Water Utility experienced a 0.82% growth rate in customer connections, with 157 new meters installed. At the end of 2015, the Water Utility had 19,264 customer connections serving a population of 42,953. Customer service staff responded to 35,271 customer contacts, averaging 142 contacts per day.

In 2015 the Water Utility delivered and billed for 2.866 billion gallons (8,795 acre feet) of water, of that 2.21 billion gallons (6,782 acre feet) were potable and 656 million gallons (2,013 acre feet) were reclaimed water. Customer Service processed 228,963 bills, collecting a total of $15.2 million in water revenues for the Water Utility.

METER OPERATIONS SECTION

During 2015, the meter operations team continued with Phase III and began Phase IV of the Advanced Metering Infrastructure (AMI) project and meter replacement program. Phase IV, which includes large meter installations, is the final stage of the AMI Project and is expected to be completed in June of 2016. The new meters provide more accurate measurements of water, automate meter readings, increased customer service capabilities and can help customers better manage their water use.

WATER QUALITY SECTION

For the fourteenth consecutive year, the Water Utility is proud to report that it did not experience any water quality violations. In 2015 the Water Utility received 2,282 analytical results for required water sampling and operational data. Our water quality was in compliance with all standards established by federal and state agencies. The Water Utility remains up-to-date with testing protocol and in 2016 expects to phase in seven proposed and pending regulations related to monitoring rules.

CURRENT WATER SUPPLY

The Water Utility operates two water systems, the Oro Valley Water Service Area (OVWSA) and the Countryside Water Service Area (CSWSA). There are three sources of supply: groundwater, Central Arizona Project (CAP) water and reclaimed water. Groundwater is pumped from wells in the aquifer below the water service areas and delivered through the potable water distribution systems. In 2015, the total water produced and delivered to both service areas was 9,185 acre-feet (2.993 billion gallons). This amount is 514 acre-feet less than the total amount produced in 2014. This reduction is due to continued water conservation and customer response to wetter weather conditions. In addition, system operations are more efficient due to quicker response times to repair system leaks and main breaks and less unaccounted-for water due to the Advanced Metering Infrastructure Project.

The Water Utility pumped 5,000 acre feet (1.63 billion gallons) of groundwater from its wells, and delivered 2,074 acre feet (676 million gallons) of CAP water and 2,111 acre-feet (687 million gallons) of reclaimed water.

In 2015, groundwater levels declined in the Oro Valley aquifer, but less in 2015 than in 2014. Well water levels in the OVWSA declined an average of 1.13 feet in 2015 compared to 1.58 feet in 2014. Water levels in CSWSA rose an average of 5.25 feet in 2015 compared to an average rise of 0.70 feet in 2014.

WATER RESOURCE PLANNING AND MANAGEMENT

The Water Utility uses CAP water in three ways: to recharge and recover for delivery to the water system, to annually recharge and recover water produced from our wells, and to store water for future use. In 2015, the Water Utility increased the total volume of CAP water it purchased from 9,000 to 10,305 acre-feet, its entire annual CAP water allocation. In 2016 the Water Utility will also purchase 10,305 acre feet, further increasing the amount stored as long-term storage credits for future use. It is anticipated that over the next four to five years the Water Utility could increase its long-term storage credit account by 10,000 acre feet. As of December 31, 2015 a total of 13,672 acre feet are in our long-term storage credit account, an increase of 3,069 acre feet from 2014.

In 2015, the Water Utility purchased 2,130 acre feet of groundwater extinguishment credits to increase the balance in our Groundwater Allowance Account. The total balance in our Groundwater Allowance Account at the end of 2015 was 16,374 acre feet.

If current drought conditions in the Colorado River Basin persist and no other action is taken, projections suggest that CAP water deliveries to municipal water providers may be reduced in the 2026 to 2030 time frame. If our CAP water deliveries are reduced in the future, the Water Utility plans to use our long-term storage credits and also utilize some of the CAP water that has been stored by the Arizona Water Banking Authority.

WATER CONSERVATION

The Water Utility primarily encourages water conservation by informing and educating our customers. Specifically in 2015, the following conservation efforts were accomplished:

- 424 students participated in Conservation Kids, our youth water conservation education program for elementary schools in Oro Valley.
- 85 customer water audits were performed to identify specific ways the customer can reduce water use. The analysis performed in 2015 indicated that water use was reduced by an average of 22% for the audits completed in 2014.
- AquaHawk Alerting is now available to those customers with AMI meters as an online service that shows hourly water use and will send personalized alerts to help customers better manage daily water use and detect leaks. The utility plans to expand our outreach efforts to increase enrollment in AquaHawk Alerting.
- Community outreach activities such as speaking engagements, conservation presentations at homeowner associations, and participation at community events.

WATER UTILITY OPERATIONS - PRODUCTION AND DISTRIBUTION

Production and Distribution operate 24 hours per day for 365 days per year to deliver water to our customers. In 2015 production staff responded to after-hours calls totaling 547 work hours and distribution staff responded to 224 after-hours call outs.

Notable highlights in 2015 include maintenance of 23 disinfection injection pumps; maintenance at 20 wells, 26 booster stations and 18 storage tanks; continued delivery and blending of CAP water; maintained or replaced 56 fire hydrants; and repaired 6 service line breaks.

Special distribution projects in 2015 at Naranja Park included the installation of 120 feet of 4-inch fire line, 1,500 feet conduit for the I.T. Department and a 1-inch copper service line to the modular building.

SECURITY AND EMERGENCY RESPONSE PLAN

In 2015, the Water Utility updated the security program, Emergency Response Plan, and the Business Continuity Plan. In addition, 47 new hydrant defenders and locks were installed to protect the water system.

WATER RESOURCE AND PLANNING DIVISION

In 2015, the Water Utility inspected and approved 12 new development projects, 5 capital projects and 2 projects constructed by Water Utility personnel. The completion of these new development projects together with capital projects added approximately 4 additional miles of pipeline to the existing potable water distribution system.

In 2015, design of 3 pipeline relocation projects were conducted as part of roadway improvement projects. These include a Tangerine Road reclaimed water line, Lambert Lane and La Cholla Blvd. potable water lines. Handrails were installed on the top of 2 tanks for safety. Mixers were purchased and will be installed at 7 tanks to improve water quality. A study was performed to assess the condition and operation of hydro-pneumatic tanks located at well sites within the system.

FINANCIAL HIGHLIGHTS, WATER RATES AND FEES

The Water Utility continues to be fiscally sound. It met all revenue requirements, exceeded the debt service coverage ratio requirements and maintained adequate cash reserves. In 2015, Standard and Poor's affirmed our AA rating and Fitch affirmed our AA- rating, both with a stable outlook. In 2015, the Water Utility refunded the 2005 bond issue to reduce debt service payments.

In 2015, the Commission recommended changes to the cash reserve policy and the allowable uses of groundwater preservation fees. Both of these recommendations were approved by Mayor and Council on June 17, 2015.

In 2015, recommendations regarding water rates, fees and charges were provided in the Water Rates Analysis Report. The recommendations included a slight increase in the water commodity rates. The water rate recommendations were approved by Mayor and Council on January 6, 2016.

CONCLUSION

The Oro Valley Water Utility Commission is proud to serve the Mayor and Council of the Town of Oro Valley and its residents and customers. We are pleased to present this Annual Report to the Mayor and Council for their consideration.

Any questions regarding this report should be directed to Philip Saletta, Director, Oro Valley Water Utility at 229-5010. Additional information for the Water Utility can also be found on the Town website at *https://www.orovalleyaz.gov/town/departments/water-utility.*

WATER UTILITY COMMISSION ANNUAL REPORT

CUSTOMER SERVICE

Customer service responsibilities range from handling payments to responding to questions related to billing, opening or closing an account, water quality or pressure and flow problems. Providing professional and courteous service is paramount to the successful operations of the Water Utility.

Customer Service personnel include Customer Service Specialists and Utility Operators. This staff is responsible for meter reading, meter installation, billing, collection and customer service for 19,264 water service connections serving 42,953 residents. The Utility has grown in water service connections over the past year and in 2015 an additional 157 meters were installed for a growth rate of 0.82%.

In 2015 the Water Utility delivered:

- 2.21 billion gallons (6,782 acre feet) of potable water
- 656 million gallons (2,013 acre feet) of reclaimed water for irrigation to five golf courses and athletic fields at Naranja Park and one school.
- Combined total of 2.866 billion gallons (8,795 acre feet) of water delivered and billed to our customers. This amount is 137 million gallons (421 acre-feet) less than the 2014 amount.

The Customer Service Section mailed and processed 228,963 bills and responded to 35,271 customer contacts averaging 142 contacts per day.

Customer Service generates monthly bills for the Water Utility, Pima County Regional Wastewater Reclamation Department and the Town's Storm Water Utility. Although customers receive a combined bill, the Water Utility is separate from the Oro Valley Storm Water Utility and Pima County Wastewater Utility and only bills and collects for those entities under existing agreements. In 2015, the Utility collected a total of $24,548,000 and posted payments as follows:

• Oro Valley Water Utility	$ 15,195,000
• Pima County Wastewater Reclamation	$ 8,584,000
• Town of Oro Valley Storm Water Utility	$ 769,000
TOTAL	$ 24,548,000

The Water Utility also collects taxes on water use that are imposed by the State of Arizona and the Town of Oro Valley. These taxes are distributed to the State and the Town. The Water Utility receives all of its revenues from water rates and fees and does not receive any funding from taxes.

The Advanced Metering Infrastructure (AMI) project is a valuable tool that enables Customer Service staff to view customer consumption data and accurately determine high water use on their computers while communicating directly with the customer in person or on the telephone. Lost and unaccounted for water is the amount of water that is produced less the amount of

water billed and not billed but accounted for. Since the installation of AMI, the lost and unaccounted for water has decreased in recent years. In 2015, lost and unaccounted for water was 2.98%. This is a dramatic reduction from a high of 9.86% in 2009.

AquaHawk Alerting, a customer web portal launched in 2013, utilizes data gathered through AMI. Once a customer is enrolled in this on-line service, they are able to view their individual water use on an hourly, daily, weekly or monthly basis. Customers can tailor personal notifications based on their individual preferences and receive alerts by e-mail, text or telephone. Over 3,000 customers have enrolled in AquaHawk Alerting since 2014.

Water Utility statistics including meter installations, the number of customer contacts, and water deliveries for 2015 may be found in **Appendix A**.

METER OPERATIONS

During 2015, the meter operations team continued with Phase III and Phase IV of the AMI project and meter replacement program in the Oro Valley Water service area. The last remaining phase of the project will be completed as shown in the table below.

Service Area	Number of Meters	Date Completed	Estimated Completion Date
Countryside	2,244	12/31/11	
Oro Valley Ph. I	2,477	06/30/13	
Oro Valley Ph. II	4,067	08/31/14	
Oro Valley Ph. III	5,374	06/30/15	
Oro Valley Ph. IV	5,087		06/30/16

The AMI and meter replacement program provides for more accurate measurements of water usage and also assures that the volume of water used and billed is accurate. Additionally, using AMI technology provides increased customer service with accurate and complete water use information. With AMI software, Water Utility staff and customers can review water use history on an hourly, daily, weekly and monthly basis. This is extremely valuable in assisting our customers troubleshoot potential leaks, explain usage from irrigation systems and overall water consumption at the home.

AMI technology provides an opportunity to increase efficiency by eliminating the need for labor intensive manual meter reading and reducing travel time. Upon completion of the AMI project, the meters team will be able to redirect their focus and capabilities to other areas of responsibility including customer work orders, meter box cleaning, angle meter stop repairs, meter testing procedures, new meter installations and assisting the Water Distribution Division.

WATER QUALITY

Water quality sampling and testing is an important priority to provide our customers with safe and reliable water. The Town's water system is in full compliance with all State and Federal regulations. The Water Utility is regulated by the Arizona Department of Environmental Quality (ADEQ) and provides all required water quality testing results to ADEQ. The Water Utility works closely with ADEQ to ensure all Federal and State standards are met. The website for ADEQ is www.azdeq.gov. The Water Utility operates two separate potable water systems. The Oro Valley Water Service Area has a Public Water System Number of AZ0410164. It also operates a potable system not located within the Town boundaries, known as the Countryside Water Service Area, which has a Public Water System Number of AZ0410175.

In 2015, the Water Utility received 2,282 analytical results for required water sampling and operational data for the potable water system and all ADEQ standards and requirements were met for water quality. Over the course of a year the Water Utility collects hundreds of water samples from 19 "point of entry" sites. These sites include groundwater wells, reservoirs and pumping stations. The Water Utility also samples from 58 sampling stations required by the ADEQ. These stations are located in neighborhoods throughout the water distribution system and are specifically selected to represent the water quality that is delivered to our customers. The Water Utility has an additional 29 sampling stations that can be used during emergencies and to meet future testing requirements. Every 3 years, water samples are taken from 50 private residences within the Oro Valley area and tested for lead and copper. This sampling will be completed in June of 2016. The Water Utility provides all water quality testing results to ADEQ and works closely with that agency to ensure all federal and state standards are met.

During 2015 the Water Utility collected 696 samples for analysis of Total Coliform bacteria, all samples were negative for bacteria. This is a direct result of a successful disinfection program through wellhead chlorination, effective system monitoring, proficient sampling methods, and routine maintenance.

Water hardness is also tested and is a measurement of the concentration of calcium and magnesium. During 2015, the hardness levels in Oro Valley ranged from 3.0 to 10.0 grains per gallon (51 ppm to 171 ppm). Our water quality ranges from soft to hard.

The Water Utility is in compliance with all Disinfectants and Disinfection By-Products Rules and also meets the Groundwater Rule requirement for disinfection and the United States Environmental Protection Agency's (USEPA or EPA) rules for lead and copper.

