

Quartz Hill Water District



Budget FY 21

**QUARTZ HILL WATER DISTRICT
BUDGET FY 2021
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QUARTZ HILL WATER DISTRICT

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FISCAL YEAR 2021 BUDGET-EXECUTIVE SUMMARY

Quartz Hill Water District will be a responsible overseer of the resources, assets and natural environments entrusted to us in order to provide a high-quality water supply that is resilient, reliable and supplied at a fair and equitable rate. (Mission Statement)

FOR: QUARTZ HILL WATER DISTRICT CUSTOMERS AND STAKEHOLDERS

FROM: CHAD J. REED, GENERAL MANAGER

Introduction

The Board of Directors and Quartz Hill Water District Staff are pleased to present the budget for FY 2021. Your continued interest in Quartz Hill Water District (QHWD) and the financial stability of the District is appreciated.

During the past year, several unprecedented events have occurred that have directly affected the bottom line of the District, from postponed taxes to waving of all late fees for approximately six months. The Covid-19 and social unrest have affected operation at Quartz Hill Water District, and the effects of these unprecedented events will continue to be felt into FY '21 as well.

Since the rescinding of the drought surcharge prior to the start of FY 17 the consumption had continued to steadily increase. However, during the 2018 calendar year the District used 4668 acft whereas during 2019 the District used only 4170 netting in a difference of nearly 500 acft. This also affects the bottom line of the district as our primary source of funding is water sales.

Though water sales were down, the District was still able to absorb the majority of the Antelope Valley East Kern (District's wholesale water provider) rate increase which was 7.5%. Through cost savings and other measures, the District was able to pass only through 2% of this increase to our customers and absorb the remaining 5.5%. QHWD has continued to work from the rate study that was performed by Urban Futures Inc. and is attached below in Appendix E.

Quartz Hill Water District expects operating revenues for Fy'20 to be \$6.48 million with \$4.3 million operating expenses. Planned capital expenditures were \$762K and financial obligations for payment of principal and interest on debt was \$568K. Budgeted revenues were slightly less

due to lower demand and deferred property taxes. The expenses were slightly higher due to AVEK rate increase being 7.5% instead of the planned 5% increase, and salary and benefit expense were slightly more pared to FY '20.

The proposed budget will address the need for a rate analysis so staff can continue utilizing the historically proven capital improvement strategies. Quartz Hill Water District's Strategic Plan also identifies the Core Values exercised by the District and the Strategic Elements required to accomplish our Mission. These management Strategic Elements provides the framework for the remaining 2020 budget discussion and proposed FY '21 budget.

They are:

- Vision
- Respect
- Integrity
- Excellence
- Legacy

Quartz Hill Water District currently has two sources of water, which are the Antelope Valley Aquifer and the California State Water Project. The Antelope Valley Aquifer is considered the primary source for water. However, during wetter years the District tries to utilize the available State water since the ground water is a finite resource. During the past calendar year, Quartz Hill Water District used approximately 67% imported water and 33% ground water to protect this finite resource.

During FY '20 the following capital purchases were made:

- Replacement valves
- Genset and Automatic transfer at the operations Center
- 1560 new Allegro registers (anticipated)
- 85 new commercial Allegro Meters (anticipated)
- Additional meter reading equipment
- Well 12 rehabilitation
- Well 16 rehabilitation
- Meter Lid replacement program

QUARTZ HILL WATER DISTRICT

In 1954, Quartz Hill County Water District (name changed by Resolution 217 and recorded in January of 1980 to drop the word County) was founded when two Mutual Water Companies were combined. The names of the Mutual Water Companies were B.V Mutual Water Company (B.V.) and Belle Vue (Bel View) Mutual Water Company. At the time of the merger B.V had 54,166 feet of mains and 2 wells and the total system was appraised at \$94,000.00. Bel View also had an appraisal performed for the purpose of purchasing the Company and the appraisal reports 17,120 feet of mains and 1 well was present. The total system was appraised at \$23,500.00 in 1954.

Since this time, QHWD has grown and currently has over a half million feet of mains and 10 wells. During the previous audit year (Fiscal Year 2019), the distribution system and asset was valued over \$39 million. During the month of May 2020 QHWD staff billed 5830 accounts which would equal 20,352 people served based off the average household size as determined by last census. QHWD currently obtains all of its potable water from two sources, the first is the Antelope Valley Aquifer and the second is Antelope Valley East Kern, our State Water Project provider.

In 2008, QHWD changed the billing practices from bi-monthly to monthly to help customers during those difficult economic times and help standardize billing practices across all utilities. QHWD is continuing to use the rate study performed by Urban Future Inc. during FY16 and is attached below in Appendix E.

Per the Cost of Service Analysis, new rates were adopted, and the residential rate structure was modified to eliminate the "Conservation Tier." However, the increasing conservation block rates practice that was put into place by the Board of Directors in early 2009 was maintained. Two components are used to derive this rate structure, namely the inside and outside allotment. The inside allotment is based on the number of occupants per dwelling unit. It is assumed that 3 people reside at each home. The outside allotment is based on the total lot size determined by the Los Angeles County Assessor's office. Once the total annual allotment is determined, a monthly allotment is determined by using the monthly Evapotranspiration rate for this geographical area expressed as a percentage then multiplied by total annual allotment. All water rates are based on the actual cost that is associated with producing the water as denoted in the table below.

Table 1 QHWD Expanded Rate Components

RESIDENTIAL FIXED CHARGES

Existing		Proposed Adjustments				
		8.25%	5.75%	5.75%	5.75%	5.75%
Meter	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
3/4"	\$23.13	\$26.78	\$28.32	\$29.95	\$31.67	\$33.49
1"	\$33.29	\$26.78	\$28.32	\$29.95	\$31.67	\$33.49

RESIDENTIAL CONSUMPTION CHARGES

Existing		Proposed Adjustments				
		8.25%	5.75%	5.75%	5.75%	5.75%
Tier	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
0	\$0.98					
1	\$1.04	\$1.02	\$1.08	\$1.14	\$1.21	\$1.28
2	\$1.56	\$1.35	\$1.42	\$1.51	\$1.59	\$1.68
3	\$2.60	\$2.56	\$2.71	\$2.86	\$3.03	\$3.20
4	\$3.64	\$4.86	\$5.14	\$5.43	\$5.75	\$6.08

NON-RESIDENTIAL FIXED CHARGES

Existing		Proposed Adjustments				
		8.25%	5.75%	5.75%	5.75%	5.75%
Meter	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
3/4"	\$23.13	\$23.63	\$24.99	\$26.42	\$27.94	\$29.55
1"	\$33.29	\$23.63	\$24.99	\$26.42	\$27.94	\$29.55
1.5"	\$45.41	\$78.76	\$83.28	\$88.07	\$93.14	\$98.49
2"	\$66.62	\$126.01	\$133.26	\$140.92	\$149.02	\$157.59
3"	\$98.46	\$275.68	\$291.53	\$308.29	\$326.02	\$344.77
4"	\$193.98	\$472.58	\$499.75	\$528.49	\$558.88	\$591.01
6"	\$363.78	\$984.55	\$1,041.16	\$1,101.03	\$1,164.34	\$1,231.29
8"	\$576.03	\$1,417.74	\$1,499.26	\$1,585.47	\$1,676.63	\$1,773.04

NON-RES. CONSUMPTION CHARGES

Existing		Proposed Adjustments				
		8.25%	5.75%	5.75%	5.75%	5.75%
Tier	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
1	\$1.15	\$1.08	\$1.15	\$1.21	\$1.28	\$1.36
2	\$1.54	\$1.22	\$1.29	\$1.36	\$1.44	\$1.52
3	\$1.90	\$1.81	\$1.91	\$2.02	\$2.14	\$2.26

Well before the Governor proclaimed a Drought State of Emergency, QHWD launched our Water Conservation Program in 2009. Working towards a required reduction assigned in SB7x-7, our program grew in leaps and bounds.

Though the proclaimed drought has been lifted, QHWD is continuing to proactively promote community programs and events to spread information throughout this fiscal year. Quartz Hill

Water District has participated in many outreach programs that were organized by the conservation staff. Examples of this include school visits at Gregg Anderson Academy and Del Sur and Saturday workshops at Antelope Valley College.

Our ongoing efforts are aimed at keeping customers on track for reduced usage through educated choices.

Water Portfolio

Quartz Hill Water District has always strived to prepare during the wet years for the historical multi-year droughts. The Board of Directors at Quartz Hill Water District have strived to utilize available resources and safeguard our finite resources. Some of the past efforts have included water purchased during wet years and stored in the Antelope Valley East Kern Water Bank as well as maximizing our state water deliveries and carrying over water stored with the Antelope Valley Water Master. As of January 1, 2020, (Water is calculated on a calendar year and not a fiscal year) Quartz Hill Water District has purchased from AVEK and stored 3550 acft of water however, with the 10% leave behind 3195 acft would be able to be recovered. Per the annual report provided by the AV Water Master Engineer (appendix E), Quartz Hill Water District has 3,730 acft of water as “carry-over” .

Chart of Accounts

During the FY 15 Budget staff at Quartz Hill Water District created a new chart of accounts that conforms to the State of California’s accepted form and practice as outlined in “State Controller’s Uniform System of Accounts for Water Utility Districts 2000”. This chart of accounts is found in Appendix D.

Revenues

The District is funded through rates, fees and charges for services provided by Quartz Hill Water. Water rates pay for operations and maintenance expenses, repair, capital replacement and modifications to existing facilities and debt services.

Expenses

In planning expenses, QHWD follows the Mission Statement to keep rates as low as good service will permit. This means QHWD will properly maintain its facilities and continue to seek ways to operate more efficiently.