Due to proposed regulatory changes and requirements, in 2015 the Water Utility continued preparing to phase in seven proposed and pending USEPA regulations related to monitoring rules:

- Third Unregulated Contaminant Monitoring Rule — Sampled February and August 2015
- Revised Total Coliform Rule — April 2016
- Fourth Unregulated Contaminant Monitoring Rule — January 2016
- Revised Long-Term Lead and Copper Rule — January 2017
- Carcinogenic Volatile Organic Chemicals Rule — 2018
- Strontium — 2018

- Epichlorohydrin and Acrylamide TBD

In 2016, the Water Utility will continue to phase in sampling and monitoring as required by regulatory requirements.

The Water Utility produced the Consumer Confidence Report for 2014 for both water service areas in April of 2015. This report was mailed to customers in April of 2015 and can be found on the Town's website under the Water Utility-Water Quality. The 2015 Consumer Confidence Report will be completed in April of 2016.

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 ADEQ standards and regulations for reclaimed water were met in 2015.

BACKFLOW PREVENTION PROGRAM

Backflow prevention is an important component of water quality designed to protect the public water system. This program works to keep the water supply safe from contaminants that could be introduced into the distribution system through backflow, back siphoning or back pressure from our customers plumbing systems or internal processes.

The Backflow Prevention Program is administered in accordance with the Town of Oro Valley Ordinance No. (O) 07-21, ADEQ Administrative Code, section R18-4-B115, the International Plumbing Code and the guidelines of the University of Southern California Foundation for Cross Connection Control and Hydraulic Research.

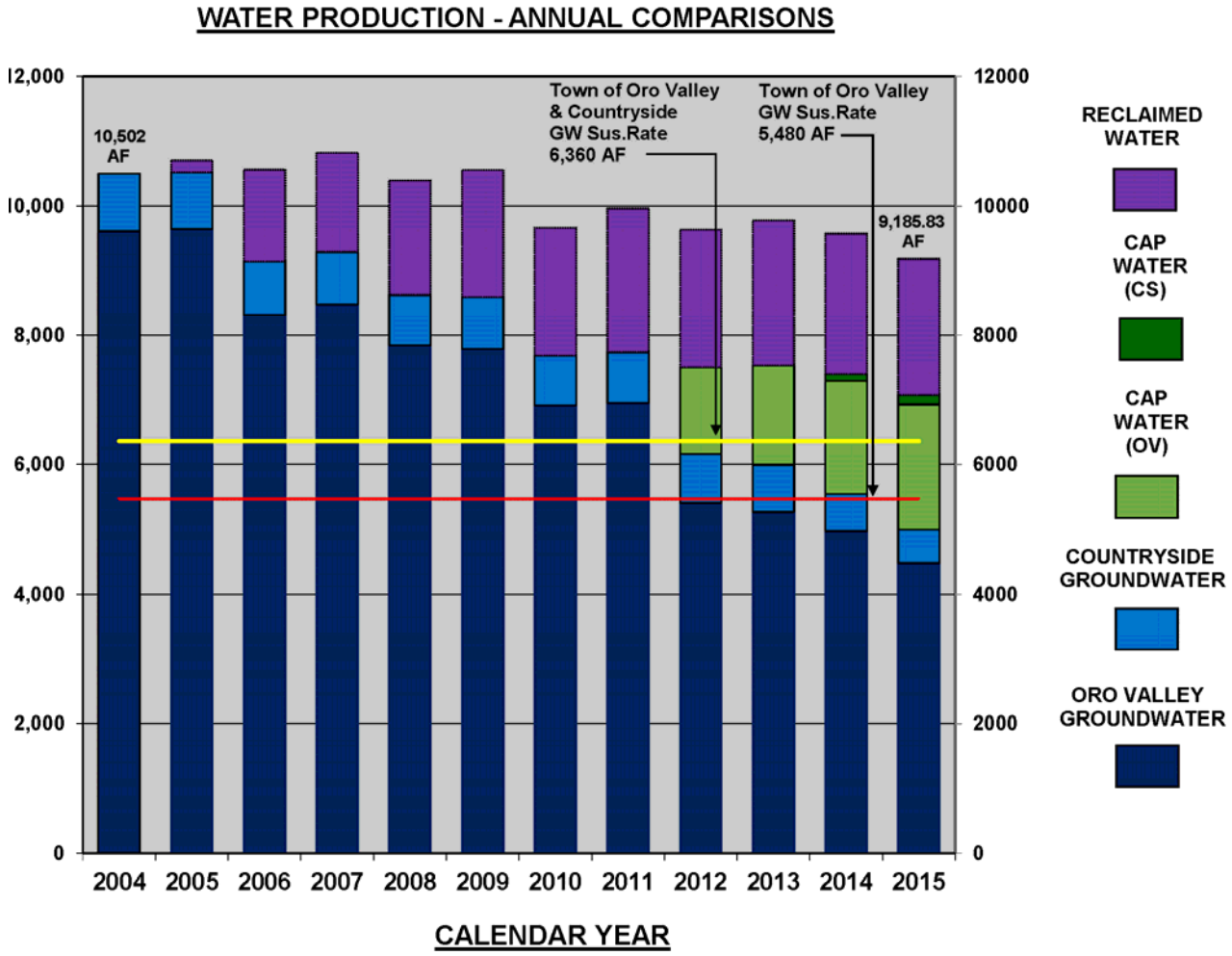
There are 1,518 backflow prevention assemblies under the program that are located in our water service areas. The following are some of the major activities and accomplishments that were performed by the Backflow Prevention Section in 2015:

- 216 backflow assemblies owned by the Town of Oro Valley were tested
- 62 repairs on in-ground and construction water backflow prevention assemblies
- 66 permits for new and replacement backflow prevention assemblies

CURRENT WATER SUPPLY

The Water Utility operates in two water service areas: the Oro Valley Water Service Area (OVWSA) and the Countryside Water Service Area (CSWSA). The total water produced and delivered to both service areas was 9,185 acre-feet in 2015. In 2015, the Water Utility pumped 5,000 acre feet of groundwater from our wells and aquifer, 2,074 acre-feet of CAP water and 2,111 acre-feet of reclaimed water. This total amount is 514 acre-feet less than the total amount produced in 2014. This reduction is due to water conservation and customer response to wetter weather conditions. In addition, system operations are more efficient due to quicker response times to repair system leaks and main breaks and less unaccounted for water due to the Advanced Metering Infrastructure Project.

The following graphs shows water production from 2004 through 2015 depicting our reduction of overall water use, reduction of groundwater usage and increased use of our renewable reclaimed and CAP water.



The above graph includes the sustainable amounts which were determined in a technical memorandum entitled *Groundwater Sustainability Evaluation of the Oro Valley Aquifer* dated March 14, 2007. The report determined the annual groundwater production flow rate for the wells is 5,480 acre feet in the Oro Valley Water Service and 880 acre feet for the wells in the in the Countryside Water Service Area.

The wells in the OVWSA produced 4,482 acre-feet and the wells in the Countryside Water Service Area (CSWSA) produced 518 acre feet. This is 547 acre-feet less in the OVWSA and 65 acre-feet less in the CSWSA as compared to the amount of groundwater pumped from our wells in 2014. This is directly attributable to reduced demand and the increased use of renewable CAP water in the potable system.

The table below provides the total water delivery capacity flowrates and water demands for both water service areas for 2015 and compares it to data from 2014. The maximum daily usage occurred on June 26, 2015 for the OVWSA and on June 27, 2015 for the CSWSA.

Water Service Area Potable Water System	Well Capacity (MGD)*		Average Daily Well Delivery (MGD)*		Average Daily CAP Delivery (MGD)*		Average Daily Demand (MGD)*		Maximum Daily Demand (MGD)*	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Oro Valley	13.44	13.27	4.26	4.00	1.57	1.72	5.83	5.72	8.25	7.70
Countryside	2.23	2.49	0.56	0.46	0.094	0.13	0.654	0.59	0.79	0.82

* MGD = Million Gallons /Day

The Water Utility has a right to pump a maximum of 13,384 acre feet per year based on its Designation of Assured Water Supply from the Arizona Department of Water Resources (ADWR). However, the 2007 study entitled *Groundwater Sustainability Evaluation of the Oro Valley Aquifer* determined that the Oro Valley aquifer has a sustainable groundwater production rate of approximately 5,480 acre feet per year for the OVWSA and 880 for the CSWSA. "Sustainable" in this 2007 study refers to the projected amount that can be pumped each year from our wells as calculated over a 30-year period through 2037. Groundwater levels will be assessed annually to determine the impact on the aquifer and well production. On average to date, groundwater levels are showing less decline than projected in the 2007 study.

In 2015, Oro Valley pumped 998 acre feet less than the sustainable groundwater production rate for the OVWSA wells and 362 acre feet less than the sustainable groundwater production rate for the CSWSA wells. In the OVWSA, the average annual well water level decline for the last 5 years is 1.16 feet and for 2015 there was an average well water level decline of 1.13 feet. For wells in the CSWSA, the average annual well water level decline for the last 5 years is 0.24 feet and for 2015 there was an average well water level rise of 5.25 feet. For all wells, water level changes in 2015 varied from a rise of 6.5 feet to a decline of 3.4 feet.

The following table lists all production wells, the amount of groundwater pumped and their water level changes as measured in January of 2016:

Well Water Level Change Summary
(Feet)

Well Name	Annual Pumped (Acre-Feet)	1 Year Change 2016	5 Year Change 2011-2016	5 Year Average 2011-2016
CS-1	283	4.0	-2.0	-0.4
CS-2	235	6.5	-0.4	-0.1
C-4	45	-2.6	-9.5	-1.9
C-5	173	-1.5	-8.0	-1.6
C-6	309	-1.5	-5.6	-1.1
C-8	224	-2.7	-7.8	-1.6
C-9	280	-2.3	-10.1	-2.0
D-1	70	-1.2	-2.6	-0.5
D-4	45	-3.4	-17.7	-3.5
D-6	269	-1.3	-13.2	-2.6
D-7	204	-2.1	-10.8	-2.2
D-8	298	-0.7	-7.6	-1.5
D-9	657	1.3	-6.8	-1.4
E-1B	308	-0.1	NA	NA
E-2	266	-3.0	0.2	0.0
E-3	93	-3.2	2.0	0.4
E-5B	196	0.3	4.8	1.0
E-6B	282	2.7	0.0	0.0
E-7B	253	2.6	-5.8	-1.2
F-1	510	-1.7	-0.7	-0.1

The Water Utility delivered 2,074 acre feet of our renewable CAP water resources in 2015 to reduce our reliance on groundwater. This delivery amount was a result of having a full year's use of the expanded CAP infrastructure that was completed in 2014.

The Water Utility has an IGA with Tucson Water enabling us to deliver our CAP water to our customers through three connections to the Tucson Water system. There are two connection points where CAP water can be delivered to the Oro Valley Water Service Area. One is located on Vista del Sol north of Naranja Road and the other is on Calle Buena Vista south of Calle Concordia. In 2015, at the Vista del Sol location 1,628 acre feet was delivered and at the Calle Buena Vista location 296 acre feet was delivered.

CAP water is also delivered to the Countryside Water Service Area at a connection located on Camino de Oeste just north of Linda Vista Blvd. In 2015, 150 acre feet was delivered at this location.

At this point there is no infrastructure currently in place to directly use the remaining amount of our CAP water. Future infrastructure to deliver additional amounts of our CAP water to our customers will be developed based upon our water demands, aquifer conditions and new growth. If growth continues as currently projected expanded delivery is expected to be completed in 2023.

The Water Utility delivers reclaimed water to supply irrigation water for five golf courses, athletic fields at one elementary school and Naranja Park. In 2015, 2,111 acre feet of reclaimed water was delivered for our reclaimed water customers. This decreased slightly from the 2,206 acre feet delivered in 2014. This reduction is due to reduced demand and water conservation by our reclaimed water customers. Reclaimed water is produced from

effluent, wastewater returned through the sewer system and then treated. Oro Valley owns all of the effluent produced by its customers.

In 2015, the Water Utility extended the terms of the Reclaimed Water Intergovernmental Agreement (IGA) with Tucson Water for an additional five years through December 31 of 2020 regarding the non-interruption of reclaimed water deliveries. This extension was accomplished through Amendment 3 of Addendum 1 of the Reclaimed Intergovernmental Agreement. Amendment 3 also clarified the payments to Tucson Water for the purchase of effluent by Oro Valley in the event of a shortfall of the amount of effluent our customers produce. The extension also allows time to further evaluate if interruptible reclaimed water service from Tucson Water is feasible.

In the long term, there is the possibility of expanding the Water Utility's reclaimed water system. However, reclaimed system expansion is not expected to occur in the next seven or more years. The development of additional reclaimed water infrastructure will be based upon need, benefit, availability of effluent, technical analysis and economic feasibility.

Gallons per Capita per Day

The Water Utility has calculated gallons per capita per day (GPCD) for residential use, all potable uses and reclaimed water use. The GPCD for residential use is information that our customers can use to compare to their specific water usage and to conserve water. All potable uses include residential, commercial and irrigation. Total potable and reclaimed uses includes all potable and reclaimed water produced and system losses. The following table compares this for 2014 and 2015.

Gallons per Capita per Day (GPCD)

Year	Residential Uses	Potable All Uses	Total Potable & Reclaimed All Uses
2015	107.70	135.76	190.92
2014	111.67	143.98	208.20

WATER RESOURCE PLANNING AND MANAGEMENT

State Requirements

The ADWR requires replacement of groundwater pumped from wells owned and operated by the Water Utility. The groundwater pumped can be replaced several ways. One of the ways is through the Central Arizona Groundwater Replenishment District (CAGRD). Using CAGRD to replace groundwater pumping is expensive. In 2014 and 2015, the Water Utility's use of renewable water supplies and credits eliminated any obligations to CAGRD to replace or replenish groundwater on our behalf. This has saved the Water Utility significant expense. In previous years the Water Utility had to use CAGRD to help us meet the state-mandated replenishment requirement to replace the amount of groundwater pumped from our wells.