Service Area

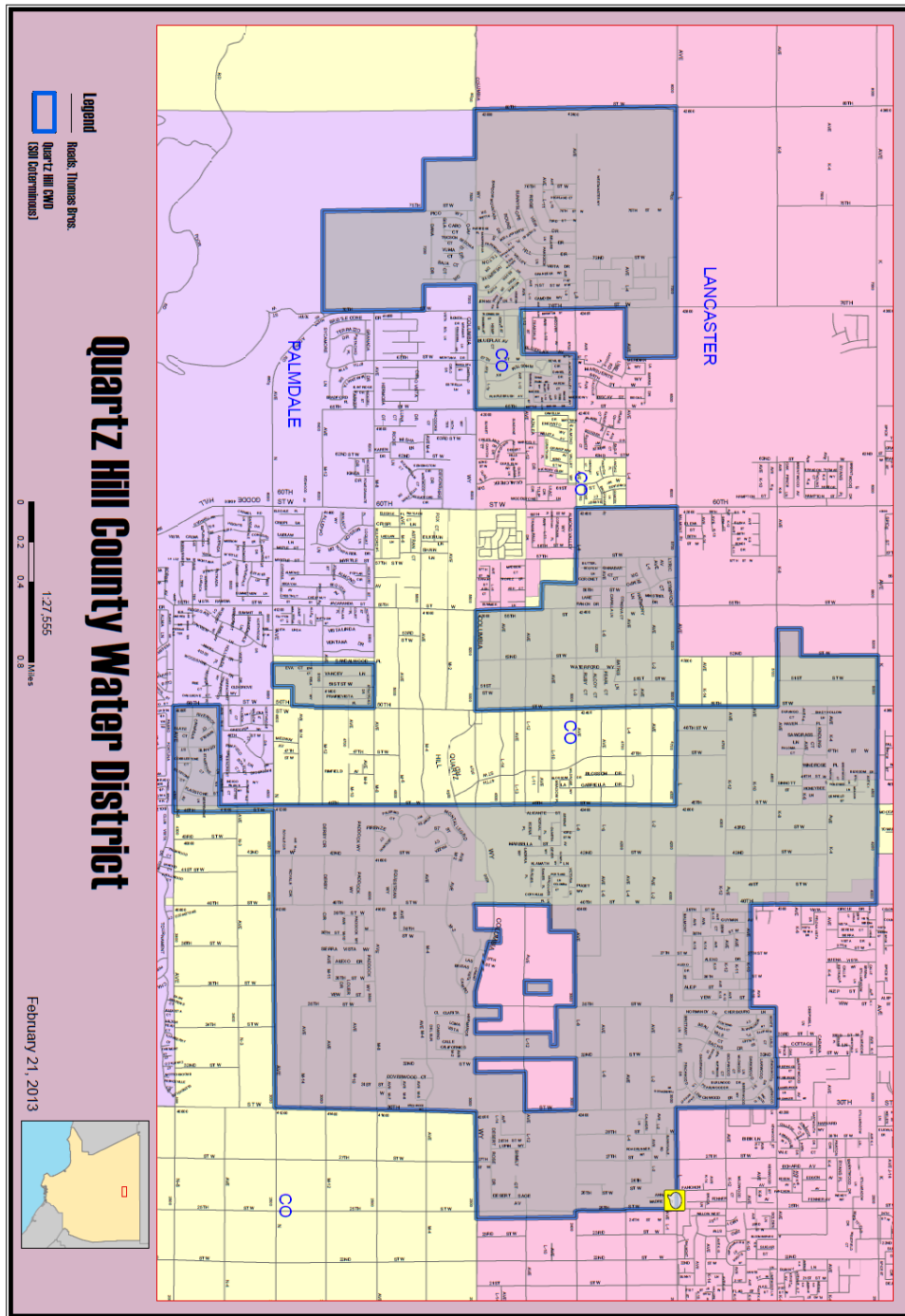


Figure 1 Map of District Boundaries

Mission and Values

Mission Statement:

Quartz Hill Water District will be a responsible overseer of the resources, assets and natural environments entrusted to us in order to provide a high-quality water supply that is resilient, reliable and supplied at a fair and equitable rate.

Core Values:

Vision: Whether something will take five minutes, five years or five decades, we will take a proactive approach and we will take actions to be prepared. We will honor the history of Quartz Hill Water District in doing what those before us have done; free our minds to think of what can be possible and not be constrained by what has or has not worked in the past. We will be flexible, adaptable and prepared for what is possible.

Respect: We will listen, honor and value each other, our customers, our community and our environment. We will earn respect by acknowledging and validating the rich and diverse experiences of others and by always acting in a fair, thoughtful, inclusive and non-judgmental manner.

Integrity: Our word is our bond. In all of our endeavors, we will act in the best interest of the public and our community with honesty, transparency and candor.

Excellence: In all that we do every day, there is only one standard – to perform flawlessly both as individuals and as teams in order to be the best in every aspect of our operations. Doing anything less than our best is disrespectful to our customers, our employees and our mission.

Legacy: Our future is based on our duty to pass on the heirloom of a secure, reliable, high-quality water operation for generations to come. We are steadfast in our commitment to mastering our craft and offering superior value to our customers.

Our culture is a combination of these values, our experiences, our rich history and our common mission. These value statements are more than words; they are the ideas, aspirations and beliefs that guide us every day, lead us to the future and provide a measure against which we can hold ourselves accountable.

Management and Staff

The General Manager is the Chief Executive Officer for Quartz Hill Water District and reports directly to the Board of Directors (BOD). He carries out all other duties and responsibilities as assigned by the Board of Directors as it fulfills its obligations.

The General Manager executes the policies and decisions of the BOD and reviews and recommends to the BOD changes in rules and regulations with respect to all matters appropriate for its action.

In addition, the General Manager gives overall direction to employees and oversees the work necessary to provide an adequate supply of water to the residents of Quartz Hill. The General Manager represents the BOD in ongoing relationships with all levels of government, community organizations, and the public served, and recommends to the BOD a rate structure and other income producing procedures that will assure adequate sources of funds to meet operating and maintenance costs, finance of ongoing capital improvement programs, and the principal and interest payments on long-term debts.

During the past year several unprecedented events have occurred that have affected the District fiscally one such was the Board of Directors voted to suspend all late penalties and ancillary charges through the end of FY 20. Another was the County Board of Supervisors decision to postpone the due date for all LA County residents property taxes which will affect the Districts bottom line for FY 20.

Through much hard work and persistence staff has been able to stay dynamic and flexible with the nearly daily changes that have occurred during the first quarter of 2020.

FY 2020 Accomplishments

The following goals/objective were accomplished during the FY '20 period:

- Backup generator with automatic transfer switch installed at the operation Center
- Well 6a arsenic treatment plant is operable and fully permitted.
- Increased the use of Asset Management Software to greater capabilities
- All Sites “tour ready at all times” (This proved to be very beneficial during the COVID-19 shut down)
- Continue to cross train to improve staff readiness and competency
- Continue to utilize and learn Elements Software Package to ensure accurate and up-to-date asset schedule.

Management and Staff strategies that helped accomplish the accomplishments:

1. Weekly front office standup meetings.

2. Increased residential and commercial meter testing program to comply with Assembly Bill 555
3. Nearly weekly meeting/emails with State engineer to obtain the Well 6A operating permit
4. Monthly Staff meetings so all staff can coordinate work efforts to ensure most efficient and best possible operations and results.
5. Complied with continued State Mandated Drought Restrictions.
6. Crossed trained all new staff to ensure work order flow, conciseness, and thoroughness not dependent on specific available staff.
7. QHWD has utilized “Target Safety” training website provided by ACWA JPIA at no cost. This resulted in safety saving less down time in the field and more customized training.
8. QHWD staff has utilized additional financial checks to ensure best accounting practices are utilized:
 - a. All current accounting practices and procedures were reviewed to check for validity and segregation of duties to ensure the adequacy of internal controls over receipting, disbursements and safeguarding of assets.
 - b. Developed check list to ensure that all budgetary and financial items are checked in a systematic fashion.
 - c. Each Supervisor/Manager that oversees specific operations can work with accounting staff during the review process to ensure accuracy.
 - d. No material findings in annual audit

Monitoring Performance Indicators/ Benchmarking

Table 2 Benchmark and Indicators from ACWA Benchmarking and Indicator 2015 Manual

Performance Indicator	Western USA (All Sizes)			QHWD	
	Description	25th per.	Median	75th per.	Statistic #
Customer accounts/Employee	292	385	595	530	High #
Cash Reserves (days)	60	186	336	800	High #
12-month water loss %	4.3	6.2	11.5	4.14	Low #
Service Affordability	.59%	.72%	.97%	.615%	Low #
Customer Service Complaints	1.29	2.88	13.94	2.41	Low #

FY 2021 Objectives

The FY '21 Budget continues to support providing a safe, productive and rewarding work environment by funding employee related programs, asset maintenance and capital improvements. Machines and computers are great but one of the most important assets to the District is the staff and employees who are addressed in the related internal communications, training and education. These training and other programs will continue to improve the Districts overall readiness and ability to face whatever trials and disaster face the District. The Budget also affords for an aggressive preventative maintenance program to maintain our goal of “no unscheduled equipment down time.” During the previous 64 years of operation, QHWD has established a great reputation by being the first District in the region to implement conservation based rates, rebates and utilize a local water bank to ensure water availability in one of the driest years on recorded history. The following goals will help QHWD maintain a level of excellence unmatched in the region:

- Complete 5-year rate analysis
- Continue to comply with AB555 State Mandated loss reporting
- No unscheduled equipment down time
- Continue to use Asset Management Software to greater capabilities
- All Sites “tour ready at all times”
- Continue to cross train to improve staff readiness and competency
- Organize, procure facilitation, and begin the process of updating QHWD strategic plan and vision
- Continue to utilize and learn Elements Software Package to ensure accurate and up-to-date asset schedule.

Litigation Expenses

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June 8, 2018

Chad Reed
General Manager
Quartz Hill Water District
5034 West Ave L
Quartz Hill CA 93536

RE: Pending Litigation for Budget

Dear Mr. Reed:

There is no pending or threatened litigation against Quartz Hill Water District.

There are no unasserted possible claims or assessments that call for disclosure pursuant to Statement of Financial Accounting Standards Number 5. Specifically, I have concluded that there is no loss contingency to disclose because I am unaware of any information that indicates it is probable that an asset had been impaired or a liability has been incurred.

The basis of my opinion is limited to my role as general counsel of Quartz Hill Water District. No amount is due for my services excepting what we have billed this month.

This opinion is effective as of the day of this letter.

In prior years, there was groundwater litigation that required substantial discussions and disclosure. Judgment has been rendered in that case, and the attorney fees have been awarded and accounted for, though the amount of fees is currently on appeal.

Sincerely,

A handwritten signature in blue ink that reads 'Bradley T. Weeks'.

Bradley T. Weeks
Attorney at Law

Operations Report

The District's overall operations include the Administrative Department and Field Department.

The Field staff's primary duties include maintaining and repairing all infrastructure associated with the delivery of water, fleet vehicles, equipment, and other related facilities. This includes the District's 10 active ground water wells, 8 reservoirs, 6 booster stations, 17 pressure regulating stations and 2 hydro-pneumatic tanks. Other related tasks performed by the Field staff include: construction inspections, meter reading, customer service, working with Local, State, and Federal agencies to comply with drinking water regulations, optimize energy consumption, maintain pump efficiency and performing safety audits/training.

The Administrative Department's primary responsibility is overseeing the customer service and finance related aspects of the District. This includes customer service, accounts payable, payroll, bank reconciliation, financial reporting, auditing, internal controls, and fixed asset allocation. The customer service portion of the Administrative Department manages the day-to-day affairs for the water customers of the Quartz Hill Water District. This includes billing, meter reading, new service applications, customer complaints, payment processing, collections and records management. Water quality reporting/compliance to the California State Water Board is also performed by the Administrative staff.

FY 2019 System Indicators

- 5,830 Customer service connections
- 1,233 Gate valves
- 46 Cla-Valves
- 592 Fire hydrants
- 94 Miles (498,000 ft.) of pipeline ranging in size from 4"-24"
- 4107 Acre feet of water distributed (**1.34 billion gallons**)
- 10.3 million gallons of reservoir storage
- 130,000 kWh of Solar power produced

FY 2019 Administrative Staff Accomplishments

- Covid-19 created a unique time for the District. Staff remained resilient throughout this time and maintained customer service as expected. The office phone lines and web pay remained open, with the exception of the lobby being closed.
- Complied with the California State Water Boards water quality regulations and reporting.
- Increased enrollment of reoccurring customer monthly payments by 10%

- Continued cross training of office staff in various areas (billing, cash handling, door tags and shutoffs) to enable the office to operate efficiently.
- Provided Customer Service staff with additional training to promote effective customer service practices to meet the changing needs of our customers.
- Customer Service staff are continuing to promote the updated website and the new payment portal. The website enables our customers to access their account information online at any time to view their bills and make payments via credit card. They can also perform other activities such as: address change requests, link more than one account and view their individual target allocation.
- Maintained accurate records while updating the billing software as to the replacement of radio read meters in various parts of the District. A total of 1500+ meter registers were replaced.
- Completed updated versions of the Standard Operating Procedures for all Administrative and Conservation functions.

FY 2020 Administrative Staff Objectives

- Provide a safe environment for staff and customers to engage in while adhering to Covid-19 protocols in place (and adapt if the CDC releases new protocol)
- Launch the Customer portal for user interface on monthly usage reports and history.
- Continue to provide Administrative Service staff with additional training/education to foster effective customer service practices to meet the changing needs of our customers.
- Cross training office personnel in various areas (billing, door tags and shutoffs) to maintain and/or improve the efficiency of the office.
- Cross training of field staff as to have additional resources when office staff are absent.
- Continue to maintain data entry of the meter change out information in a thorough and timely manner to ensure maintain billing accuracy and efficiency.
- Continue to coordinate with the field staff to ensure that all radio read meters are manually read at least once a year to ensure that the units are operating effectively.
- Continue to work on upgrades to the website to enable customers to access more information.
- Complete year-end audit and required financial reporting in a timely manner.
- Continue to provide technical and financial support to all departments.
- Continue to provide monthly financial reports to the General Manager and Board of Directors.
- Continue development of procedural documentation related to other financial related processes such as depreciation and account reconciliation.
- Continue improving on finance workflow schedule to better position the District for information requests related to the District's financial information.
- Completed Annual Water Quality Report accordingly and on schedule (CCR).
- Maintained all record keeping in accordance with the California State Water Board.

FY 2019 Field Staff Accomplishments

- Covid-19, emergency response readiness while on “stay at home order”
- Promptly responded to emergency leaks and repaired to District standards, to minimizing water loss during this emergency drought.
- Replaced 10 mainline valves
- Completed the annual valve exercise and flushing program.
- Installed/replaced 1500+ AMI radio meters.
- Properly maintained electric motors and pumps, minimizing down time and customer service interruption.
- Actively sought prospect well sites.
- Continued annual safety training programs.
- 650+ underground utility markings requested, with roughly 500 requiring street markings.
- Remained compliant with CDPH sampling regulations.
- Addressed graffiti on District property swiftly.
- Continued to diligently install, upgrade, maintain and repair a wide variety of critical distribution equipment to ensure reliable and efficient operations of the distribution system.
- Planned and exercised the Districts emergency response program.
- Continue to refine distribution systems operational practices to reduce costs and optimize water quality.

FY 2020 Field Staff Objectives

- Replace 1600+ AMI radio meters. Which will complete the remainder of the Districts automated meter reading system
- Replace 20+ mainline valves.
- Paint 250 fire hydrants
- Cla-Valve preventative maintenance.
- Continue to monitor pumping power cost and strategically set pumping schedules to maximize So Cal Edison power rates.
- Continue providing a safe workplace and conducting work practices safely.
- Maintain and monitor the District Solar field.
- Continue to develop the GIS map of the Districts infrastructure.
- Continue the annual valve exercising and flushing program.
- Update the Districts Employee Manual.
- Uphold exceptional interdepartmental cooperation through clear communication and promoting the understanding and respect of all staff’s contributions towards our shared mission.
- Continue to improve, maintain, and repair distribution infrastructure and facilities to ensure reliable and efficient performance.
- Perform two emergency response scenarios including all District staff.

- Continue Operator Certification advancement and training.
Utilize Elements software program to tract inventory and staff hours.

Conservation Department

The primary focus of our Water Conservation Program is to meet the goals of our Urban Water Management Plan and comply with the required reduction originally assigned in SB7x-7. This past year, we also worked diligently to further meet the additional demands in reduction, as called out in Executive Orders of Governor Jerry Brown and all ongoing and new regulatory mandates placed upon us. Since its inception, the idea of education and implementation for the customers to achieve success, has been a guiding objective. We work to create and disseminate information that will lead to effective conservation measures. These objectives have been met year after year through an ongoing public awareness campaign that includes flyers, billing inserts, special mailers, billboards, community events, education and outreach. Associated duties include: public relations such as speaking to other agencies or groups, developing pamphlets, booklets, flyers, brochures, and educational tools for the consumer, school/classroom visits and we are available to participate with Antelope Valley College and the Antelope Valley Water Partners for free workshops to focus on different relevant topics each month, and orchestrating all matters related to customer conservation.

FY 2020 Accomplishments

- Aggressive customer contact campaign that included blast texts, automated phone calls and emails to each customer providing current information about regulations with the objective of promoting customer awareness, education and “Making Conservation a California Way of Life.”
- Monthly bill inserts to keep customers up to date as regulations, events, programs, workshops, and changes occur throughout the year.
- Monthly billing envelope graphics that promote water efficiently, conservation tips, reminders about regulations and encouraging customers to read information enclosed.
- Monthly customer graphics on their bill, and by signing into our website, that allow the customer to monitor their current and past usage independently, to best manage their water allocation.
- Meter specific outreach on meters that alarm ‘leak alert’, coupled with coaching and directing customers to video assistance on our website in determining where the problem may be.
- Designed and distributed promotional literature and water quality report that featured conservation tips to all our customers. This information is available to the entire community on our website.
- Developed an elementary school program that correlates to the State Standards and to educating families how to be conservation minded, why water matters and where the water we provide comes from. Unfortunately, due to the Novel Coronavirus, we were only able to visit 3 of the 11 scheduled FY20.

- Helped customers in office and on the phone with efficient water use tips and tools, such as the waterlog.
- Offered customers the opportunity to come in for one on one help in understanding their water allocation, monthly percentages and tiers on their bill.
- Assisted customers in calculating their own water budget and finding conservation methods to help them reduce their use.
- Met with local landscapers with the common goal of successful conservation by partnered efforts.
- Shared conservation and drought information via email and telephone interviews with the local newspaper.

FY 2021 Objectives

A hard focus on smart technology this year will be a top priority. This 'live time data' can be of assistance to customers on both ends of the usage spectrum. Targeting those using outdoor irrigation, with smart water use tools we can advise them of a leak alarm, demonstrated live usage in consumption values and times. For customers that are not using irrigation water, but suddenly have an increase, or leak alarm, we can be proactive in reaching out to these customers. The savings in potential lost water is significant.

As in previous years, the ramping up of these same means found a receptive and inquisitive audience. Also, new promotions to keep reminding our customer base that while the drought state of emergency was rescinded, there is a chance we would enter Drought status again this summer. Consistent education of water awareness, responsible water uses and minimized waste will be front and center. As always, we are diligent in our efforts to come up with additional avenues to reach the customer and ensure they do not lose sight of the ongoing requirements to keep usage down.

- Through ongoing efforts, see consistent results for customer water conservation, with emphasis on "Making Water Conservation a California Way of Life" (Executive Order B-40-17).
- Maintain our diligent field efforts to ensure customers prevent water run-off, watering hardscape, watering within 48 hours of measurable rainfall, and "willful waste" is kept to a minimum or eliminated.
- Ongoing promotional literature and envelope carriers that feature conservation tips to all our customers.
- Continue school site visits, with emphasis on conservation education and why responsible use, individually and as a community is important.
- Plan, promote and carry out community events to ensure our information is reaching the widest range of customers.

- Maintain an open line of communication with our customers and local schools to ensure they are aware of the resources we offer, such as the water budget assistance, the use of a waterlog, conservation tips and educational items.
- Maintain good relationships with the other water agencies and landscapers in the community for ongoing the success.
- Complete our system conversion with smart meters, which will offer the technology to educate and coach our community towards self-monitoring water usage.

Source of Funds

Comparison of Source of Funds

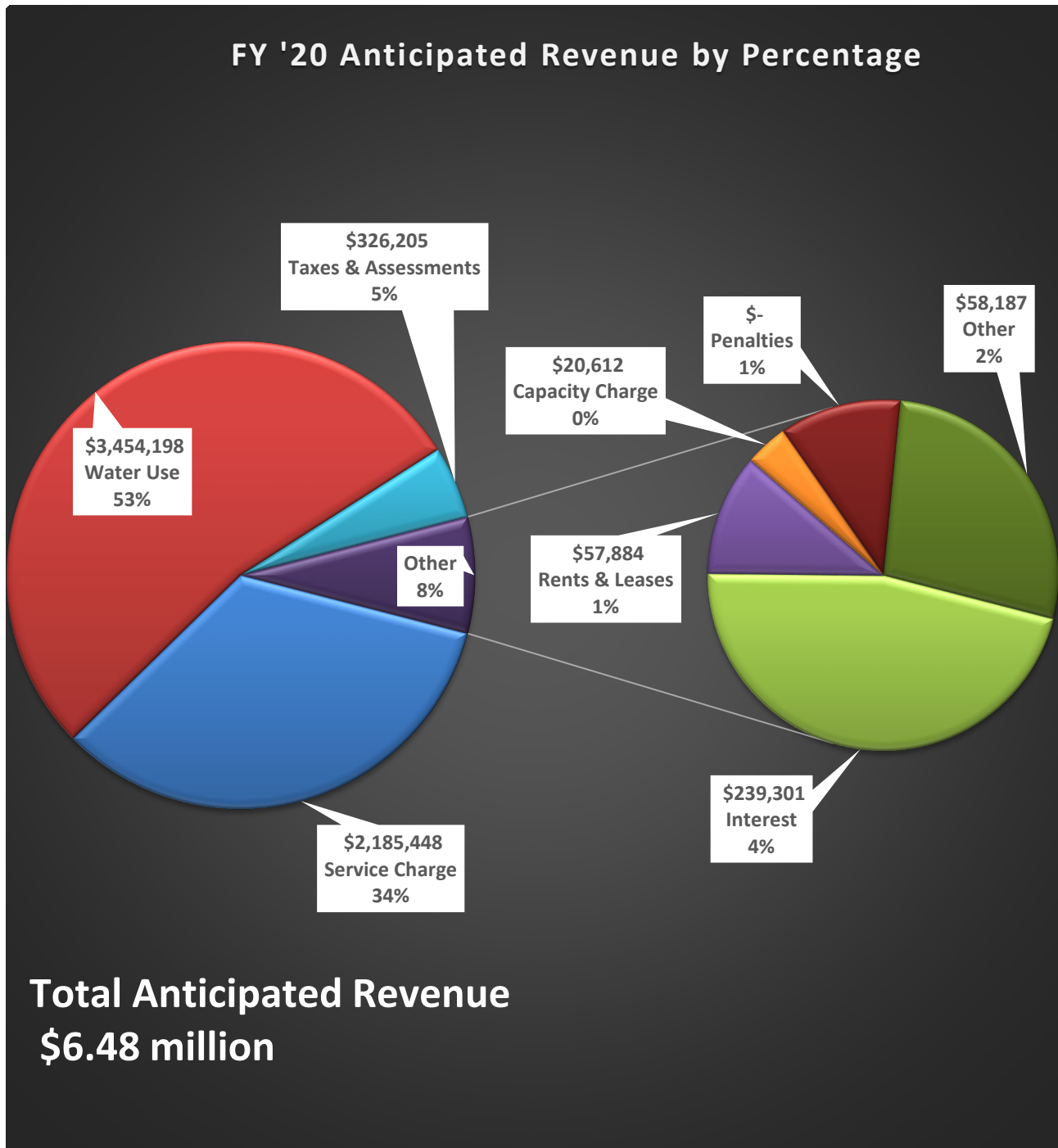


Figure 2 FY '20 Anticipated Revenue By Percentage

Revenues for FY'20 was down this year when compared to FY'19 due to the following reasons. First, interest during the 3rd and 4th quarters was significantly less than the prior two quarters. The County of Los Angeles Board of Supervisors also voted to delay the due-date of the property taxes which will result in these taxes not being realized during FY'20. However, the largest reason for anticipated revenues being lower is water sales were down by roughly 500acft or 12% reduction.