Under our Designation of Assured Water Supply (DAWS) from ADWR, we are required to comply with the Third Management Plan in the Tucson Active Management Area. In 2015, we have been in compliance with all the requirements under our DAWS and fully expect to meet all the requirements in 2016. The successor to Third Management Plan is the Fourth Management Plan, which is being finalized by ADWR and is scheduled to become effective in mid to late 2016, subject to the scheduling of a public hearing. There are no proposed changes to the Fourth Management Plan that would significantly impact the Water Utility. The ADWR requires the Water Utility to submit data each year in the ADWR Report, such as service area boundaries, total water use, population, gallons per capita per day and system water loss. This information is used for the Management Plan for the Tucson Active Management Area.

Central Arizona Project Water

In 2015, the Water Utility increased the total volume of CAP water it purchased from 9,000 to 10,305 acre feet, its entire annual CAP water allocation. The Water Utility uses CAP water in three ways: to recharge and recover for delivery to the water system, to annually recharge and recover water pumped from our wells and to store water for future use. The Water Utility accomplishes this by delivering and storing our CAP water to recharge facilities in the Tucson Active Management Area. For example, when CAP water is recharged and recovered for delivery to our water system, it is first put into the Central Avra Valley storage facility, which is owned and operated by the City of Tucson. The stored Oro Valley CAP water is then withdrawn, or recovered, and delivered through the Tucson Water system to various connection points on the Oro Valley system for delivery to our customers.

In 2016 the Water Utility will continue to evaluate projects to deliver additional CAP water. These include increased wheeling through Tucson Water and also partnering with Metro Water and Marana Utilities. Future infrastructure to deliver our remaining CAP water will be developed based upon our water demands, aquifer conditions and new growth.

Long-Term Storage Credits

In 2015, the Water Utility purchased 10,305 acre feet of CAP water, 1,305 acre feet more than was purchased in 2014. The Utility will increase its long-term storage credits by purchasing our entire allotment of 10,305 acre feet of CAP water over the next several years. The portion of CAP water not used for direct delivery to our customers or used to meet our replenishment requirement will be saved for future water use. By doing this, it is anticipated

that an additional 10,000 acre feet could be stored in our long-term storage credit accounts over the next four to five years. At the end of 2015, the Water Utility calculated that it had 13,672 acre feet in long-term storage credits. The final amount will be reviewed and confirmed by the Arizona Department of Water Resources.

The table below presents a preliminary accounting summary and use of our CAP water and our long-term storage credits.

Water Storage Summary
Calendar year 2015
(Acre-Ft.)

Groundwater Storage Facility	Initial Storage Balance 1/1/2015	CAP Delivery to Storage Facility	CAP Recovery from Storage Facility	Storage Loss Evaporation + Loss to Aquifer	Ending Storage Balance 12/31/15
Kai Farms	7,690.80	4,000.00	1,516.81	124.16	10,049.83
Lower Santa Cruz	168.58	3,605.00	3483.13	6.09	284.36
Pima Mine Road	2,357.59	500.00	0.00	25.00	2,832.59
Central Avra Valley	386.17	2,200.00	2074.69	6.27	505.21
Total:	**10,603.14**	**10,305.00**	**7,074.63**	**161.52**	**13,671.99**

Groundwater Allowance Account

In addition to our long-term storage credits, the Water Utility has a Groundwater Allowance Account. Our Groundwater Allowance Account states how much pumped groundwater can, if desired, be exempted from the state's requirement to be replenished in the Tucson Active Management Area. In general, it may be used for any groundwater that is pumped from a well that has a five-year average annual decline greater than 4 feet or from a well that is not permitted as a recovery well. In 2015, there was no use of the groundwater in our Groundwater Allowance Account. This is because all of the Water Utility's wells are classified and permitted as recovery wells and storage credits can be used to meet the replacement requirements instead of using our Groundwater Allowance Account. In 2015, the Water Utility purchased 2,130 acre feet of groundwater extinguishment credits to increase the balance in our Groundwater Allowance Account. The total balance in our Groundwater Allowance Account at the end of 2015 was 16,374 acre feet.

The Water Utility will continue to look for opportunities to purchase additional groundwater extinguishment credits to increase the balance in our Groundwater Allowance Account for future use.

Colorado River Water Supply

The Colorado River basin has experienced extended drought for nearly 15 years due to decreased precipitation and snowpack. This has decreased flow in the river creating significant declines in the water levels in Lake Mead and Lake Powell and dropping to historically low reservoir levels. Water demands have exceeded available inflows for supply and drive reservoir levels lower. These reservoirs supply water to the Central Arizona Project (CAP) and other water projects in the lower basin states of Arizona, California and Nevada. In addition these reservoirs also provide required water deliveries to Mexico.

Reservoir levels determine the supply available in accordance with shortage guidelines were approved in 2007 by the Secretary of the Interior and accepted by all seven states within the Colorado River basin. Those guidelines specify three different water levels in Lake Mead associated with a Tier 1, Tier 2, and Tier 3 shortages. In addition, the guidelines specify the shortage sharing and associated reductions of deliveries to each state for each of the tiers.

A Tier 1 shortage will not reduce the quantity of CAP water delivered to municipal water providers, such as Oro Valley, within the Central Arizona Project. Water deliveries from the CAP canal to agricultural users will be curtailed. In addition, a shortage would impact supplies for those entities that rely on excess water available to store water for the future such as the Central Arizona Groundwater Replenishment District and the Arizona Water Banking Authority.

In accordance with the 2007 guidelines, a Tier 1 shortage will be declared when Lake Mead water levels are predicted to be at an elevation of 1,075 feet or less on January 1 of a given year. If the August model prediction projects a shortage for January 1 of the following year, a declaration of shortage would be declared initiating the implementation of the shortage sharing guidelines for that year. As of the end of March 2016, levels in Lake Mead were at 1,081 feet. Based upon recent March, 2016 projections, a Tier 1 shortage impacting CAP agricultural water users and excess CAP water users is not expected to occur until January 1, 2018.

The 2007 shortage sharing guidelines outline further reductions in delivery of Colorado River water to the lower basin states if and when higher-tier shortages are declared. As such, if the drought persists and no action is taken, it is expected that a portion of CAP deliveries to municipal water providers could be reduced in the 2026 to 2030 time frame. Any CAP water deliveries would be replaced with CAP water previously stored underground.

Over the last decade, the Arizona Water Banking Authority (AWBA) has taken steps for the state to guard against the impacts of drought and shortage by storing water underground. A significant amount of water has been stored underground and this water will be made available to municipal water providers to mitigate any curtailments of CAP water deliveries to municipal water users. In addition to the AWBA storing water, the Central Arizona Groundwater Replenishment District has stored water for the future to replenish groundwater.

Oro Valley Water Utility also continues to store its CAP water and build up its long-term storage credits. This water will also be available to mitigate any curtailments of CAP water deliveries in the future.

The Arizona Department of Water Resources and the Central Arizona Project are currently in discussions with the Colorado River Basin states to investigate opportunities to keep water in Lake Mead to prevent a shortage from occurring or reduce the amount of a potential shortage.

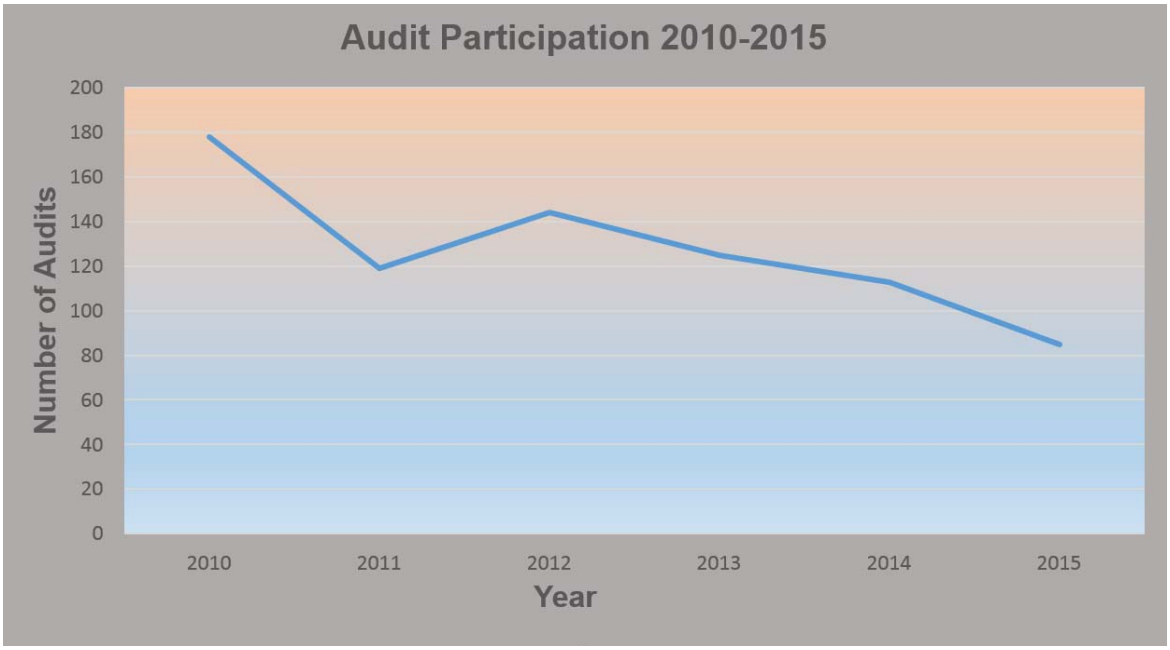
The above actions combined with a diverse water portfolio can reduce the impacts of drought and shortages. In addition, reducing demands through conservation and better water management can help to preserve water supplies for the future.

WATER CONSERVATION PROGRAM

The Water Conservation Program is an important element in the overall water resource management efforts of the Water Utility. The Water Utility's Conservation program is focused on educating and informing customers. The following are resources that the Water Utility continues to provide at no charge to customers:

- AquaHawk Alerting - allows customers to monitor their water use and receive alerts for high or unusual water use. Over 3,000 customers have registered for AquaHawk Alerting since 2014.
- The Water Utility conducted training sessions to increase AquaHawk Alerting enrollment and plans to expand outreach efforts to increase enrollment in 2016.
- Conservation Kids, our youth water conservation education program - a one-session early elementary educational presentation with take-home booklet. In the 2014-2015 school year, 424 students in 1st, 2nd and 3rd grades were reached by this program.
- Community Outreach - Water Utility staff go out into the community for speaking engagements, water conservation program presentations at homeowner associations and participation in other events. In 2015, staff attended 4 of these outreach efforts.
- Conservation materials - informational pamphlets, booklets, a CD, and newsletter are distributed in the Water Utility's office and in the Oro Valley Library.
- Conservation products - the Water Utility provides irrigation rain sensors at a reduced cost and low-flow shower heads and sink aerators at no cost to customers. In 2015, the Water Utility distributed approximately 100 products.
- Water Audit - a visit from our Water Conservation Specialist to assess indoor and outdoor water use for ways to increase efficiencies and conserve water. An analysis performed by staff in 2015 indicates a 22% decrease in water use for those customer locations where water audits were conducted in 2014. In 2015, a total of 85 audits were performed. The graph below shows the audit participation rate over a 5 year period (**fig. 1**).

Figure 1. History of Audits



WATER UTILITY OPERATIONS - PRODUCTION AND DISTRIBUTION

All Production Division and Distribution Division personnel are operators licensed and certified by the ADEQ. The Oro Valley Water system is classified by ADEQ as Grade 4 for the Town of Oro Valley water distribution system (AZ0410164) and Grade 2 for the Countryside water distribution system (AZ0410175). For more information please visit the ADEQ website at www.azdeq.gov.

Production and Distribution personnel work very closely to address any water system problems. The Production and Distribution Divisions also provide on-call staffing to respond to water system problems 24 hours per day, 7 days per week. This on-call staffing utilizes a tiered level after-hours response protocol that is in accordance with the developed Emergency Response Plan.

Production Division

Water Utility personnel in the Production Division are responsible for the operation and maintenance of the wells, booster pumps and reservoirs on two potable water distribution systems and the booster pumps, metering stations and reservoir on the reclaimed water delivery system. There are a total of 47 active sites that are maintained by the Production Facilities staff.

In 2015, the groundwater production capacity within the OVWSA was 13.27 million gallons per day (MGD) (9,215.28 GPM) with a storage capacity of 10.98 million gallons. The groundwater production capacity within the CSWSA was 2.49 MGD (1,729.17 GPM) with a storage capacity of 0.90 million gallons. The CAP delivery capacity into the OVWSA system in 2015 averaged 1.72 MGD (1,194.44 GPM). The CAP delivery capacity into the CSWSA system averaged 0.13 MGD (90.28 GPM).

The following are some of the major activities and accomplishments of the Production Facilities Division in 2015:

- Sustained sanitary system operations on systems AZ0410164 and AZ0410175.
- Maintained operational balance for CAP water delivery to the 10-164 and 10-175 systems.
- Maintained 23 disinfection injection pumps and disinfection residuals at injection points on systems AZ0410164, AZ0410175, and the reclaimed water delivery system.
- Maintained sodium hypochlorite volume and concentration at disinfection injection points.
- Performed mechanical and routine maintenance at 20 wells, 26 booster stations and 18 storage tanks.
- Responded to after-hours calls totaling 547 work hours.
- Completed 4,100 work hours related to assigned work orders including electrical.
- Completed electrical preventative maintenance cataloging of all production sites.
- Assisted with required Arc Flash update study for facility electrical equipment.
- Developed and implemented water facility electrical safety plan.
- Assisted with seven reservoir exterior and interior inspections/cleaning.
- Performed the annual groundwater level survey and prepared the report.