Table 3 Actual revenues from above and projected revenues

Revenue	Anticipated FY '20	Budget FY' 20	Proposed FY '21
Service Charge	\$ 2,185,448	\$ 2,312,911	\$ 2,311,111
Water Use	\$ 3,454,198	\$ 3,520,496	\$ 3,540,553
Interest	\$ 239,301	\$ 275,582	\$ 275,582
Rents & Leases	\$ 57,884	\$ 56,641	\$ 56,641
Taxes & Assessments	\$ 326,205	\$ 447,872	\$ 432,310
Capacity Charge	\$ 20,612	\$ 22,112	\$ 22,112
Conservation	\$ -	\$ -	\$ -
Fixed Asset Disposal	\$ -	\$ -	\$ -
Penalties	\$ 58,187	\$ 72,984	\$ 58,966
Other	\$ 143,043	\$ 58,346	\$ 168,873
Total	\$ 6,484,878	\$ 6,766,944	\$ 6,866,149

Operating

The operating costs are derived from two components that are charged on every bill the first is a flat service charge that is detailed in Appendix E. The second component of operating revenues is the amount of water in CCF (hundred cubic feet) that was used each month. The cost for one CCF is based on the cost of serving that unit of water Further details of how these charges were derived and maintained can be read in Appendix E.

Non-Operating

These funds are obtained from payments for services that Quartz Hill Water District renders on behalf of rate payers. Example of these include taxes collected by Los Angeles County, interest from investment accounts, door tags and rent collected for use of Quartz Hill Water District facilities and other such services.

Source of Funds Summary

Table 4 Quick Reference Statement of Cash Flow

Operating Revenue	Anticipated FY 20	Budget FY 20	Proposed FY 21
Service Charge	\$ 2,185,448	\$ 2,312,911	\$ 2,311,111
Water Sales	\$ 3,454,198	\$ 3,520,496	\$ 3,540,553
Other	\$ 845,233	\$ 1,194,921	\$ 1,014,485
Total	\$ 6,484,878	\$ 6,766,944	\$ 6,866,149
Operating Expenses			
Water Purchase	\$ 1,791,772	\$ 1,778,183	\$ 1,994,000
Transmission & Distribution	\$ 1,069,736	\$ 1,131,569	\$ 1,169,593
Customer Accounts	\$ 1,371,078	\$ 1,344,023	\$ 1,460,123
Administrative	\$ 305,391	\$ 316,072	\$ 328,109
Capital Improvements	\$ 762,102	\$ 1,000,000	\$ 500,000
Conservation	\$ 123,862	\$ 123,289	\$ 129,808
Total	\$ 5,423,940	\$ 5,693,137	\$ 5,581,633
Net Cash Flow	\$ 1,058,813	\$ 1,204,500	\$ 1,284,515
Depreciation	\$ 901,533	\$ 850,000	\$ 920,000
Post Employment Benefit (GASB 45)	\$ 180,395	\$ 180,395	\$ 180,395
Non-Cash Expenses	\$ 1,081,928	\$ 1,030,395	\$ 1,100,395
Net Operating Income/(Loss)	\$ (23,115)	\$ 174,105	\$ 184,120

During FY'20 several large capital projects were constructed/procured and have been put into service these are:

- Well 6a Arsenic Treatment Facility
- Emergency Generation at Operations Center
- Well 16 Repair and Rehabilitation
- Register swap on all remaining meters
- Additional radio equipment for meter reading

For the fiscal year ending June 30, 2018, the Governmental Accounting Standards Board has required implementation of its Statement Number 75: *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. The primary objective of this Statement is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB). It also improves information provided by state and local governmental employers about financial support for OPEB that is provided by other entities. This Statement results from a comprehensive review of the

effectiveness of existing standards of accounting and financial reporting for all postemployment benefits (pensions and OPEB) with regard to providing decision-useful information, supporting assessments of accountability and interperiod equity, and creating additional transparency. The application of this Statement may potentially impact the cash flow requirements of the District due to more aggressive funding requirements.

How We Stack Up

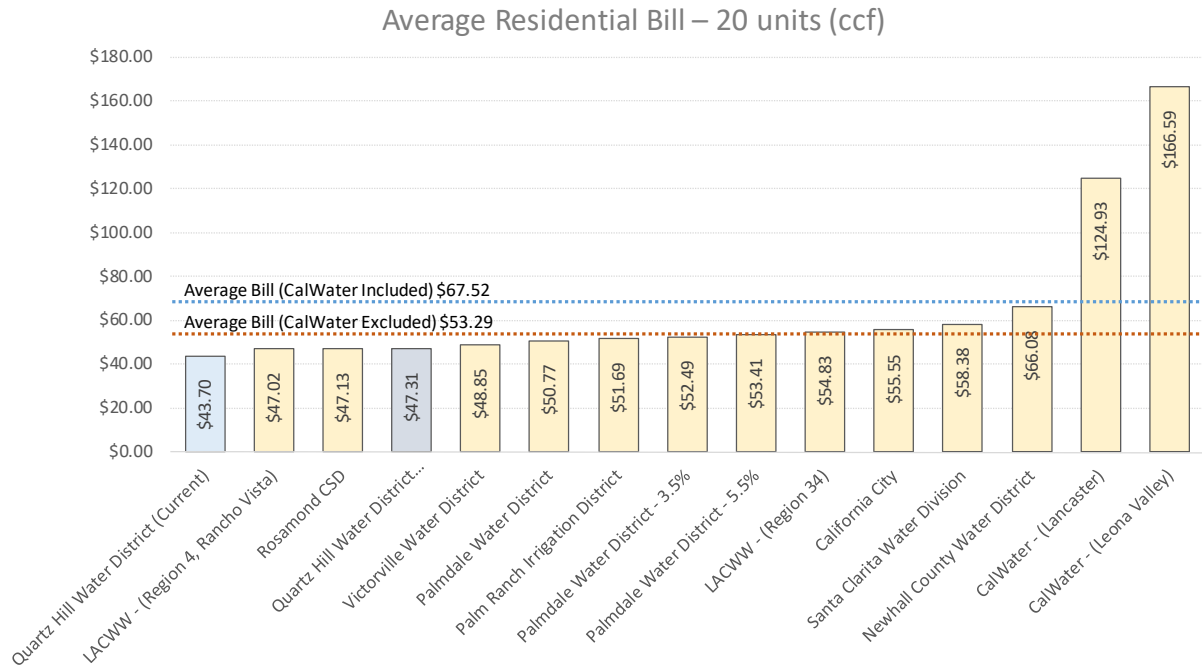


Figure 3 Average Residential Bill (Produced by Palmdale Water District)

Capacity Fees

Capacity Fees are for new water services in the District. The fees provide funds to build facilities needed to accommodate new development. These fees are as follows:

Table 5 Capacity Fee by meter size

Meter Size	Capacity Charge
.75"	\$4,903*
1"	\$9,806*
1.5"	\$14,709*
2"	\$24,515*
3"	\$39,224*
4"	\$83,351*
6"	\$161,799*
8"	\$259,859*

*Plus, the cost of one (or more) share in Water Bank (rate at time paid) to be a Water Replenishment Fee. As the increment of meter size increases, so does the relative number of shares required for replenishment. As of September 2013, it was \$3348

Meter Cost: Effective July 13, 2006 Regular Board Meeting

Table 6 Physical Meter Cost

Meter Size	Cost
3/4"	\$275
1"	\$330
1-1/2"	\$510
2"	\$700

Use of Funds

Use of Funds by Type

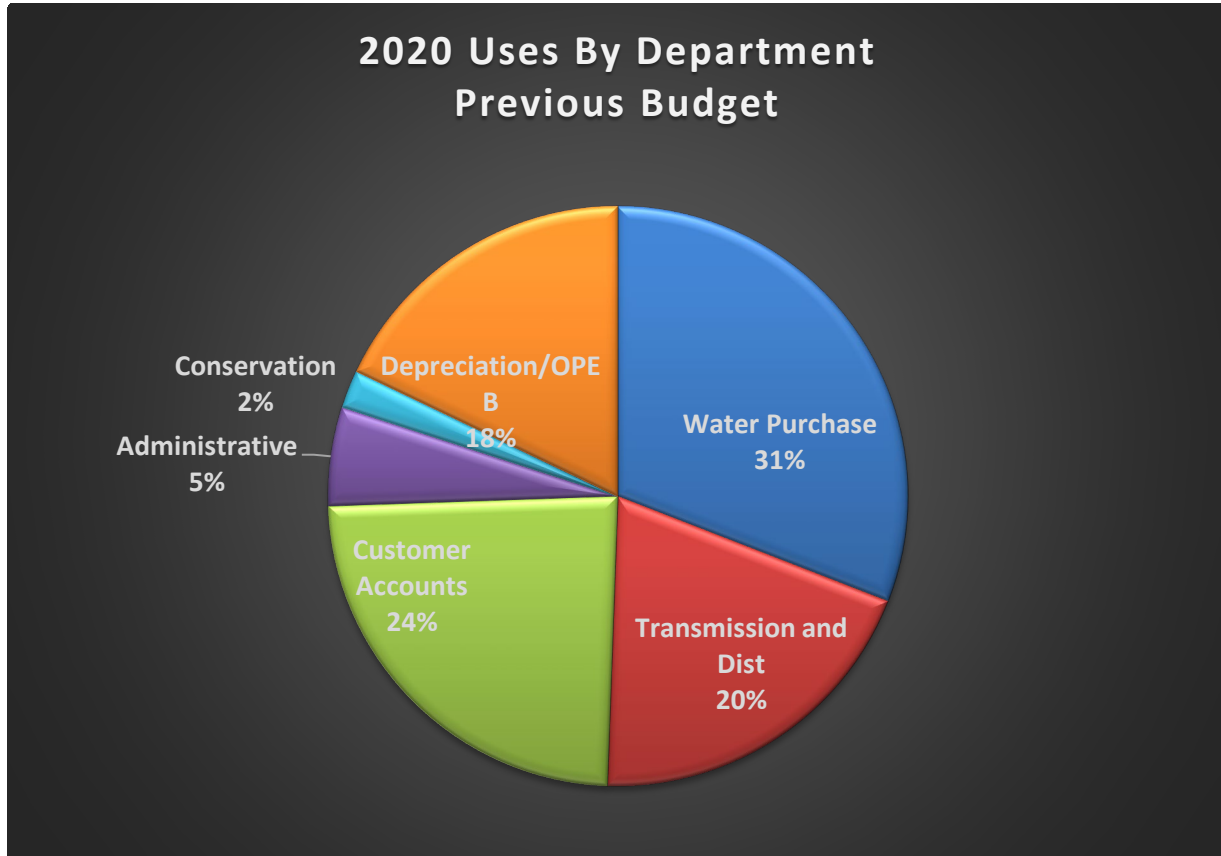


Figure 4 Fiscal Expenses by Department

Table 7 Expenses by Category

Department			
Department	Actual *	Previous Budget	Proposed Budget
Water Purchase	\$ 1,791,772	\$ 1,778,183	\$ 1,994,000
Transmission and Dist.	\$ 1,069,736	\$ 1,131,569	\$ 1,169,593
Customer Accounts	\$ 1,371,078	\$ 1,373,723	\$ 1,460,123
Administrative	\$ 305,391	\$ 316,072	\$ 328,109
Conservation	\$ 123,862	\$ 123,289	\$ 129,808
Depreciation/OPEB	\$ 1,081,928	\$ 1,030,395	\$ 1,100,395