- Competently operated the potable and reclaimed systems utilizing the SCADA system.
- Performed Industrial Control System maintenance on 48 Remote Terminal Units, two Master Controllers, two Human Machine Interfaces, and one Network Server.
- Performed RSLogix program modifications on Remote Terminal Units and Master Controllers as needed. Approximately 20+ modifications to programming.
- Performed modification of FactoryTalk View graphics interface on two HMI's as needed.
- Performed mechanical and general maintenance at 5 metering stations, two booster stations, and one reservoir on the reclaimed water delivery system.
- Continued meter replacement program with the installation of 4 ultrasonic flow meters.
- Assisted Engineering with Energy Efficiency Program.
- Assisted with the well monitoring and quarterly reports.
- Hire and train a new system operator (Operator III).
- Obtained staff Crane and Rigging certification.
- Obtained staff Fall Protection certification.
- Install Merlin hypochlorite dilution system for the reclaimed water delivery system.
- Installed well E3 security fencing.
- Assisted with the High Mesa facility painting (One 1MG reservoir, one 0.3MG reservoir, F and G zone boosters including HP tanks).
- Installed 4 air temperature transmitters.
- Change-out of 12 well and booster air relief valves.

Distribution Division

As of December 2015, Water Utility personnel in the Distribution Division are responsible for the operation and maintenance of 353.93 miles of potable water mains, 13.84 miles of reclaimed water mains for a combined total of 367.77 miles of water mains. There are 2,181 fire hydrants and 7,934 valves on the water distribution system. The staff conducts maintenance programs and repairs that keep the distribution system functioning properly and efficiently minimizing problems that are inherent to water distribution systems.

Documentation of maintenance and replacement of hydrants; pressure reducing valves, and air release valves are collected in a database. A valve exercising program that helps monitor equipment and develop maintenance cycles has been established. The program provides information and equipment history data that facilitate a proactive replacement program.

The Distribution Division also has significant direct customer contact and responds to customers regarding water quality and pressure or flow related problems in the field. The Distribution staff continues to provide a high level of professional performance and courteous service to our customers. The Division works closely with Customer Service and responds to complex customer work orders such as high/low pressure complaints, water quality, service line breaks, hydrant repairs, system pressure regulating valves, system air relief valves and system flushing.

Repair of water line leaks are always treated as an emergency and are repaired quickly to minimize impacts to our customers. The Distribution staff has the responsibility to repair main line and service line breaks. Distribution staff can repair most breaks, however if the breaks are too deep or involve significant traffic control, a qualified contractor is hired. The

The Division is responsible for maintaining 25 pressure reducing valves, 796 air relief valves and 893 drain valve assemblies. Distribution staff are also responsible for bluestaking all underground water mains for construction projects.

The following are some of the major activities and accomplishments that were performed by the Distribution Facilities Division in 2015:

- Maintained, replaced and/or repaired 56 fire hydrants.
- Flow tested 52 fire hydrants to assure fire protection.
- Performed 114 tests and/or repairs for the maintenance and operation of the 25 pressure reducing valves.
- Maintained, replaced and/or repaired 42 air relief valves.
- Maintained, replaced and/or repaired 22 drain valve assemblies.
- Performed 9,102 bluestakes for underground pipeline and facilities locations.
- Responded to and repaired 6 water pipeline breaks.
- Responded to 98 customer inquiries in the field.
- Responded to and repaired 6 service line breaks.
- Responded to 224 after hour call outs.
- Installed 47 new hydrant defenders.
- Maintained 405 water valves.

Special Projects constructed by the Distribution Division

Naranja Park Project

- Installed 120 feet of 4-inch fire line.
- 1,500 feet of conduit for I.T. Department.
- Installed 1 inch copper service line to modular.

Valve Locating Project

Steam Pump Ranch

- Installed 15 feet of 2 inch copper for irrigation water service.

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, water operators also have a public safety responsibility with relevance to the water systems they are charged with operating. Any facilities security situations also directly involve the Oro Valley Police Department as a first response action.

In 2015, Water Utility personnel, with the assistance of a security consultant, reviewed, refined and updated the security program, Emergency Response Plan (ERP), and the Business Continuity Plan (BCP). A series of training classes and exercises were made available and completed by the Water Utility Staff. This training is done on an annual basis as per the guidelines from the Department of Homeland Security, Federal Emergency Management Agency and the Environmental Protection Agency. The Water Utility will continue to implement the elements defined in the vulnerability assessment, the ERP and the BCP as well as those that may be identified through the course of business.

The hydrant lock program continues to be implemented through the new development process to protect hydrants from illegal entry and use. In 2015, 47 new hydrant defenders and locks were installed. Security features, which include perimeter fencing, security walls, warning signage, motion sensors, and cameras at all active production facilities, were inspected to maintain integrity.

The Water Utility is kept abreast of local, regional and national security issues by the Water Information Sharing and Analysis Center and is also a member of the Arizona Water/Wastewater Agency Response Network which mutually cooperates with other water and wastewater providers in an emergency.

WATER RESOURCE AND PLANNING DIVISION

The Water Resources and Planning Division is responsible for water resource planning and planning and managing the design, construction and inspection of all new water infrastructures for the Town of Oro Valley.

Water Resource and Planning is responsible for managing and maintaining a Geographic Information System (GIS) database on all existing water system infrastructure in coordination with the Information Technology Department. Maps produced by GIS staff facilitate operations, planning and engineering.

In 2015, the New Development Section within Water Resources and Planning reviewed and approved 16 water improvement plans submitted by developers for construction. In addition, 12 plans, some of which were approved in a previous year, were constructed, inspected, approved as-built and placed into service. The completion of these new development projects together with capital projects added approximately 4 additional miles of pipeline to the existing potable water distribution system.

In 2015, our inspectors also inspected and approved 5 Water Utility capital projects constructed by a contractor and 2 projects constructed by Water Utility personnel.

CAPITAL PROJECTS

The Water Resources 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. These capital projects are described below.

Design Projects

- Engineering design for the relocation of 3,000 feet of new 12-inch potable main on Lambert Lane west of La Cañada was completed in March of 2016. This is part of an Oro Valley roadway improvement project that widens the road to four lanes. Construction is expected to start July 2016.
- Engineering design for the relocation of approximately 8,000 feet of existing 24-inch reclaimed water main for the Tangerine Road project was completed in February of 2016. This is part of an RTA road improvement project from I-10 to the Town of Oro Valley. Tangerine Road will be widened to four lanes. Multiple box culverts and drainage structures will be installed that are in conflict with the existing reclaimed main. Construction started in March of 2016 with completion in FY 2016-2017.
- Design of a new pressure sustaining valve at the Glover Road Reservoir and approximately 100 feet of offsite E-zone water main began in 2015. This will enhance the ability of the system to distribute blended CAP water to a broader area of the system. Construction will be scheduled for FY 2016-2017.
- A hydro-pneumatic (HP) tank study at our well sites completed in October of 2015 identified the need to start an HP tank replacement program. HP tanks are an important component of the water system to maintain pressure, minimize system cycling and protect system components from surge. Failure of an HP tank can be a dangerous event and can create significant water outages. A new 5,000 gallon HP tank will be installed at Well D7 in 2016.

Hydro-pneumatic Tank

- Engineering design for the relocation of 2,000 feet of 12-inch existing potable mains for the La Cholla Blvd. road improvement project will begin in May of 2016.

Construction Projects

Valve Replacement Program

In June of 2015, replacement of air release valves (ARV) and drain valve assemblies in the Copper Creek subdivision was completed. The system-wide valve replacement program then continued by beginning work on the following: replacement of two existing valves on Valle Del Oro Drive, five services on Calle Loma Linda and two 8-inch valves on Scioto Ave. This work is expected to be complete by June of 2016.

Steel Tank Safety Railings

In 2015, safety railings were installed on the top of 2 steel storage tanks to provide for fall protection. An additional 12 steel tanks will have safety railings installed in 2016.

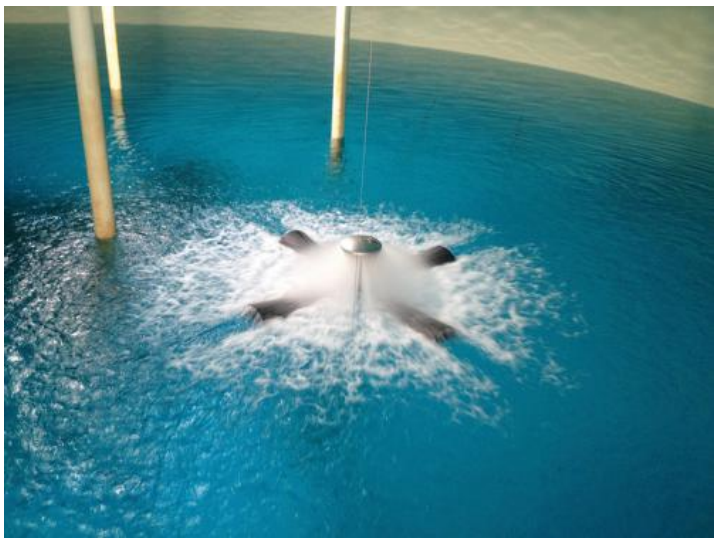
Safety Railing on Steel Tank

Countryside 12-inch Main

A 12-inch water main was installed in the Countryside Water Service Area to reduce pressure head loss and improve system efficiency. This project was completed in June of 2015.

Reservoir Management System

In 2015, seven mixing units to reduce water age, stagnation, stratification and short circuiting were purchased. Thorough mixing not only improves water quality, it also allows for representative sampling of the tank water, and additional disinfection if needed. Mixing will also maintain a chlorine residual and will assist with blending of CAP water. These reservoir management system units will be installed by Water Utility staff in 2016.



Mixer inside Storage Tank

Future Projects:

Capital improvement projects planned to be continued or initiated in FY 2016-2017 include the following:

- Well E2 Upgrades
- Hydro-pneumatic Tank Replacement – Wells
- Add Reclaim Booster Pump at Tucson Water Thornydale site
- Valve Replacement Program
- 24-inch Reclaimed Main on Tangerine for roadway project
- System Connection Upgrades - Glover Reservoir Improvements
- W. Lambert Lane 12-inch Main Relocation for roadway project
- Relocate 3 Pressure Reducing Valves in the Oro Valley Country Club Area
- Glover Reservoir Steel Tank Exterior Coating and Interior Lining
- Big Wash Steel Tank Exterior Coating (2 Tanks)
- Reservoir Management Program (Water Quality Control)
- Install an E to C Pressure Sustaining Valve Naranja Reservoir -CAP Blending
- 12-inch potable main relocation for the La Cholla Blvd. roadway project
- Replace Well Pumps
- Tangerine Potable Modifications (DIS) RTA
- Production Facility Building Retrofit
- Hilton 9-Hole Golf Course Lake Feed Metering

The capital projects for existing system improvements FY 2016-17 are planned to be cash funded. It is proposed that projects in future years will be cash funded and/or debt financed through loan or bond proceeds.

Please see **Appendix B** for the proposed 15-Year Capital Project Program for FY 2017 through FY 2031.

FINANCIAL HIGHLIGHTS

The Water Utility is financially sound and continues to manage its revenues, control expenditures and reduce debt. In 2015, the Water Utility's bond ratings were reviewed by two separate bond rating agencies. Standard and Poor's affirmed our AA bond rating and Fitch Ratings affirmed our AA- rating, both with a stable outlook. 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 maintaining an adequate cash reserve balance. The Water Utility refunded the 2005 bond series which resulted in a savings of $111,524 in interest. The Water Utility and Finance Department will continue to review outstanding bonds to look for opportunities to reduce debt.

The Commission made a recommendation to change the cash reserve policy that set cash reserves at 20% of the annual budget amounts for personnel, operations and maintenance and debt service for the Operating Fund. This policy change was adopted by Mayor and Council on June 17, 2015. The Commission also made a recommendation to change the allowable uses for GPF revenue to include CAP wheeling costs. This recommendation was also adopted on June 17, 2015.

Revenues and Expenditures

The Water 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 Water Utility has three funds:

- **The Operating Fund** provides funding for the Water Utility administration and operations as well as existing system improvements. The sources of revenue for this fund are water sales and service related charges. The Groundwater Preservation Fees (GPF) are accounted for within this fund; however, the GPF funds are dedicated to pay for debt or capital costs related to renewable water resources.

- **The Potable Water System Development Impact Fee Fund** (PWSDIF) provides funding for expansion related projects for new growth. The source of revenue for this fund is potable water development impact fees. These fees are paid at the time a meter is purchased. The funds collected ensure that the system expansion is paid for by new development.

- **The Alternative Water Resources Development Impact Fee Fund** (AWRDIF) provides funding for the development of renewable sources of water supply and any infrastructure required for delivery of those resources. The source of revenue for this fund is alternative water resources development impact fees. These fees are paid by new development for renewable water supply and infrastructure attributed to new growth.