* Estimated actuals as of 6/5/20

Comparison of Use of Funds by Type

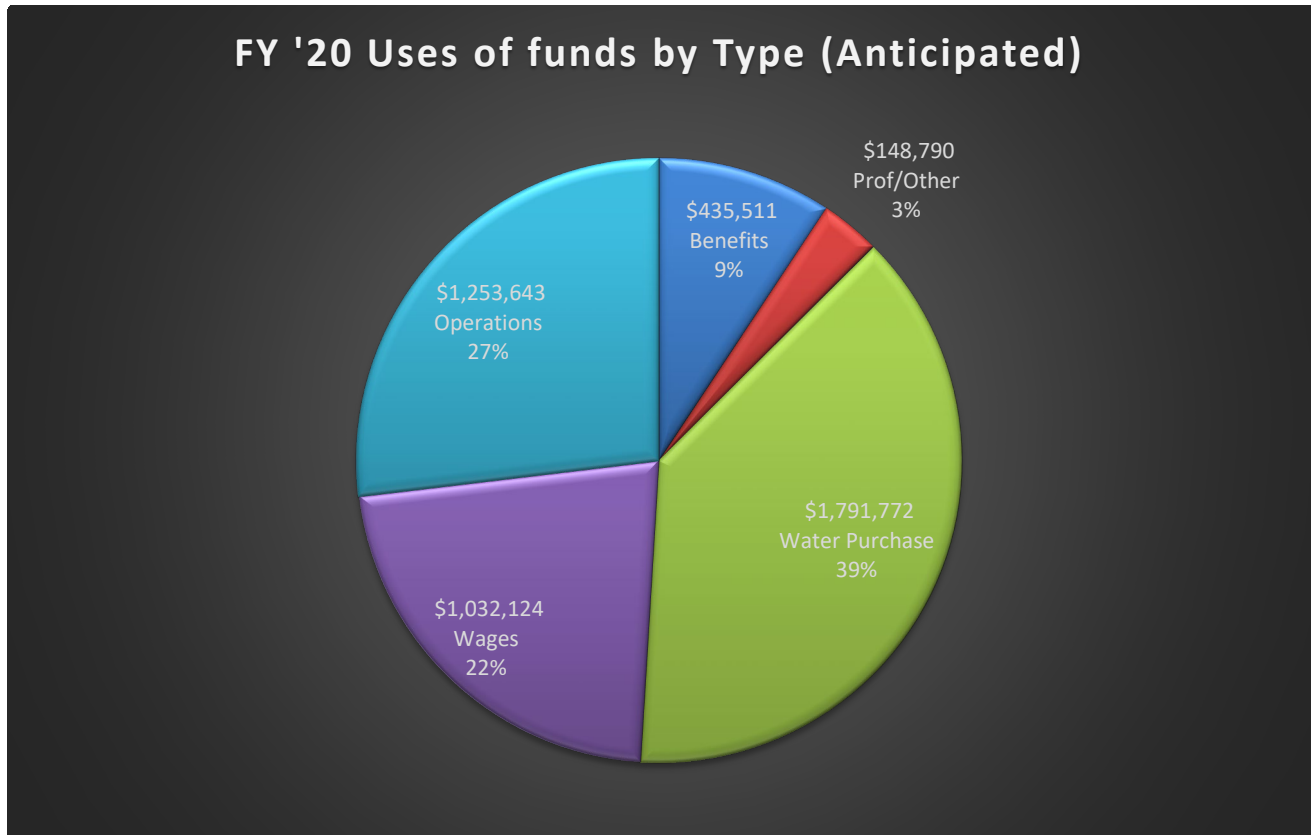


Figure 5 FY '20 Fiscal Use of Funds by Type

Table 8 Expenses by Category

Expenses

	Anticipated*	Previous Budget	Proposed Budget
Benefits	\$ 435,511	\$ 375,000	\$ 440,000
Prof/Other	\$ 148,790	\$ 172,000	\$ 160,000
Water Purchase	\$ 1,791,772	\$ 1,773,901	\$ 1,989,000
Wages	\$ 1,032,124	\$ 1,060,890	\$ 1,078,570
Operations	\$ 1,253,643	\$ 1,336,345	\$ 1,411,063
Total	\$ 4,661,839	\$ 4,718,136	\$ 5,078,633

* Estimated actuals as of 6/5/20

The years of mandated drought restrictions was evident as we started FY '20 with the lower than normal demand and we were trending upward for the past several years. However this calendar year has truly proven to be a change with roughly a 500acft reduction when compared to the same period during FY 20 to that of FY 19. Some higher than normal expenses this year are as follows:

- Water Purchases from AVEK 7.5% increase not the projected 5%
- Water Boards fees this year were significantly higher (\$23K)
- Health insurance \$37K higher than anticipated

Though there were some expenses that were higher than expected due to staff performing efficiently as detailed below, we are anticipating coming in under the projected expense budget by \$31K

Methods used to keep overall budget down

- Pumping more water during the ramp down process.
- Lower power cost due to Solar offsets
- Lower Wages due to fewer staff

Use of Funds by Department

The following Departments have been created to follow the Chart of Accounts as proposed by the State of California and definitions for the accounts are provided in the document “State Controller’s Uniform System of Accounts for Water Utility Districts”.

Table 9 List of Departments at QHWD

Departments	
1	Water Purchases
2	Pumping Plant
3	Transmission & Distribution
4	Customer Accounts
5	Administrative & General
6	Non-Cash
7	Conservation

For convenience in working with the new chart of accounts all accounts were organized into sub-categories that are denoted below. A definition for these categories are currently being developed/revised as need arises.

Table 10 Chart of Account Series for QHWD

ACCOUNT SERIES	
50	Accounts related to the purchase of water from supplier
51	Expenses related to fuel/power for fleet vehicles
52	Expenses related to Water Quality/Treatment/Maintenance
55	Expenses related to Repairs to all departments within the District
56	Safety Training/Maintenance of Safety Equipment and Purchase of Safety Supplies
60	Salaries & Wages and all accounts related to employee benefit costs
61	Finances-all accounts related to fees & banking/bad debt & misc cash expenses
62	Depreciation of Fixed assets & Loan Amortizaiton expense
63	Education-Expenses related to continuting education/seminars/training
64	Insurance-All insurance related to the District
65	Office-Expenses for office supplies/utilities/postage & miscellaneous
66	Professional services rendered/dues & subscriptions
67	Conservation-all epenses related to promoting conservation

Uses of Funds Summary

Table 11 Expanded Chart of Accounts with Expenses and previous year's details

Account Code	GL Description	Anticipated YTD* FY '20	Budget FY '20	Proposed FY '21
4000	Revenue-Construction	6,696	6,696	6,696
4045	Revenue-Water Bank	0	13,392	13,392
4060	Gain/Loss on Fixed Asset Disposal	0	0	0
4080	Gain/Loss on Investments	96,698	110,699	110,699
4090	Dividend Revenues	69,218	53,799	53,799
4100	Interest Revenues	170,083	221,783	221,783
4110	Rents & Leases	57,884	56,641	56,641
4130	Taxes & Assessments	326,205	447,872	432,310
4135	Revenue-Will Serve Letter	1,000	2,500	2,500
4140	Revenue-Returned Check Fee	1,245	1,170	1,170
4160	Revenue-Capacity Charge	19,612	19,612	19,612
4500	Revenue-Service Charge Residential	2,009,285	2,125,326	2,124,819
4510	Revenue-Service Charge Commercial	58,529	61,639	61,895
4520	Revenue-Service Charge Multi Dwelling	49,993	52,884	52,868
4530	Revenue-Service Charge Construction	1,382	10,240	1,461
4540	Revenue-Service Charge Irrigation	66,258	62,822	70,068
4600	Revenue - Water Use Residential	2,938,920	3,001,382	3,012,393
4610	Revenue-Water Usage Commercial	105,462	103,714	108,099
4620	Revenue-Water Usage-Multi Dwelling	241,455	227,997	247,491
4630	Revenue-Water Usage-Construction	1,086	426	1,113
4640	Revenue-Water Usage-Irrigation	167,275	186,977	171,457
4700	Revenue-Late Charges	52,867	67,678	53,660
4705	Revenue-Clean & Show	300	102	305
4720	Revenue-Fire Flow	900	1,929	914
4725	Revenue-Credit Report	80	81	81

4731	Revenue-Drought Surcharge	0	0	0
4735	Revenue-Conservation	0	0	0
4740	Revenue-Door Tag Charge	4,075	4,136	4,136
4750	Revenue-Set Up Hydrant Meter	505	86	513
4755	Revenue-Fine	0	0	0
4780	Revenue-Lock Cut/Missing	1,750	1,538	1,776
4800	Revenue-Door Tag/Disconnect/Reconnect Fee	32,955	53,242	33,449
4810	Repairs to Water System/Damage	0	0	0
4820	Revenue-New Meter	990	1,228	1,005
4840	Unannexed Services	44	45	45
4845	AVEK Conservation Grant	0	0	0
	other			
	Anticipated Revenue Subtotal	6,482,753	6,897,636	6,866,149
<u>EXPENSES</u>				
5000	Water Purchase AVEK	1,580,119	1,484,901	1,700,000
5010	Water Purchase-Los Angeles County	4,387	4,282	5,000
5100	Fuel Expense-Trucks	25,306	30,000	30,000
5105	Fuel Expense-Equipment	6,074	5,000	6,000
5200	Water Quality	12,614	24,000	24,000
5210	Water Quality Chemical Purchases	14,686	15,000	15,000
5305	Power	179,964	250,000	250,000
5400	Small Tool Purchases	2,636	9,000	9,000
5405	Small Equipment Purchase	427	4,000	4,000
5520	Repairs & Maintenance-System	165,653	205,000	205,000
5525	Repairs & Maintenance-Operations Center	19,772	15,000	20,000
5535	Repairs & Maintenance-Equipment	8,587	20,000	10,000
5545	Repairs & Maintenance-Trucks	14,053	20,000	20,000
5550	Repairs & Maintenance-Small Tools	0	1,500	1,500