The following table contains the actual revenue billed for FY 2014-15 for all funds within the Water Utility:

Revenue Source	Amount Billed (FY 14-15)
Potable Water Sales:	
Residential	$ 7,880,702
Commercial	$ 898,412
Irrigation	$ 1,148,497
Turf	$ 122,453
Construction	$ 284,857
Reclaimed Water Sales:	
Turf	$ 1,609,273
Construction	$ 815
Irrigation	$ 187,622
Misc. Service Fees & Charges	$ 671,527
Groundwater Preservation Fees	$ 2,371,633
Total Enterprise Fund	**$15,175,791**
Alternative Water Resources Development Impact Fees	$ 1,172,170
Development Impact Fees Potable Water System	$ 591,045
Interest Income	$ 124,595
Total All Funds for FY 2014-15	**$17,063,601**

The budgeted expenditures (excluding depreciation and amortization) for the Operating Fund are compared to the actual expenditures for FY 2014-15 in the following table:

Expenditures	Budget FY 2014-15	Actual Spent FY 2014-15	Difference Under Budget	Percentage Under Budget
Personnel	$ 2,874,528	$ 2,832,198	($ 42,330)	1 %
O&M	$ 6,910,443	$ 6,010,149	($ 900,294)	13 %
Capital	$ 4,027,020	$ 3,452,513	($ 574,507)	14 %
Totals	**$13,811,991**	**$12,294,860**	**($1,517,131)**	**11 %**

The Water Utility's O&M expenditures were under budget due to several reasons. Some of the unspent funds were related to a reduction in water use. The unspent wheeling costs for CAP water and reclaimed water were $148,000 and power costs were $180,000. Capital expenditures were also less than budgeted due to some changes in project schedules and timing.

Outstanding Debt

The following table is a summary of the outstanding debt and the annual debt service payments (principal and interest) for all funds within the Water Utility:

Fund	Bond Series	Outstanding Debt At 12/31/15	Debt Service Payments FY 2015-16	Interest Rate %	Maturity
Operating	2007	$14,180,360	$ 1,258,530	4.5	2026
Operating (WIFA)	2008	$ 3,035,566	$ 316,402 *	3.5	2027
Operating (WIFA)	2009	$ 1,682,838	$ 149,322	3.2	2029
Operating	2012	$ 3,258,808	$ 589,494	3.6	2028
Operating	2012	$ 8,052,849	$ 1,074,511 *	3.5	2028
Operating	2013	$ 3,960,000	$ 1,022,420	1.5	2019
Operating (WIFA)	2014	$ 4,025,935	$ 405,961	2.7	2029
Operating	2015	$ 1,245,750	$ 156,127	1.9	2025
PWSDIF	2012	$ 2,253,343	$ 331,478	3.5	2028
Totals		**$41,695,449**	**$ 5,304,245**		

The debt service payments with the asterisk (*) notation are for the reclaimed water delivery system and are paid with revenues from Groundwater Preservation Fees. The 2015 bond series is a result of refinancing the 2005 bond issue.

Water Rates and Development Fees

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 Water Utility bases its financial analysis on the American Water Works Association Cash Needs Approach.

The financial analysis for 2015 resulted in a recommendation to increase the commodity rates. These changes resulted in a slight increase to monthly water bills for the majority of the Water Utility's customers. The increase was larger for the higher water use residential customers. This is consistent with conservation pricing through a tiered rate structure. Construction meter security deposits were the only other fees that were increased. The Mayor and Council approved the new rates on January 6, 2016.

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

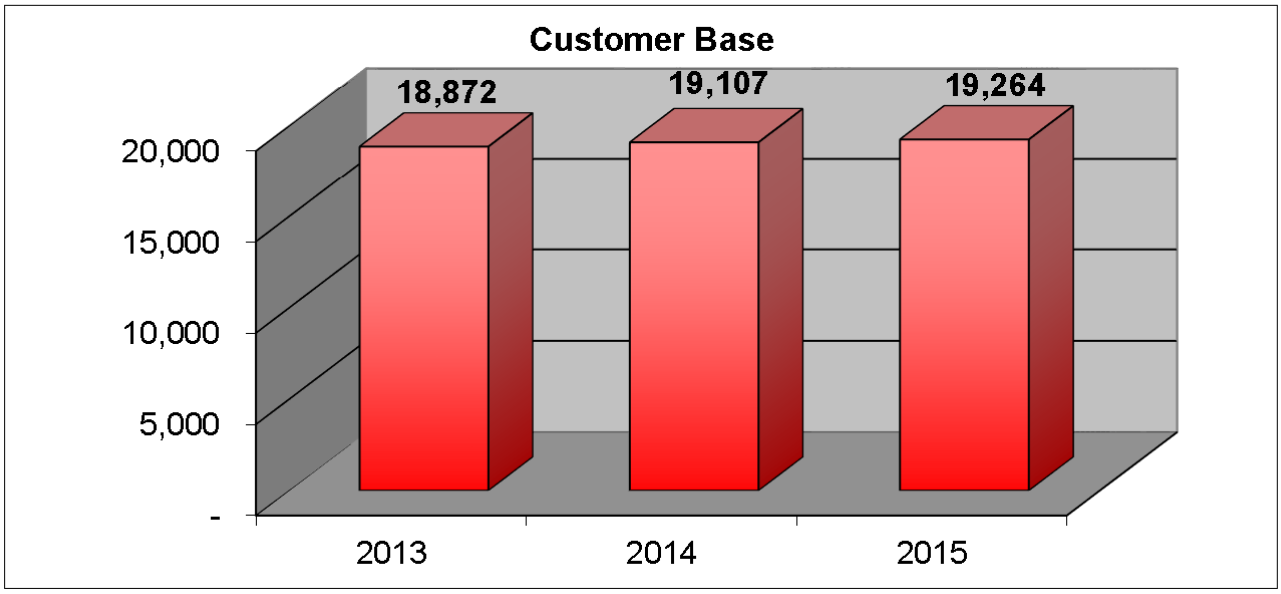
TOWN OF ORO VALLEY
WATER UTILITY COMMISSION

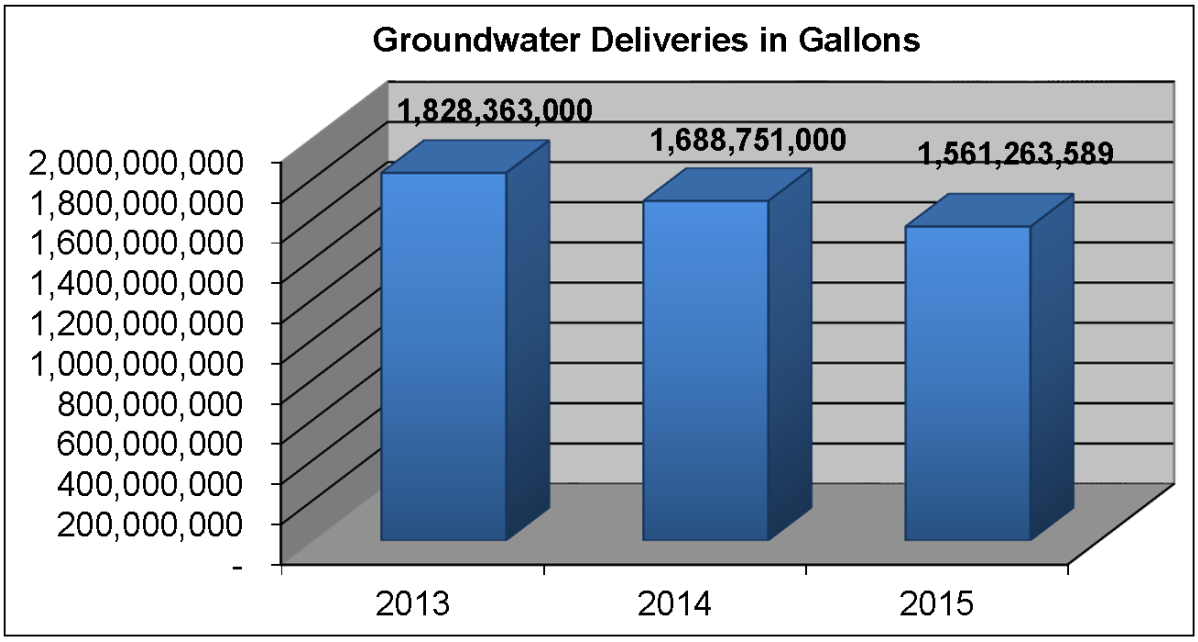
2016 ANNUAL REPORT

APPENDIX A

UTILITY STATISTICS

YEAR	2013	2014	2015
Customer Base	18,872	19,107	19,264
Potable Water Deliveries in Gallons			
Groundwater	1,828,363,000	1,688,751,000	1,561,263,589
CAP water	498,581,000	595,535,000	648,997,437
Total Potable Water Deliveries	2,326,944,000	2,284,286,000	2,210,261,026
Reclaimed Water Deliveries in Gallons	714,880,000	718,660,000	655,655,000
Bluestakes	3,589	3,938	9,102
Customer Contacts			
Customer Service	34,068	34,387	35,271
Field Operations	8,635	6,725	13,520
Water Conservation-Audits	125	113	85
Water Quality Samples	4,021	1,360	2,282
Billing Collection Rate	99.99%	98.82%	99.99%




Groundwater Deliveries in Gallons
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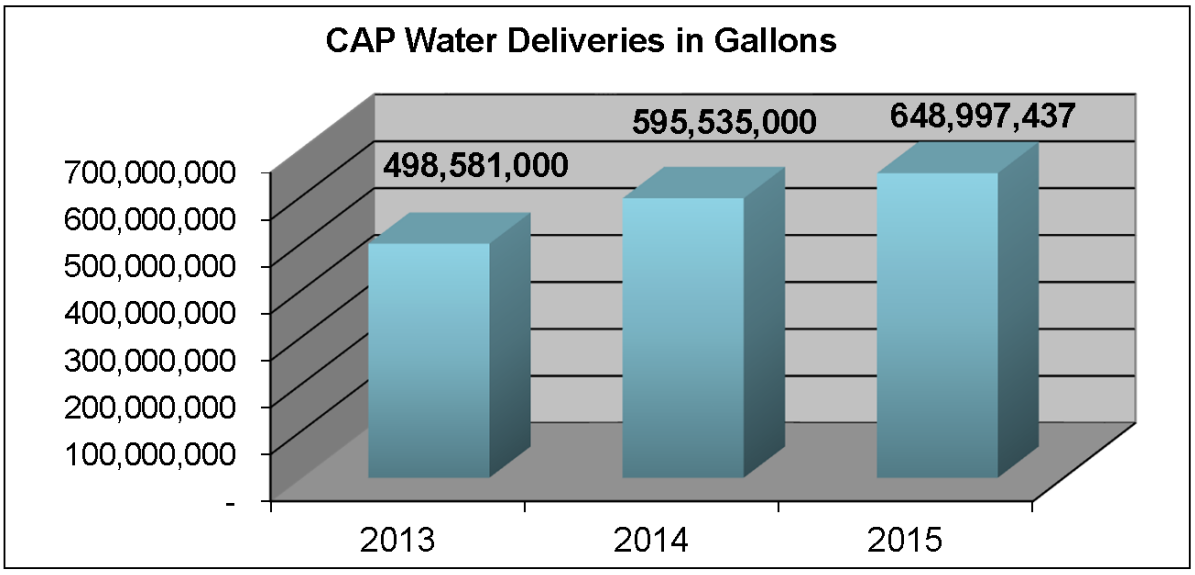
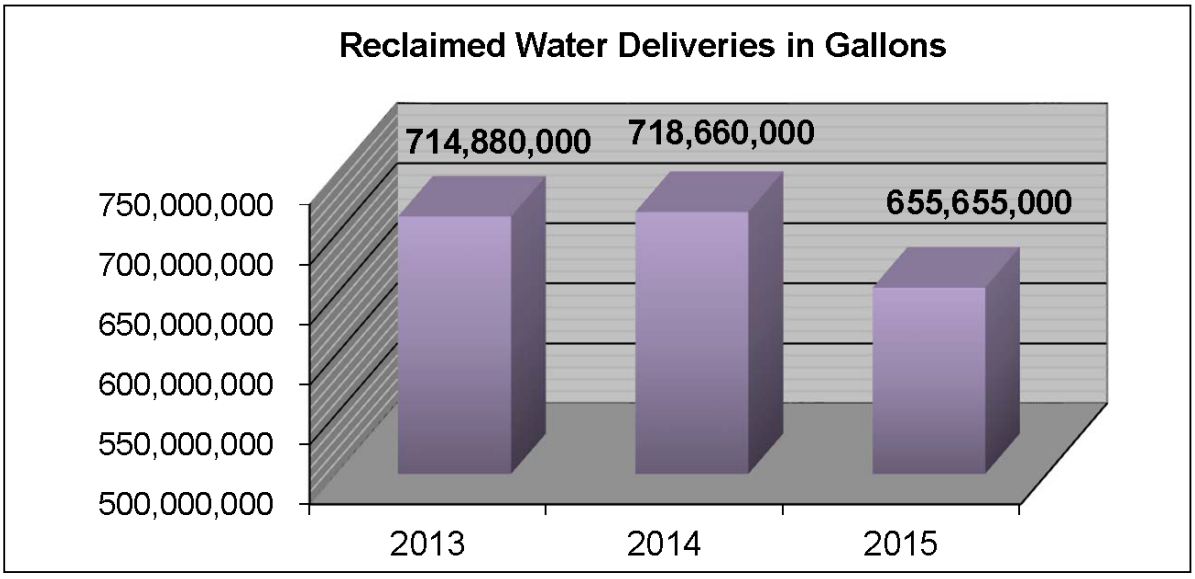
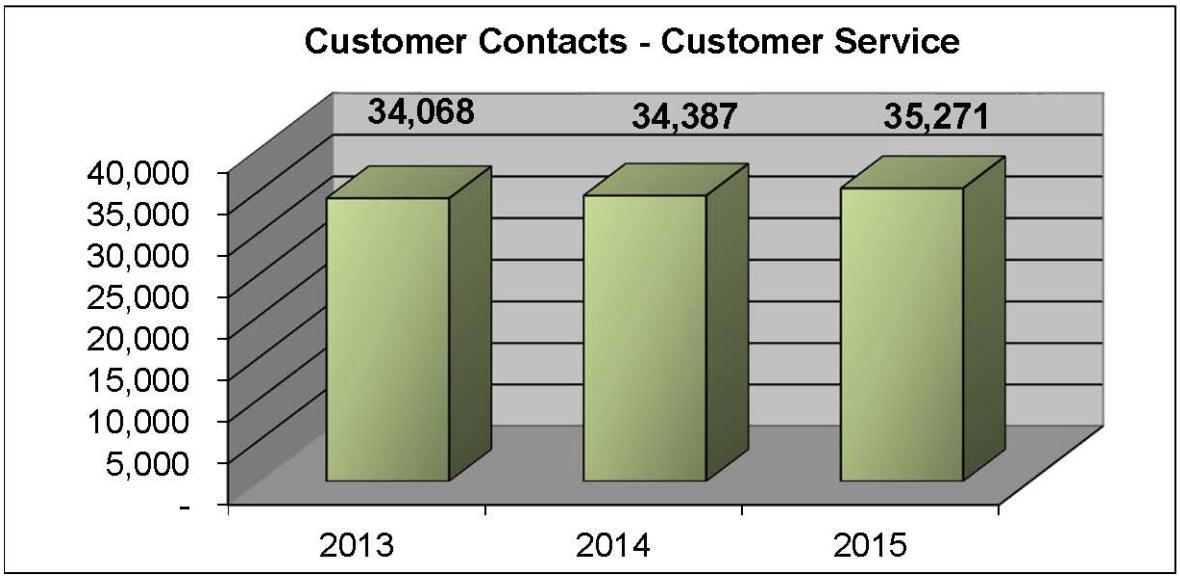
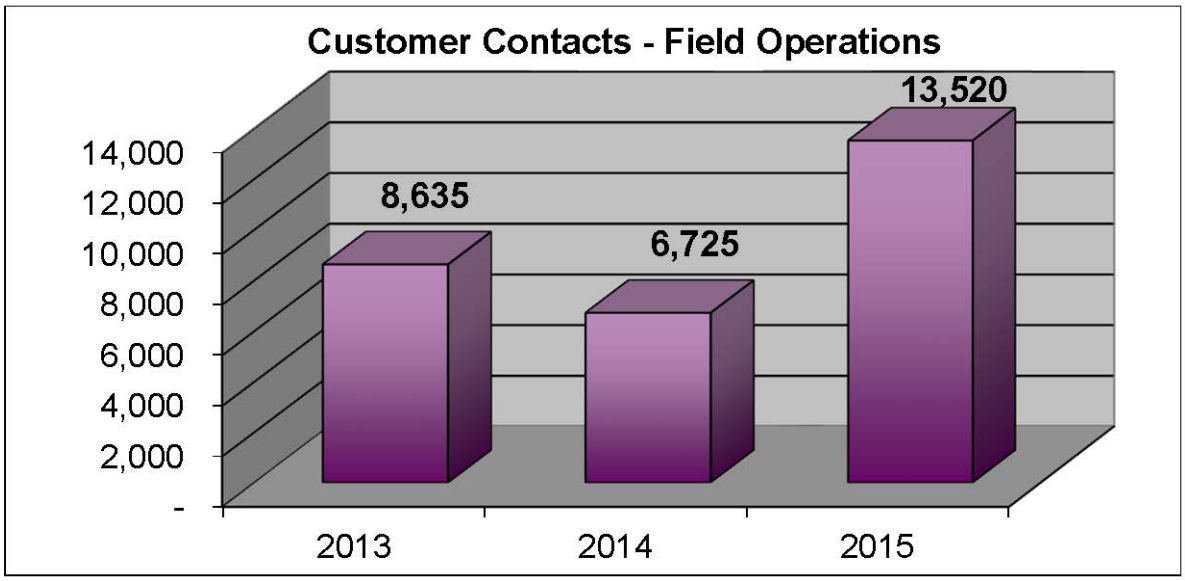
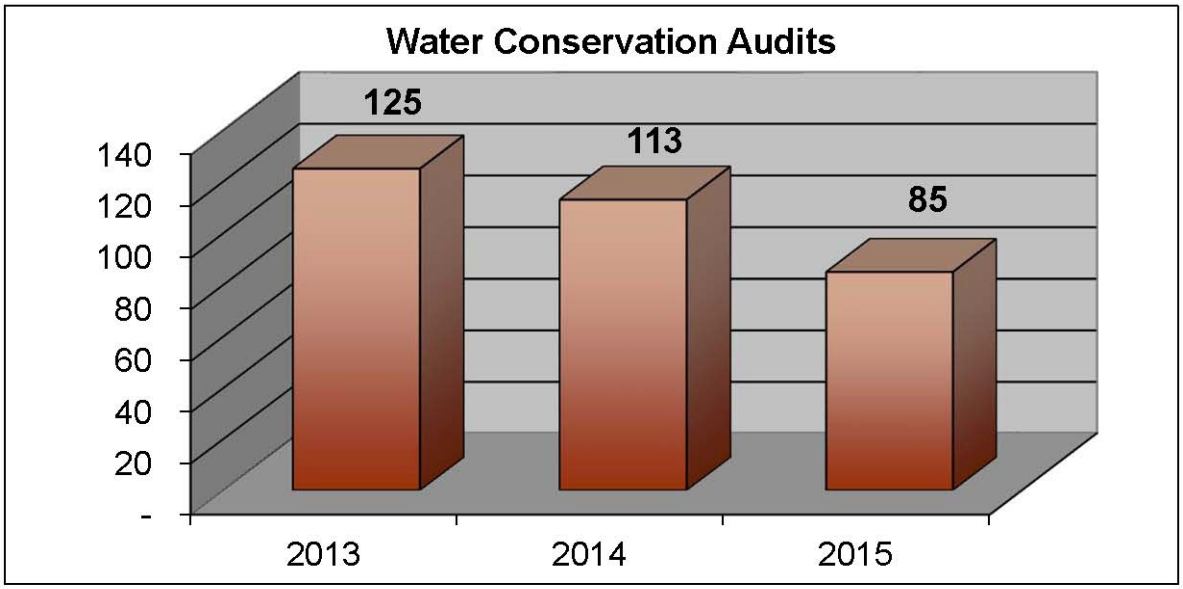
1,800,000,000
1,600,000,000
1,400,000,000
1,200,000,000
1,000,000,000
800,000,000
600,000,000
400,000,000
200,000,000
-
2013
2014
2015

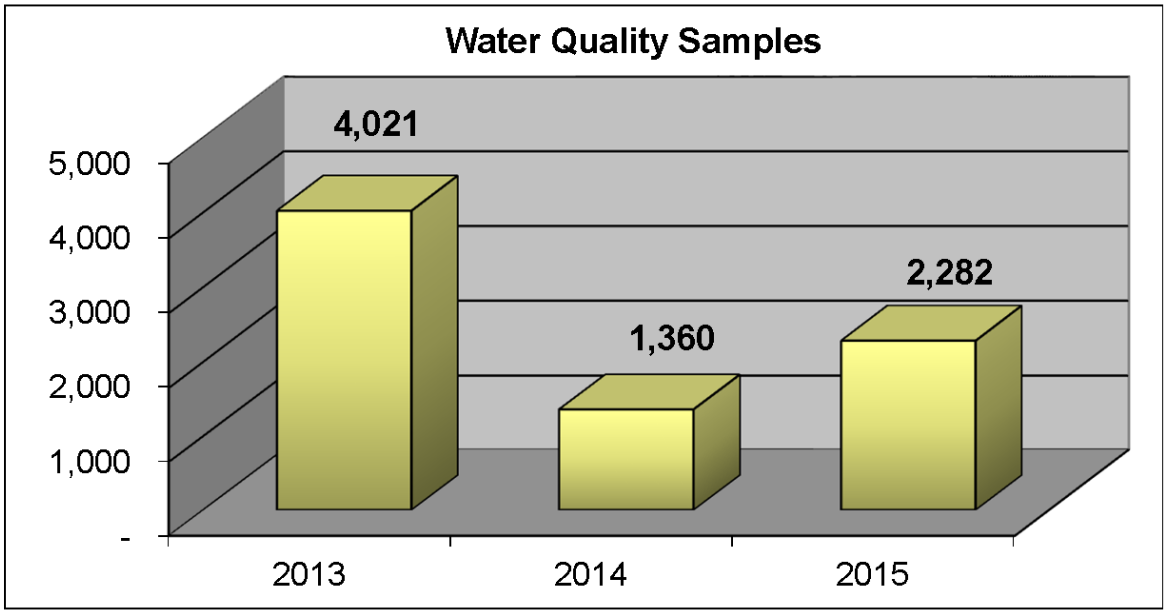

CAP Water Deliveries in Gallons
498,581,000
595,535,000
648,997,437
700,000,000
600,000,000
500,000,000
400,000,000
300,000,000
200,000,000
100,000,000
-
2013
2014
2015

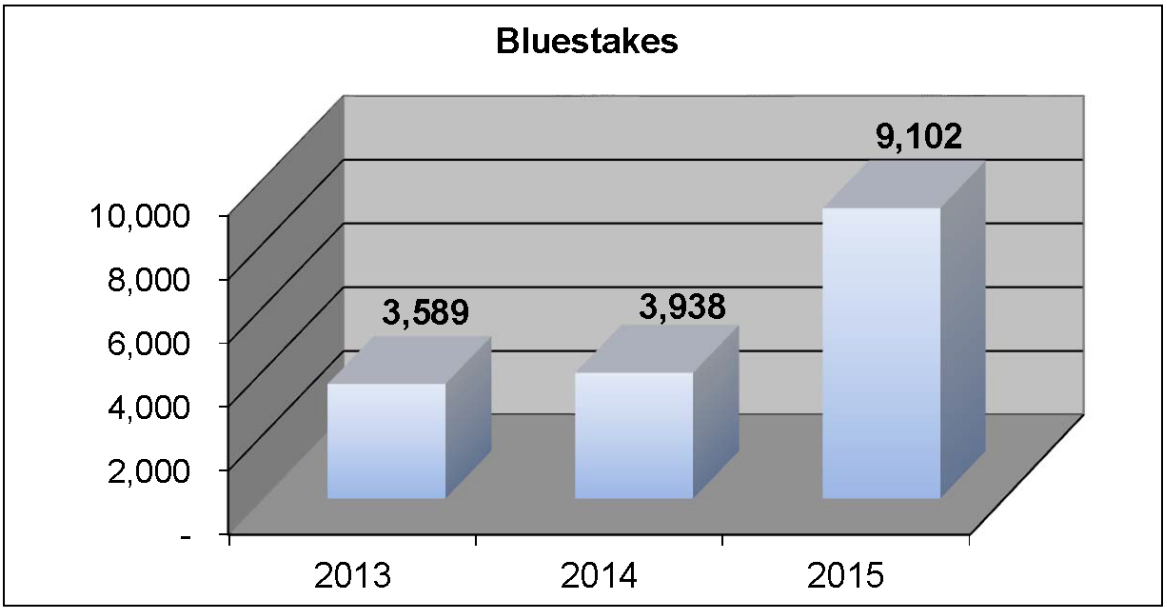

Reclaimed Water Deliveries in Gallons
714,880,000
718,660,000
655,655,000
750,000,000
700,000,000
650,000,000
600,000,000
550,000,000
500,000,000
2013
2014
2015

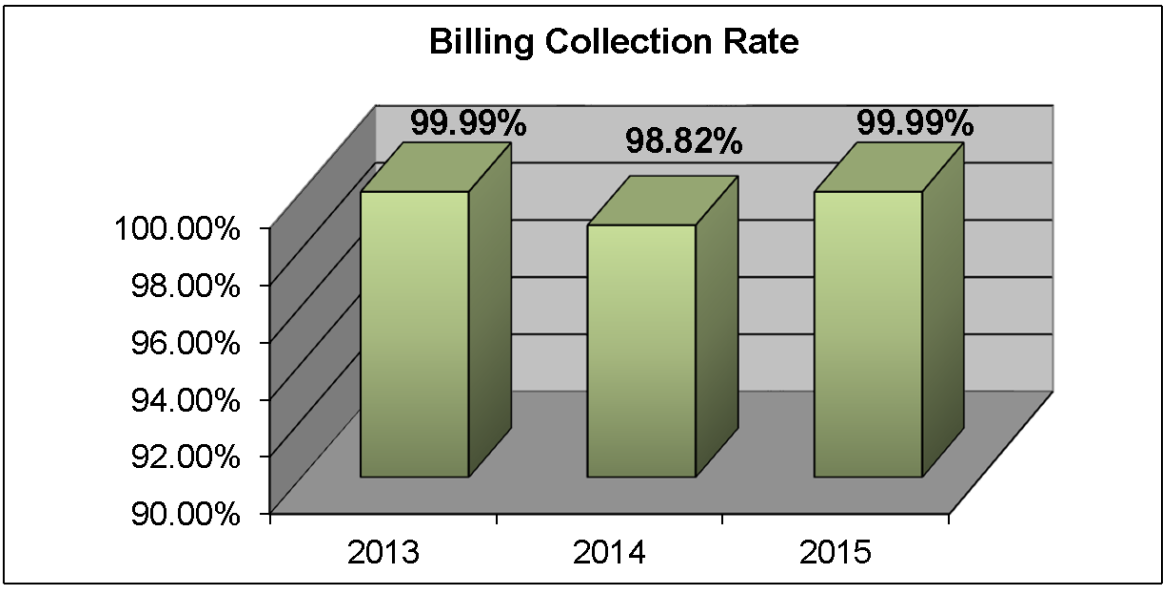

Customer Contacts - Customer Service
34,068
34,387
35,271
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2013
2014
2015