5560	Equipment Rental	1,638	1,500	2,000
5600	Safety Supplies	10,398	8,000	10,000
5605	Safety Training/Compliance	25	1,000	1,000
6011	Director Compensation	1,200	8,000	8,000
6015	Director Expenses	279	3,000	3,000
6020	Board Meeting Wages	367	0	0
6030	Wages	1,032,124	1,060,890	1,078,570
6040	Payroll Tax Expense	74,334	80,000	80,000
6070	Pension Expense	155,837	145,000	160,000
6170	Write Off Bad Debt	0	1,500	0
6175	Merchant Fees/Banking	0	0	0
6180	Bank Fees	66,248	62,500	70,000
6190	Interest Expense	393,117	415,000	415,000
6330	Dues & Subscriptions	132,047	100,000	150,000
6340	Education/Seminars/Training	11,284	14,000	15,000
6405	Insurance-General Liability & Autos	34,033	0	35,000
6410	Insurance-Property	12,864	28,000	15,000
6415	Insurance-Employees	279,674	230,000	280,000
6416	Insurance-Director	4,010	5,000	5,000
6417	Insurance-Retiree	66,130	70,000	70,000
6420	Insurance-Workers Compensation	18,484	25,000	25,000
6500	Computer Expense	18,474	30,000	20,000
6505	Computer Expense-Out of Contract	0		0
6550	Office Expense	82,689	75,000	85,000
6560	Postage	34,839	30,000	35,000
6565	Utilities	17,926	16,000	18,000
6575	Travel/Meals/Parking/Mileage	7,060	12,000	8,000
6585	Trash Removal	1,375	2,000	1,500
6595	Telephone	12,823	20,000	13,000
6600	Public Relations	7,159	6,000	7,000
6615	Accounting	13,780	17,000	15,000
6625	Professional Services	71,327	85,000	75,000

6626	Professional Fees-Other	0	0	0
6630	Legal Services	33,624	40,000	40,000
6635	Legal Fees-Adjudication	30,059	30,000	30,000
6645	Licenses & Permits	705	1,000	1,000
6650	Security Expense	1,079	800	800
6655	Engineering Expense	0	0	0
6675	Medical Expense	550	500	500
6700	Rebates-/Purchases - Conservation	0	253	253
6715	Uniforms	0	6,500	6,500
	Capital Improvement Projects	762,102	2,500,000	500,000
	Expenses Subtotal	4,661,839	4,718,136	5,078,633
	Revenue Total	6,482,753	6,897,636	6,866,149
	Budgeted Total	1,820,915	2,179,500	1,787,515
6570	Pension Expense-Unfunded Liability			25,344
	Cash Total	1,058,813	2,179,500	1,812,859
6570	Pension Expense-Unfunded Liability			
6290	Depreciation	(901,533)	(850,000)	(920,000)
6418	OPEB Expense	(180,395)	(180,395)	(180,395)
	Total Expenses	(23,115)	1,149,105	712,464

*estimated actuals as of 06/05/2020

Table 12 Summary of Expenses for QHWD by Department

Department			
Department	Actual *	Previous Budget	Proposed Budget
Water Purchase	\$ 1,791,772	\$ 1,778,183	\$ 1,994,000
Transmission and Dist.	\$ 1,069,736	\$ 1,131,569	\$ 1,169,593
Customer Accounts	\$ 1,371,078	\$ 1,373,723	\$ 1,460,123
Administrative	\$ 305,391	\$ 316,072	\$ 328,109
Conservation	\$ 123,862	\$ 123,289	\$ 129,808
Depreciation/OPEB	\$ 1,081,928	\$ 1,030,395	\$ 1,100,395

*estimated actuals as of 06/05/2020

Additional summary of the Departments is attached (Appendix D).

New Assets

During FY 20 the following assets were added to QHWD:

- New Allegro registers
- New meter reading radio equipment
- 23 valves and associated parts

Due to warranty work and normal meter exchange program last year more than 1500 allegro registers were put in the ground. Which exceeded the normal 550 meters per a year. For this reason, the meter replacement program will be suspended for the next few years.

Due to aging valves in the system, staff presented the Board of Directors with the option of replacing approximately 23 valves throughout the District per a year. This project allowed staff to perform preemptive work versus reactive work. This method of work is not only cheaper for the District (scheduled during regular shift) but also has a significantly better response with customers of QHWD so they can plan for outages and less water is wasted as compared to failed valves.

Description of Funds

Fund 01 Facilities Replacement

All District owned asset(s) and available reserves are stored/housed in this fund. This Fund is used to replace existing asset(s) and repair existing asset(s). This Fund will also procure new equipment that is deemed necessary by the Board of Directors. All available funds in this Fund are unencumbered. The sources of funds for this Fund is from Taxes (Fund 05), and the Rate Structure (Fund 04)

Fund 02 Emergency Replacement

No long-term assets are stored in this Fund and only a sufficient amount of money will be stored in this Fund to address potential emergencies. The amount of cash is to be determined by the Board of Directors.

Fund 03 Capacity

No assets will be stored in this Fund and all money in this Fund is encumbered and can only be used on projects that effect the available capacity and future capacity. The source of funds for this Fund come from new customers hooking up to the District's water system.

Fund 04 General Operations

No Assets will be stored in this Fund and cash in this Fund is for the day/day running of the District. The source of funding for this Fund is from operating revenue and from some non-operating revenue sources.

Fund 05 Property Taxes

No Assets will be stored in this Fund and cash in this Fund should be moved biannually to Fund 01.

Fund 06 Construction

No assets will be stored in this Fund and the cash within this fund will be used for construction related projects.

Fund 07 Conservation

No assets will be stored in this Fund and the cash within this Fund will be used for conservation programs and public outreach.

Fund 08 Water Bank

The water in the water bank (asset) will be stored in this Fund and any additional monies collected with water replenishment fee.

Summary Budget Expenditure Request

Safety and Planning Documents

During FY '21 staff will be asking the Board to Directors to approve a third-party consultant perform a 5-year rate analysis and incorporate our capital improvement plan into this process.

- Update the Employee Handbook.
- Continual training for all District sites and field personnel.
- Update and replace Confined Space Personal Protective Equipment (PPE).

New Equipment

As we have continued utilizing the asset management software, it has become apparent that the District will need to purchase an Industrial Asset Tag Printer to ensure proper equipment is being referenced when updating schedules. Due to the Operations Center and well 5a being the more expensive electrical bills, staff would recommend using solar at these facilities to lower the bill.

- Asset Tag Printer
- Solar array at the Operations Center
- Solar array at Well 5a
- TBA

Replacement Equipment

While performing the budget process, it has become apparent that the following equipment is either missing/broken or ending its useful term of life. Staff will need to perform additional analysis to determine the order the request will be put forward to the Board of Directors and if the items will exceed the General Managers \$5000.00 spending allotment:

- SCADA Hardware and software (\$130K)
- Field Servicemen Truck (Replace Truck 4014)
 - Truck 4014 has 140K miles and is 15 years old. Little items are starting to fail on this truck and has had increased maintenance issues associated with years of usage.
- TBA

New Capital Projects

Capital Expenses are payments by a business for fixed assets, like buildings and equipment. Capital expenses are not used for ordinary day-to-day operating expenses of a business, like rent, utilities, and insurance.

Another way to consider capital expenses is that they are used to buy assets that have a useful life of more than one year.

I.E. (If you buy office supplies for your business, that purchase is an operating expense, because office supplies don't typically last more than one year). On the other hand, if computers are purchased for Board of Directors, it is expected that they will last longer than a year, so you are buying a short-term asset and that purchase is considered a capital expense.

- Solar array at Operations Centers (2019/2020)
- Well 5A Solar Array (2018-2020)

Replacement Capital Projects

- Valve and Hydrant Replacement (Ongoing)
- Meter Replacement (Ongoing)
- Rehab two wells (2020,2021)

The Distribution system of Quartz Hill Water District is the single largest asset on the book; for this reason, staff has and will continue to replace faulty and worn out equipment to keep the entire system in an operable state at all times. During this past year, staff has primarily focused on valve/Hydrant Replacement and Meter Replacement to ensure a state of readiness and fiscal responsibility.

Table 13 QHWD Capital Improvement Projects summary by Budget Year

Project Expense Summary Budget Year Amount			
Item	2018	2019	2020
Studies/Planning/Safety	\$ 20,000	\$ 20,000	\$ 20,000
New Equipment	\$ 15,000	\$ 14,000	\$ 20,000
Replacement equipment	\$ 60,000	\$ -	\$ 15,000
New Capital Projects		\$ 250,000	\$ 1,000,000
Replacement Capital Projects	\$ 198,000	\$ 100,000	\$ 40,000
Total	\$ 293,000	\$ 384,000	\$ 1,095,000
3-yr Total	\$ 1,772,000		

APPENDIXES

APPENDIX A Asset Management Policy

Resolution 13-0612A

RESOLUTION OF BOARD OF DIRECTORS OF QUARTZ HILL WATER DISTRICT ADOPTING A CAPITAL ASSET ACCOUNTING POLICY

WHEREAS, the auditors of Quartz Hill Water district have recommended the adoption of a uniform policy addressing the types of assets to be capitalized and the values at which such assets are capitalized, and

WHEREAS, the District's financial consultants have assisted in the preparation of a uniform policy in response to the recommendation from the District's auditors;

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Quartz Hill Water District hereby adopts the Capital Asset Accounting Policy attached hereto as Exhibit "A".

ADOPTED this 20th day of June, 2013.

Allen G. Flick, Sr., President of the Board
Quartz Hill Water District

ATTESTED:

__Signed Original in Office_____
Debi Pizzo, Secretary of the Board
Quartz Hill Water District

Quartz Hill Water District Capital Asset Accounting Policy

Appendix M Policies, Procedures, Rules, Regulations

Capital Asset Policy

A. General—It is essential for both financial statement and cost accounting purposes that all departments of the Quartz Hill Water District follow a uniform policy with respect to the types of expenditures capitalized and the values at which expenditures are capitalized. When there is any doubt as to the proper treatment of possible capital expenditures, contact the Administrative Supervisor.

B. Capitalization Policy

1. Land. All land purchases, regardless of cost, are capitalized. When land is acquired with a building, an allocation should be made for each individually. Typically, a recent appraised value with specific amounts for land and structure can be used for this allocation. This ration should be applied to the purchase price to determine the capitalized amount.
2. Buildings.
 - a. New buildings are capitalized at the sum of transactions deemed to be directly related to the construction of the building upon notification the building is completed and available for occupancy. \$5,000.
 - b. A renovation or building addition is capital when it enhances the use or efficiency of the building. This amount is generally capitalized over the remaining useful life of the building. If the building is fully depreciated, the renovation will be capitalized for 10-30 years based on input from accounting personnel or consultants, if necessary. The capitalized amount recognized is the total cost of the renovation/addition project less any movable equipment expense and other incidental expenses incurred during the project. Incidental expenses are deemed to be those which do not lend to the enhancement or extension of the building life (e.g., moving and storage costs).
 - c. Land Improvements. This category includes roads, curbs, walkways, parking lots Streetlights, landscaping, wells, irrigation systems, drainage systems, fences, boundary signs, directional signage, and similar items. Items in this category will be capitalized if they have capitalized value of at least \$5,000 and are durable.
 - d. Other Assets Attached to the Buildings. Items in this category will be capitalized if they have capitalized value of at least \$5,000 and are durable. Examples include building systems and fixed equipment. Building systems include such items as elevators, HVAC units, and fire prevention systems. Fixed equipment includes items physically attached to the building that are not utilized by the whole building.

- e. Movable Assets. This category includes vehicles, furniture, software, and equipment that are not a part of a building. Movable assets are capitalized at the invoiced cost, (plus any applicable transportation and installation charges) if they meet the following criteria:
 - i. Have capitalized value of \$1,000 or more;
 - ii. Are durable (an economic estimated useful life of more than one year);
 - iii. Are free standing and moveable (not permanently affixed to a building or structure).
- 3. Small and Attractive Assets. Assets valued at less than \$5,000 that are defined as high risk for theft. These assets are not normally consumed within one year. These assets may include items in one or more of the following categories:
 - a. Portable and marketable, either alone or as a component unit.
 - b. Assets that can be utilized for personal gain.
 - a. Assets repeatedly reported as lost and/or stolen within the industry and society.
- 4. Construction in Progress. Construction in progress accounts will be used as cost accumulation centers. Projects that accumulate costs that are non-capital expenditures.
- 5. Should be cleared out and expensed before the fiscal year is closed. Projects that accumulate costs that are capital expenditures will be categorized into the appropriate.
- 6. Capital asset classification and capitalized in the year the project is complete. Projects that primarily contain capital expenditures but have some non-capital items associated with the project will be capitalized and expensed as appropriated in the year the project is completed.
- 7. Amount to be capitalized. The costs values to be capitalized for capital assets are outlined below: (Please not these lists are examples and may not be all inclusive of appropriate items to capitalize.)
- 8. Land:
 - a. -Original contract price
 - b. -Brokers' commissions
 - c. -Legal fees for examining and recording title
 - d. -Cost of title guarantee insurance policies
 - e. -Cost of real estate surveys
 - f. -Cost of an option when it is exercised
 - g. -Special paving assessments
 - h. -Cost of razing an old building existing when the land is originally acquired
 - i. -Cost of cancellation of unexpired lease
 - j. -Payment of noncurrent taxes accrued on the land at date of purchase if payable
 - k. by Purchaser.
- 9. Buildings:

- a. -Original contract price or cost of construction
 - b. -Expenses incurred in remodeling, reconditioning or altering a purchased building to make it available for the purpose for which it was acquired.
 - c. -Cost of excavation or grading or filling of land for the specific building.
 - d. -Expenses incurred for the preparation of plans, specifications, blueprints, etc.
 - e. -Cost of building permits
 - f. -Payment of noncurrent taxes accrued on the building and date of purchase if payable by purchaser
 - g. -Architects' and engineers' fees for design and supervision.
 - h. -Costs of temporary buildings used during the construction period.
10. Machinery and equipment:
- a. -Original contract or invoice cost
 - b. -Freight, cartage, import duties, handling, and storage costs
 - c. -Specific in-transit insurance charges
 - d. -Sales, use, and other taxes imposed on the purchase.
 - e. -Costs of preparation of foundations and other costs in connection with making a proper site for the assets.
 - f. -Installation charges.
 - g. -Costs for reconditioning used equipment to make it usable for the purpose it was purchased.
11. Construction in progress:
- a. -Direct material
 - b. -Direct labor
 - c. -Direct professional services
 - d. -Permits and fees
 - e. -Internal labor costs incrementally identified to the specific project and appropriately tracked and documented.
12. Donated assets:
- a. Donated Capital Assets should be recorded at their estimated fair value at the time of acquisition.
13. Small and Attractive Assets:
- a. All assets costing less than \$5,000 do not meet the District's capitalization threshold policy, but are considered assets for the purpose of marking and identification, record keeping, and tracking. Exceptions to this policy are hydrants and water service, which have not cost threshold.
14. D. Amounts not to be capitalized – following are types of expenditures that should not be recorded as Capital Assets (not all inclusive):
- a. Costs relating to the removal or demolition of buildings, structures, equipment or other facilities. The two exceptions are as follows:
 - 1. The cost to remove or demolish a building, structure existing at the time of acquisition of land with the intention of removal or

demolition to accommodate its intended use (such cost is considered a part of the cost of the new capital projects).

- b. The cost of relocating a facility including the cost of relocating the personnel. The cost of equipment rearrangement within a facility or the transfer of individual assets from one location to another should also be expensed.
 - c. Administrative and executive salaries even though a portion of such salary costs are related to fixed asset acquisitions.
 - d. Costs incurred on assets that were not purchased, e.g., surveying, title searches, legal fees, and other expert services on land not purchased.
 - e. Extraordinary costs incidental to the construction of Capital Assets such as those due to strike, flood, fire or other casualties.
15. The cost of abandoned construction.
16. The costs of normal repairs and maintenance that do not add to the value or extend the lives of assets materially are not capitalized, but are shown as expenses in the year incurred.

E. Asset Types and Most Common Useful Lives:

Type Classification Description Useful Life

Capital assets are depreciated using the straight-line method over the following estimated useful lives:

Plant and Facilities	20-75 Years
Furniture and Equipment	3-10 Years
Trucks and Automobiles	5 Years

Capital Asset Definition of Terms

The following definitions, which relate specifically to the accounting for capital assets, are presented below to afford a better understanding of the capital asset policy.

Definitions for Capital Expenditures

1. Newly acquired item.
2. Replacement of complete units.
3. Rebuilt equipment if the rebuilding project effectively restores to like-new condition and/or significantly extends the items useful life or markedly increases the items net book value.
4. Accessory equipment should be considered as a portion of the capitalized value of accessory equipment, which was purchased with the intent of using it interchangeably with two or more items, should be capitalized and recorded as a separate item of equipment.
5. Accessory equipment, which is acquired subsequent to the purchase of the parent item, must have the capitalization criteria applied to it separately. These criteria will determine if the item is to be expensed or capitalized.

Definitions for Non-Capital Expenditures

1. Expenditures for repairs, maintenance or replacement of component parts which do not extend the unit's original life or significantly enhance its net value.
2. Expenditures incurred in demolishing or dismantling equipment including those expenditures related to the replacement of units or systems.
3. Expenditures incurred in connection with the rearrangement, transfer, or moving of capitalized items from one location to another, including expenditures incurred in dismantling, transporting, reassembling, and reinstalling such items in a new location.

Noncapital costs, such as those listed above, are expenses as incurred.

Moveable Assets

Consists of vehicles and software, as well as furniture and equipment that are not part of the supporting structure of a building and that meet the specific criteria for capital assets.

Fixed Assets

Fixed assets consist of land, land improvements, buildings, building systems, leasehold improvements, and fixed equipment including new construction, alterations and renovation projects that meet the specific criteria for fixed capital assets.

Depreciation

Depreciation is the process of allocating the cost of a capital asset over a period of time benefitted by the use of that asset, rather than deducting the cost of the asset as an expense in the year of acquisition. A capital asset is depreciated over its estimated useful life, which is meant to be an indication of the number of year that an asset will be used for the purpose for which was purchased.

Accumulated Depreciation

Accumulated depreciation equals the total amount of depreciation recognized for a capital asset since it was initially put in use.

Net Book Value

Net book value represents the capitalized value of an item less Accumulated Depreciation.

Repairs and Maintenance

Repairs and maintenance are costs to keep equipment operating for normal use that may be recurring and regular in nature. Such costs include the replacement of any existing parts of components and any repairs that do not extend the useful life of the existing asset. Any expenditure meeting the above guidelines will be treated as repairs and will not be capitalized by the property management system.

Component Parts

Component Parts are any part of a unit of equipment that cannot be used independently of the remaining piece of equipment. This definition will apply even though the component part may cost more than \$5,000 and have a useful life of more than one year. For property management purposes, component parts are not identified separately, but are capitalized with the system of which they are a part.

District Constructed Assets

Assets constructed by the District are made up of multiple components parts both above and below the capitalization threshold. The department generally uses a construction in progress account number to capture all the expenses related to the item. Upon completion, they collaborate with the General Manager, accounting staff or consultants to determine a description, in service date, estimated useful life and final capitalized amount for the item.

APPENDIX B California Water Code- Sections 370-374

CALIFORNIA WATER CODE

SECTION 370-374

(Copied from original posted at <http://www.leginfo.ca.gov/calaw.html>)

370. The Legislature hereby finds and declares all of the following:

(a) The use of allocation-based conservation water pricing by public entities that sell and distribute water is one effective means by which waste or unreasonable use of water can be prevented and water can be saved in the interest of the people and for the public welfare, within the contemplation of Section 2 of Article X of the California Constitution.

(b) It is in the best interest of the people of California to encourage public entities to voluntarily use allocation-based conservation water pricing, tailored to local needs and conditions, as a means of increasing efficient uses of water, and further discouraging wasteful or unreasonable use of water under both normal and dry-year hydrologic conditions.

(c) The Legislature intends that allocation-based conservation water pricing is an alternative method that can be used by public entities to encourage water users to conserve water, increase efficient uses of water, and further discourage waste of water. The Legislature does not intend to limit the discretion of public entities to evaluate and select among different methods for conserving water or to create a presumption that the election to not use a particular method is a waste or unreasonable use of water by the public entity.

(d) Nothing in this chapter is intended to limit, or dictate, the design of rate structures that public entities may use to promote conservation by water users.

(e) Nothing in this chapter directs, or otherwise compels, a public entity to use allocation based conservation water pricing.

371. For purposes of this chapter, the following terms have the following meanings:

(a) "Allocation-based conservation water pricing" means a retail water rate structure that meets all of the criteria in Section 372.

(b) "Basic charge" means a volumetric unit charge for the cost of water service other than any fixed costs that are recovered through meter charges or other fixed charges other than incremental costs that are recovered through conservation charges. A basic charge may include the cost of generally applicable conservation measures assumed in establishing basic use allocations.

(c) "Conservation charge" means a volumetric unit charge for incremental costs.

(d) "Incremental costs" means the costs of water service, including capital costs, that the public entity incurs directly, or by contract, as a result of the use of water in excess of the basic use allocation or to

implement water conservation or demand management measures employed to increase efficient uses of water, and further discourage the wasteful or unreasonable use of water, and may include any of the following:

(1) Conservation best management practices, conservation education, irrigation controls and other conservation devices, and other demand management measures.

(2) Water system retrofitting, dual plumbing and facilities for production, distribution, and all uses of recycled water and other alternative water supplies.

(3) Projects and programs for prevention, control, or treatment of the run off of water from irrigation and other outdoor water uses. Incremental costs shall not include the costs of storm water management systems and programs.

(4) Securing dry-year water supply arrangements.

(5) Procuring water supplies to satisfy increments of water use in excess of the basic use allocations for the customers of the public entity, including supply or capacity contracts for water supply rights or entitlements and related energy costs for water delivery.

(e) "Public entity" means a city, whether general law or chartered, county, city and county, special district, agency, authority, any other municipal public corporation or district, or any other political subdivision of the state that provides retail water service and that is an urban water supplier, as defined in Section 10617.

372. A public entity may employ allocation-based conservation water pricing that meets all of the following criteria:

(1) Billing is based on metered water use.

(2) A basic use allocation is established for each customer account that provides a reasonable amount of water for the customer's needs and property characteristics. Factors used to determine the basic use allocation may include, but are not limited to, the number of occupants, the type or classification of use, the size of lot or irrigated area, and the local climate data for the billing period. Nothing in this chapter prohibits a customer of the public entity from challenging whether the basic use allocation established for that customer's account is reasonable under the circumstances. Nothing in this chapter is intended to permit public entities to limit the use of property through the establishment of a basic use allocation.

(3) A basic charge is imposed for all water used within the customer's basic use allocation, except that at the option of the public entity, a lower rate may be applied to any portion of the basic use allocation that the public entity has determined to represent superior or more than reasonable conservation efforts.