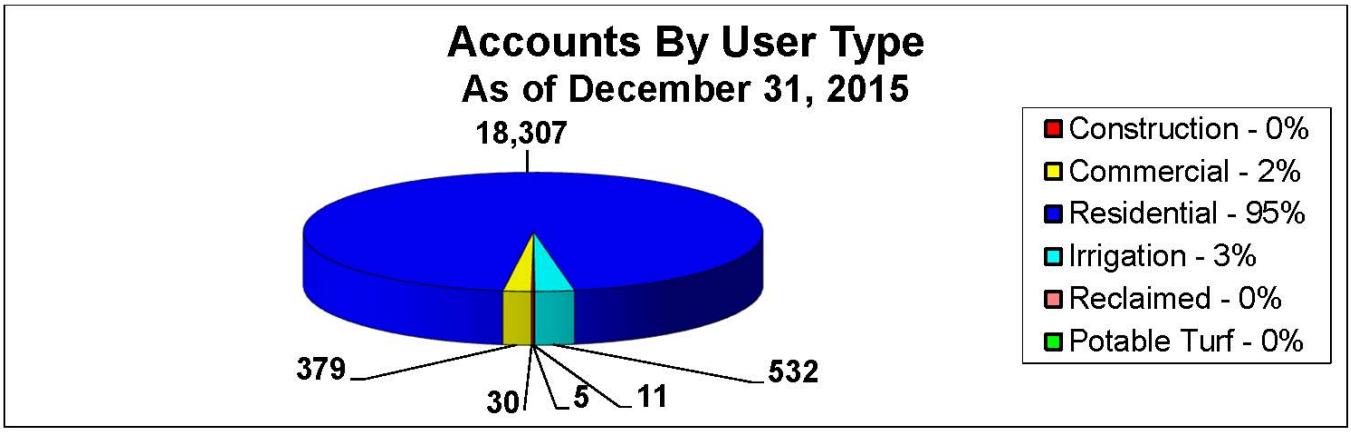

Customer Contacts - Field Operations
13,520
8,635
6,725
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2013
2014
2015

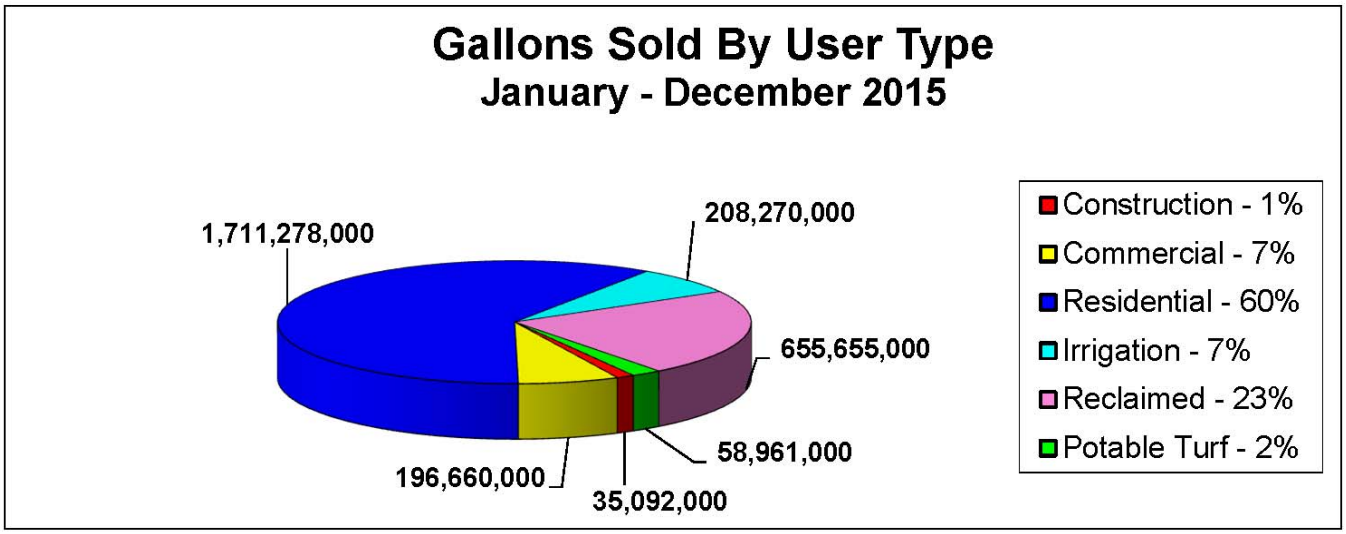

Water Conservation Audits
125
113
85
140
120
100
80
60
40
20
-
2013
2014
2015

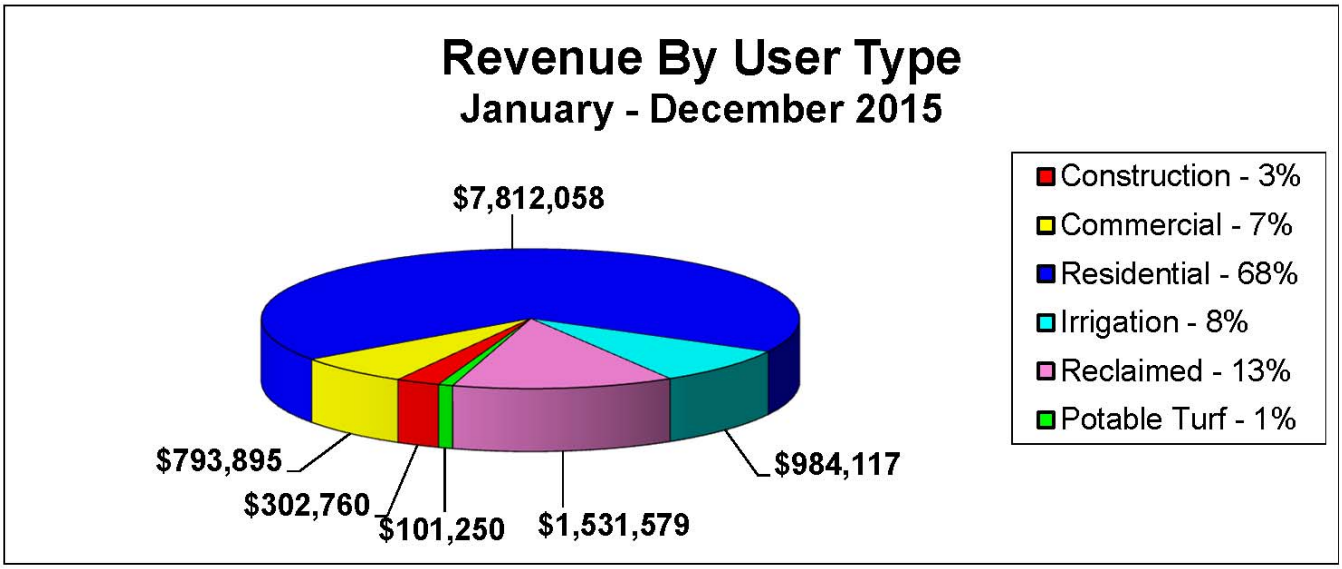

Water Quality Samples
4,021
1,360
2,282
5,000
4,000
3,000
2,000
1,000
-
2013
2014
2015


Bluestakes
9,102
3,589
3,938
10,000
8,000
6,000
4,000
2,000
-
2013
2014
2015


Billing Collection Rate
99.99%
98.82%
99.99%
100.00%
98.00%
96.00%
94.00%
92.00%
90.00%
2013
2014
2015


Accounts By User Type
As of December 31, 2015
18,307
379
30
5
11
532
Construction - 0%
Commercial - 2%
Residential - 95%
Irrigation - 3%
Reclaimed - 0%
Potable Turf - 0%


Gallons Sold By User Type
January - December 2015
1,711,278,000
208,270,000
655,655,000
58,961,000
196,660,000
35,092,000
Construction - 1%
Commercial - 7%
Residential - 60%
Irrigation - 7%
Reclaimed - 23%
Potable Turf - 2%


Revenue By User Type
January - December 2015
$7,812,058
$793,895
$302,760
$101,250
$1,531,579
$984,117
Construction - 3%
Commercial - 7%
Residential - 68%
Irrigation - 8%
Reclaimed - 13%
Potable Turf - 1%

TOWN OF ORO VALLEY
WATER UTILITY COMMISSION

2016 ANNUAL REPORT

APPENDIX B

PROPOSED FIFTEEN - YEAR
CAPITAL IMPROVEMENT PROGRAM

Oro Valley Water Utility
Proposed Capital Projects Program
Prepared: December 2, 2013
Revised: February 23, 2016

Water Utility Operating Fund
Potable Water Existing System Improvements

Project No.	Project Name	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	15 YearTotal
	Wells																
1	Steam Pump Drill and Construct						$ 700,000	$ 900,000									$ 1,600,000
2	Steam Pump - Solar 10,000 Watt System							$ 50,000									$ 50,000
3	Well Meter Replacement						$ 200,000							$ 50,000			$ 250,000
4	Well E2 Upgrade	$ 150,000															$ 150,000
5	Well Production Modifications		$ 50,000	$ 50,000	$ 50,000	$ 50,000											$ 200,000
6	Well Replacement Program										$ 700,000	$ 1,000,000				$ 700,000	$ 2,400,000
7	Hydropneumatic Tank Replacement	$ 60,000	$ 60,000	$ 60,000													$ 180,000
8	Replace Well Pumps	$ 75,000		$ 75,000		$ 100,000		$ 100,000		$ 100,000		$ 100,000		$ 100,000		$ 100,000	$ 750,000
Subtotal		**$ 285,000**	**$ 110,000**	**$ 185,000**	**$ 50,000**	**$ 150,000**	**$ 900,000**	**$ 1,050,000**	**$ -**	**$ 100,000**	**$ 700,000**	**$ 1,100,000**	**$ -**	**$ 150,000**	**$ -**	**$ 800,000**	**$ 5,580,000**
	Reservoirs																
9	El Con Storage - Operational Improvements		$ 50,000														$ 50,000
10	Water Quality Control Program	$ 70,000															$ 70,000
11	WP 4 Site Improvements		$ 50,000														$ 50,000
12	Glover Reservoir Coating Interior & Exterior	$ 100,000															$ 100,000
13	Big Wash Reservoir Coating - 2 Tanks	$ 100,000															$ 100,000
Subtotal		**$ 270,000**	**$ 50,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**			**$ 370,000**
	Boosters																
14	High Mesa E and F Zone Bstr. Enhancements				$ 50,000												$ 50,000
15	Replace Crimson Canyon Booster Station					$ 250,000											$ 250,000
16	Hydropneumatic (HP) Tank Replacement		$ 60,000	$ 60,000	$ 60,000												$ 180,000
17	Booster Station Modifications		$ 50,000	$ 50,000	$ 50,000	$ 50,000											$ 200,000
Subtotal		**$ -**	**$ 110,000**	**$ 110,000**	**$ 160,000**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**			**$ 680,000**
	Mains																
18	W. Lambert Ln. 12" Main (DIS)	$ 600,000															$ 600,000
19	Relocate 3 PRV'S OV Area	$ 100,000															$ 100,000
20	System Connection Upgrades	$ 50,000															$ 50,000
21	Rancho Verde Hydrants		$ 200,000														$ 200,000
22	Main Valve Replacements	$ 50,000	$ 50,000	$ 50,000	$ 50,000												$ 200,000
23	La Cholla -Lambert to Tangerine (RTA)	$ 70,000	$ 500,000														$ 570,000
24	Tangerine Potable Modifications (DIS) RTA	$ 20,000															$ 20,000
25	Hilton Hotel & Casitas Main Repl.			$ 100,000	$ 1,300,000	$ 700,000											$ 2,100,000
26	OV Community & Rec Center Main Repl.				$ 600,000												$ 600,000
27	Linda Vista Citrus Tracts Main Repl. (note 1)					$ 250,000	$ 250,000	$ 250,000									$ 750,000
28	Pusch Ridge Estates Main Repl.								$ 500,000	$ 500,000							$ 1,000,000
29	Monte Del Oro Main Repl.									$ 600,000	$ 600,000						$ 1,200,000
30	Rancho Verde Main Repl.											$ 800,000	$ 800,000				$ 1,600,000
31	Rancho Felix Main Repl.													$ 800,000			$ 800,000
Subtotal		**$ 890,000**	**$ 750,000**	**$ 150,000**	**$ 1,950,000**	**$ 950,000**	**$ 250,000**	**$ 250,000**	**$ 500,000**	**$ 1,100,000**	**$ 600,000**	**$ 800,000**	**$ 800,000**	**$ 800,000**			**$ 9,790,000**
	Structures & Walls																
32	Well Upgrades and Improvements			$ 75,000					$ 100,000				$ 100,000			$ 100,000	$ 275,000
33	Production Facility Bldg. Retrofit	$ 80,000	$ 100,000														$ 180,000
Subtotal		**$ 80,000**	**$ 100,000**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 100,000**	**$ -**	**$ -**	**$ -**	**$ 100,000**	**$ -**		**$ 100,000**	**$ 455,000**
	Meters & Equipment																
34	SCADA server and monitors			$ 50,000					$ 50,000					$ 50,000			$ 150,000
35	SCADA Legacy Replacement			$ 100,000					$ 100,000					$ 100,000			$ 300,000
36	Instrumentation Replacement						$ 250,000						$ 250,000				$ 500,000
37	Hilton 9 Hole Lake Feed Metering	$ 40,000															$ 40,000
Subtotal		**$ 40,000**	**$ -**	**$ 150,000**	**$ -**	**$ -**	**$ 250,000**	**$ -**	**$ 150,000**	**$ -**	**$ -**	**$ -**	**$ 250,000**	**$ 150,000**			**$ 990,000**
	Vehicles																
38	Replacement Vehicles - Meter Operations (1)	$ 29,000				$ 75,000	$ 50,000				$ 80,000	$ 55,000			$ 80,000	$ 55,000	$ 424,000
39	Distribution Vehicles (1)	$ 37,000		$ 50,000		$ 50,000		$ 70,000		$ 80,000		$ 80,000		$ 70,000		$ 70,000	$ 507,000
40	Production Vehicles		$ 70,000		$ 70,000		$ 75,000		$ 75,000		$ 50,000		$ 50,000			$ 50,000	$ 440,000
41	Engineering Vehicle (1)	$ 40,000								$ 40,000							$ 80,000
42	Inspector Vehicles (2)	$ 58,000		$ 25,000							$ 30,000		$ 30,000				$ 143,000
43	Construction Equipment - Backhoe & Trailer													$ 140,000			$ 140,000
44	Dump Truck	$ 80,000									$ 110,000						$ 190,000
Subtotal		**$ 244,000**	**$ 70,000**	**$ 75,000**	**$ 70,000**	**$ 125,000**	**$ 125,000**	**$ 70,000**	**$ 75,000**	**$ 120,000**	**$ 270,000**	**$ 135,000**	**$ 80,000**	**$ 210,000**	**$ 80,000**	**$ 175,000**	**$ 1,924,000**
Total Potable Water Existing System Improvements		**$ 2,053,000**	**$ 1,260,000**	**$ 820,000**	**$ 2,300,000**	**$ 1,650,000**	**$ 1,650,000**	**$ 1,440,000**	**$ 900,000**	**$ 1,440,000**	**$ 1,840,000**	**$ 2,170,000**	**$ 1,310,000**	**$ 1,520,000**	**$ 160,000**	**$ 1,250,000**	**$ 21,713,000**

Reclaimed Water Existing System Improvements

Project No.	Project Name	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	15 YearTotal
	Reclaim Water																
1	Add Reclaim Bstr. Pump Thornydale (TW)	$ 200,000															$ 200,000
2	24 Inch Reclaim Main Tangerine (DIS) RTA	$ 1,500,000															$ 1,500,000
Subtotal		**$ 1,700,000**															**$ 1,700,000**
Total Reclaimed Water Exist. System Improvements		**$ 1,700,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,700,000**

Oro Valley Water Utility
Proposed Capital Projects Program
Prepared: December 2, 2013
Revised: February 23, 2016

Alternative Water Resources Development Impact Fee Fund
Additional CAP Expansion Related Water Improvements

Project No.	Project Name	Category	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	15 Year Total
1	CAP La Cholla D-E Blending Booster Station	CAP				$700,000												$ 700,000
2	CAP Wheeling TW Naranja **1000** AF/Yr	CAP			$ 400,000	$ 400,000												$ 800,000
3	24" pipe Naranja/ La Cholla/Tangerine	CAP				$ 1,600,000	$ 1,200,000											$ 2,800,000
4	TW Naranja Booster Station Upgrade	CAP				$ 1,200,000												$ 1,200,000
5	E-C PSV Naranja Res. - CAP Blending	CAP	$ 100,000															$ 100,000
6	TW Oasis Booster Station Upgrades	CAP				$ 30,000	$ 100,000											$ 130,000
7	TW 12" Pipe	CAP				$ 80,000	$ 800,000											$ 880,000
8	TW 16" Pipe Oasis Rd.	CAP				$ 100,000	$ 1,000,000											$ 1,100,000
																		$ -
9	Wheeling TW Naranja **500** AF/Year	CAP						$400,000	$400,000									$ 800,000
10	24" pipe La Cholla/Tangerine to La Canada	CAP							$ 2,500,000									$ 2,500,000
11	Steam Pump C-D Booster Station	CAP						$ 1,200,000										$ 1,200,000
12	Big Wash D-E Booster Station	CAP							$ 800,000									$ 800,000
13	Inlet/Outlet Mod. at Allied Signal Res.	CAP							$ 50,000									$ 50,000
																		$ -
	5,000 AF/Year	CAP										$ 500,000						$ 500,000
14	16" pipe 1st Ave Tangerine	CAP										$ 1,500,000	$ 1,500,000	$ 700,000				$ 3,700,000
15	PRV Feed to E Zone Tangerine/La Can.	CAP											$ 50,000					$ 50,000
16	PRV Feed to E Zone Tangerine/1st. Ave	CAP											$ 50,000					$ 50,000
17	E-F Booster Station La Canada Res.	CAP											1,400,000					$ 1,400,000
18	**Lower Santa Cruz R&R** (1,500 AFY)	CAP										$ 900,000						$ 900,000
19	3-Recovery Wells & Delivery to WTP	CAP											4,000,000	500,000				$ 4,500,000
20	Water Treatment RR, Chlorination	CAP										$ 200,000	1,200,000	1,000,000				$ 2,400,000
21	Delivery, Storage, A-C Bstr, C-E Bstr	CAP										$ 3,000,000	13,000,000	10,000,000	10,000,000			$ 36,000,000
																		$ -
	9,500 AF/Year (completion 2029-2030)	CAP																$ -
	Lower Santa Cruz R&R (4,500 AFY)	CAP																$ -
22	7 - Recovery Wells	CAP											$ 500,000	$500,000	$ 5,000,000			$ 6,000,000
23	Water Treatment and RO	CAP												$1,000,000	$ 5,000,000			$ 6,000,000
24	Concentrate Management	CAP												$3,000,000	$ 5,000,000	$ 5,000,000		$ 13,000,000
25	16" pipe Naranja/ La Cholla to Reservoir	CAP												$ 300,000	$ 2,000,000			$ 2,300,000
Total Alternative Water Capital Improvements			**$ 100,000**	**$ -**	**$ 400,000**	**$ 4,110,000**	**$ 3,100,000**	**$ 1,600,000**	**$ 3,750,000**	**$ -**	**$ -**	**$ 6,100,000**	**$ 21,700,000**	**$ 17,000,000**	**$ 27,000,000**	**$ 5,000,000**		**$ 89,860,000**

Additional Reclaimed Expansion Related Water Improvements

Project No.	Project Name	Category	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	15 YearTotal
	Booster Pumps																	
		Reclaimed																
		Reclaimed																
Subtotal		Reclaimed																
	Reservoirs																	
		Reclaimed																
		Reclaimed																
Subtotal		Reclaimed																
	Mains																	
3	12-inch Main Ext./Riverfront Park/7,000 FT.	Reclaimed								$ 1,100,000								**$ 1,100,000**
4	12-inch Main Ext./Hilton 9-hole GC/2.75 Miles	Reclaimed									$ 300,000	$ 2,900,000						**$ 3,200,000**
5	12-inch Main Ext./Pusch Ridge HS/5,280 FT.	Reclaimed											$ 100,000	$ 924,000				**$ 1,024,000**
6	12-inch Main Ext./James Krieg Park/2,640 FT.	Reclaimed											$ 60,000	$ 462,000				**$ 522,000**
Subtotal		Reclaimed				$ -		$ -	$ -				$ 160,000	$ 1,386,000				**$ 5,846,000**
Total Reclaimed Water Improvements			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,100,000**	**$ 300,000**	**$ 2,900,000**	**$ 160,000**	**$ 1,386,000**	**$ -**			**$ 5,846,000**

Oro Valley Water Utility
Proposed Capital Projects Program
Prepared: December 2, 2013
Revised: February 23, 2016

Potable Water System Develoment Impact Fee Fund
Expansion Related Improvements

Project No.	Project Name	Category	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	15 Year Total
1	Property Acquisition	Potable				$ 500,000												$ 500,000
3	Booster Station	Potable					$ 150,000	$ 300,000										$ 450,000
2	1.0 MG Reservoir	Potable					$ 150,000	$ 1,000,000	$ 500,000									$ 1,650,000
4	New 16" Pipe Main	Potable						$ 150,000	$ 1,500,000									$ 1,650,000
	Arroyo Grande State Land																	
5	N. Oracle Reservoir Property Acquisition	Potable									$ 250,000							$ 250,000
6	16" N. Oracle F-Zone Main	Potable										$ 300,000	$ 3,000,000					$ 3,300,000
7	N. Oracle 1.0MG F-Zone Reservoir	Potable											$ 250,000	$ 1,500,000	$ 1,000,000			$ 2,750,000
8	N. Oracle H-Zone Booster Station	Potable											$ 150,000	$ 600,000				$ 750,000
9	12" Sun City H-Zone Main	Potable											$ 150,000	$ 1,000,000	$ 500,000			$ 1,650,000
10	16" G-Zone Main	Potable												$ 200,000	$ 2,000,000			$ 2,200,000
11	E. Tortolita Property Acquisition	Potable											$ 250,000					$ 250,000
12	Chalk Creek Property Acquisition	Potable												$ 200,000				$ 200,000
13	E. Tortolita 2.0MG G-Zone Reservoir	Potable												$ 250,000	$ 2,000,000			$ 2,250,000
14	G-H Zone Booster Station	Potable												$ 150,000	$ 400,000			$ 550,000
15	Chalk Creek 0.5 MG H-Zone Reservoir	Potable												$ 150,000	$ 1,000,000			$ 1,150,000
16	16" H-Zone Main	Potable												$ 200,000	$ 2,000,000			$ 2,200,000
17	16" Chalk Creek H-Zone Main	Potable											$ 100,000	$ 100,000	$ 1,000,000			$ 1,200,000
	Forcast beyond 2029																	
18	State Land 0.5MG I - Zone Reservoir	Potable																
19	State Land Property Acquisition	Potable																
20	I - Zone Interconnect	Potable																
21	K&J Zone Booster Station	Potable																
Total Expansion Related Capital Improvements			$ -	$ -	$ -	$ 500,000	$ 300,000	$ 1,450,000	$ 2,000,000	$ -	$ 250,000	$ 300,000	$ 3,900,000	$ 4,350,000	$ 9,900,000			$ 22,950,000

TOWN OF ORO VALLEY
WATER UTILITY COMMISSION

2016 ANNUAL REPORT

APPENDIX C

ACRONYMS AND GLOSSARY

ACRONYMS

ACH	Automated Clearing House (automatic payment program)
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AF	Acre Feet
AMI	Advanced Metering Infrastructure
AWBA	Arizona Water Banking Authority
AWS	Assured Water Supply
AWWA	American Water Works Association
AWRDIF	Alternative Water Resources Development Impact Fee
AZWARN	Arizona Water and Wastewater Agency Response Network
BCP	Business Continuity Plan
CAGRD	Central Arizona Groundwater Replenishment District
CAP	Central Arizona Project
CAVSRP	Central Avra Valley Storage and Recovery Project
CAWCD	Central Arizona Water Conservation District
CCR	Consumer Confidence Reports
CPP	Capital Projects Program
CSWSA	Countryside Water Service Area
CY	Calendar Year
DAWS	Designation of Assured Water Supply
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GIS	Geographic Information System
GPF	Groundwater Preservation Fee
GPM	Gallons per Minute
GWA	Groundwater Allowance Account
IGA	Intergovernmental Agreement
IOC	Inorganic Compound
ISAC	Information Sharing and Analysis Center
LSCRRP	Lower Santa Cruz Replenishment Project
LTSC	Long-Term Storage Credit
MGD	Million Gallons per Day
MCL	Maximum Contaminate Level
M&I	Municipal and Industrial
OVWSA	Oro Valley Water Service Area
PDEQ	Pima County Department of Environmental Quality
PWSDIF	Potable Water System Development Impact Fee
SCADA	Supervisory Control and Data Acquisition
Water CASA	Water Conservation Alliance of Southern Arizona
WOW	Water on the Web

GLOSSARY

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 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** located in the southwestern United States and northwest Mexico. The 1,450 mile (2,330 km) river drains an expansive, arid watershed that encompasses parts of seven 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.

Developed Water Resources – Water resources and supply that are owned by a water provider for which infrastructure has been constructed to deliver the water directly to a water service area. For Oro Valley Water Utility this includes a portion of our groundwater rights, CAP water allocation and reclaimed water. Undeveloped water resources are those water supplies that do not have associated infrastructure but are used indirectly by transfer or exchange, such as a portion of our Long-Term Storage Credits.

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

Fifteen Year Capital Projects Plan – A long-term plan for the future 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 for both the potable water system(s) and the reclaimed water system.

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 be used again. The credits are issued 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.

Infrastructure Improvements Plan (IIP) – A required plan that identifies projects that will be built for new growth and development within a governmental jurisdiction. An IIP is required to be developed for the inclusion of associated costs when calculating development impact fees.

Kai Farms – An approved Groundwater Savings Facility located at a farm near Redrock, Arizona that Oro Valley Water Utility uses to accrue storage credits by selling a portion of our CAP water to the farm for irrigation use. Credits are accrued because the farm uses our CAP water and does not use groundwater for irrigation. The groundwater not used becomes a credit to Oro Valley Water Utility for future use.

Lake Mead – The largest water storage reservoir in the United States with a capacity of 25,900,000 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.

Lake Powell – A water storage reservoir located on the Colorado River near Page, Arizona with a capacity of 24,300,000 acre feet. Glen Canyon 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.

"Paper" Water – A term used to describe water that is not directly delivered and is recovered through credits. Recovery of these credits occurs through pumping from permitted recovery wells in a location that is more than one mile from the recharge and storage facility where the credits were originally stored.

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.

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.

"Wet" Water – A term used to describe water that is directly delivered from a source of supply such as directly off of a canal or from recovery wells that are located within one mile of recharge and storage facilities where the recovered credits were originally stored.