(4) A conservation charge shall be imposed on all increments of water use in excess of the basic use allocation. The increments may be fixed or may be determined on a percentage or any other basis,

without limitation on the number of increments, or any requirement that the increments or conservation charges be sized, or ascend uniformly, or in a specified relationship. The volumetric prices for the lowest through the highest priced increments shall be established in an ascending relationship that is economically structured to encourage conservation and reduce the inefficient use of water, consistent with Section 2 of Article X of the California Constitution.

(b) (1) Except as specified in subdivision (a), the design of an allocation-based conservation pricing rate structure shall be determined in the discretion of the public entity.

(2) The public entity may impose meter charges or other fixed charges to recover fixed costs of water service in addition to the allocation-based conservation pricing rate structure.

(c) A public entity may use one or more allocation-based conservation water pricing structures for any class of municipal or other service that the public entity provides.

373. (a) Revenues derived from allocation-based conservation water pricing shall not exceed the reasonable cost of water service including basic costs and incremental costs. This chapter does not limit the sources of funding for incremental costs to charges for water use.

(b) Revenues derived from allocation-based conservation water pricing shall not exceed the proportional cost of service attributable to the customer's parcel, as determined by giving consideration to all of the following:

(1) Customer classes established in consideration of service characteristics, demand patterns, and other factors.

(2) Basic use allocations.

(3) Meter size.

(4) Metered volume of water consumed.

(5) The public entity's discretionary allocation of incremental costs between and among the increments of water use subject to conservation charges, as permitted by paragraph (4) of subdivision (a) of Section 372 to meet the requirement of that section.

(c) In establishing the schedule of charges and metered volumes for the increments of water use subject to conservation charges, the public entity may also consider both of the following:

(1) Customer overuse characteristics, including ratios between overuse volumes and basic use allocations, variations in demand and consumption patterns, or other characteristics of overuse experienced by the public entity.

(2) The extent to which the pricing structure of the increments will be effective in minimizing or eliminating the need for other measures to curtail potential overuse.

374. (a) Allocation-based conservation water pricing under this chapter may be used on an ongoing basis and shall not require any finding of emergency or other water shortage conditions.

(b) The authority granted in this chapter is in addition to any other authority that a public entity has to use rate structure design to foster the conservation of water.

(c) The imposition and revision of rates and charges by a public entity under this chapter shall be subject to the procedures otherwise required by law for the public entity's water rates.

APPENDIX C Glossary

- ACH** Automated Clearing House (ACH) is an electronic network for financial transactions in the United States. ACH processes large volumes of credit and debit transactions in batches. At the District, we are receiving bill payments for customers through Metavante.
- ACWA** Association of California Water Agencies – Association of California Water Agencies represents and provides key services to its members. From legislation, to regulatory activity, to broad policy issues, ACWA is on the front lines in Sacramento and in Washington, D.C. as a constant and respected advocate for California’s public water agencies. ACWA’s involvement at the state and federal level has helped shape laws and policies that affect ACWA member agencies and their customers. (<http://www.acwa.com>)
- AWWA** American Water Works Association – Agency that is the authoritative resource on safe water, sharing knowledge on water resource development, water and wastewater treatment technology, water storage and distribution, and utility management and operations. AWWA provides knowledge, information and advocacy to improve the quality and supply of water in North America and beyond and advances public health, safety and welfare by uniting the efforts of the full spectrum of the water community. (<http://www.awwa.org>)
- BMP** A Best Management Practice (BMP) is a practice or combination of practices determined to be the most effective, practicable means for protecting natural resources.
- CalPERS** See PERS
- CAP** Capital Expense - Funds used by the District to acquire or upgrade physical assets such as property, industrial buildings or equipment. This type of outlay is made by the District to maintain or increase the scope of their operations. These expenditures can include everything from repairing a roof to building a brand new booster site.
- CDPH** California Department of Public Health – State agency that oversees and regulates the public drinking water systems. This includes the certification and licensing of water treatment and distribution system operators. (<http://www.cdph.ca.gov>)
- CEQA** California Environmental Quality Act - The California Environmental Quality Act is a California law (California Public Resources Code section 21000 et seq.) passed in 1970, shortly after the Federal Government passed the National Environmental Policy Act. CEQA does not directly regulate land uses, but instead requires development projects submit documentation of their potential environmental impact. (<http://ceres.ca.gov/ceqa>)
- CIF** Capital Improvement Fee – Capital improvement fees were established to provide funds for the construction of District facilities to meet water demands. These fees are collected from developers so they can contribute toward the cost of construction of these future facilities as specified by the District’s Master Plan.
- CSDA** California Special Districts Association – California Special Districts Association is the recognized voice for all special districts. CSDA provides advocacy, outreach and member services, while

educating policy makers and the public on the vital importance of local services provided by special districts in California. (<http://www.csda.net>)

- CUWCC The California Urban Water Conservation Council was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The Council's goal is to integrate urban water conservation Best Management Practices into the planning and management of California's water resources.
- DWR California Department of Water Resources – State agency that oversees the operation of the State Water Project (SWP). (<http://www.water.ca.gov>)
- DBP Disinfection By-Products are potentially toxic chemical compounds that are formed in extremely low concentrations during the disinfection of water supplies.
- EIR Environmental Impact Report – An EIR is a public document used by a government agency to analyze environmental effects of a proposed project. It also allows for the identification of alternatives and to disclose possible ways to reduce or avoid possible environmental damage.
- EIS Environmental Impact Study – See EIR
- EPA Environmental Protection Agency – The federal agency responsible for setting and enforcing water quality standards.
- ET Evapotranspiration, or "ET," is the combination of water that is lost from the soil through evaporation and through transpiration from plants as a part of their metabolic processes. "ET" is simply the amount of water needed by a particular plant, tree, or turf grass.
- GASB Governmental Accounting Standards Board – The Governmental Accounting Standards Board exists to establish and improve standards of state and local governmental accounting and financial reporting. By doing this, the result is useful information for users of financial reports and guide and educate the public, including issuers, auditors, and users of those financial reports. (<http://www.gasb.org>)
- GIS Geographical Information System – Geographical information system captures, stores, analyzes, manages, and presents data that is linked to location. Technically, a GIS is a system, which includes mapping software and its application to remote sensing, land surveying, aerial photography, mathematics, photogrammetry, geography, and tools that can be implemented with GIS software.
- MOU Memorandum of Understanding is a document describing a bilateral or multilateral agreement between parties. It expresses a convergence of will between the parties, indicating an intended common line of action.
- MTBE Methyl tertiary-butyl ether (MTBE) is a chemical compound that is manufactured by the chemical reaction of methanol and isobutylene. MTBE is produced is almost exclusively used as a fuel additive in motor gasoline.
- O&M Operations and Maintenance – Operations and Maintenance are the activities related to the performance of routine, preventive, predictive, scheduled, and unscheduled actions aimed at

preventing equipment failure or decline with the goal of increasing efficiency, reliability, and safety.

OPEB Other Post-Employment Benefits – Other Post-Employment Benefits obligations are primarily for retiree health care costs but also can include other benefits such as insurance.

PERS/CalPERS

California Public Employees' Retirement System – The State retirement system covering Palmdale Water District employees and retirees. The retirement program provides retirement income levels dependent on age and length of participation.

SCADA Supervisory Control and Data Acquisition is a system that collects data from various sensors at a factory, plant or in other remote locations and then sends this data to a central computer, which then manages and controls the data.

SWC The State Water Contractors is a non-profit association of 27 public agencies from Northern, Central and Southern California that purchase water under contract from the California State Water Project. (<http://www.swc.org>)

SWP California State Water Project – Administered by the Department of Water Resources (DWR), the State Water Project is the nation's largest state-built water and power development and conveyance system. Its purpose is to deliver water, control flooding, generate power, provide recreational opportunities, and enhance habitats for fish and wildlife.

TTHM Trihalomethanes (THM) are a group of four chemicals that are formed along with other disinfection byproducts when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The EPA is in charge of regulating the total trihalomethanes (TTHM) at a maximum allowable annual average in drinking water.

VOC Volatile Organic Compounds are ground-water contaminants of concern because of very large environmental releases, human toxicity, and a tendency for some compounds to persist in and migrate with ground-water to drinking-water supply wells.

APPENDIX D 2016 Water Financial Plan and Cost-of-Service Study Report

May 17, 2016

Mr. Chad Reed
General Manager
Quartz Hill Water District
5034 W Avenue L
Quartz Hill, CA 93536

Subject: 2016 Water Financial Plan and Cost-of-Service Study Report

Dear Mr. Reed,

Sincerely,

James Lee, Principal

Urban Futures, Inc.

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I. INTRODUCTION

Quartz Hill Water District (District) is governed by a five-member Board of Directors elected at large. The General Manager is the Chief Executive Officer and reports directly to the Board, executing the Board's policies and directives and providing the Board recommendations for all matters. The District was formed in 1954 with three wells and 5,000 gallons of storage. Over 62 years, the District has grown to serve approximately 20,500 residents and businesses in the City of Quartz Hill and adjacent unincorporated areas. The majority of the District's almost 6,000 customer accounts are for residential usage. Today, the District maintains 10 wells and over a half million feet of mains and has a storage capacity of nearly 14.5 million gallons.

A. District Background

The District currently has two sources of water – imported water and groundwater. Groundwater is sourced through the Antelope Valley Aquifer, and is considered the District's primary source of water. Imported water is typically used to the extent possible in order to manage the recharge of the finite aquifer supply. Imported water is sourced from the California State Water Project and is purchased through the regional retailer Antelope Valley-East Kern Water Agency (AVEK).

In 2009, the District became one of the State's first agencies to move from the traditional inclining tiers water rate structure to a water budget rate structure. The decision to move to an allocation-based rate structure was based on achieving both conservation of and efficient use of water by developing an individualized budget of water usage for each account. There were five tiers ranging from a 'conservation' tier to a 'wasteful' tier, and they were designed to send clear price signals to high-use customers that place undue burden on the District's water supply and the District's ability to meet State mandates such as the FY 2015 water reduction mandate for the District to cut usage by 36 percent. The rate structure consists of fixed service charges and variable usage/consumption charges which incorporate pass-through adjustments as applied by AVEK.

The 2009 water budget rate structure and its allocations and tiers were developed internally by the District and based on cost-of-service principles per generally accepted American Water Works Association (AWWA) guidelines to the extent possible. The structure supported the District's mission statement that the District "...will be a responsible overseer of the resources, assets, and natural environments entrusted to [the District] in order to provide a high quality water supply that is resilient, reliable, and supplied at a fair and equitable rate."

B. Study Objective

In 2015, the Board revisited the rate structure in order to:

- 1) Update rate levels that would generate sufficient net revenue to continue meeting the above mission statement; and
- 2) Ensure through a formal and externally-provided study that the cost of serving each customer would most appropriately be reflected in the rates charged to that customer according to the requirements of California Proposition 218 (1996). The District engaged Urban Futures, Inc. (UFI)

to assist in the analysis, and the following summarizes the working group’s study goals and policy objectives:

Table 14- Study Goals & Policy Objectives

Study Goals	Policy Objectives
Conform to legal requirements	Preserve “affordability for essential use”
Generate adequate revenues Minimize administrative burden	Maintain “revenue stability” Tighten “conservation signals”
Develop fair and defensible documentation	Maintain and develop critical capital components
Present concepts for easy understanding	

This report documents the revenue requirements for the District’s continued operation and high level of service delivery and the standards and studies used to develop the residential water budgets and non-residential inclining tier widths which were used as the basis to determine the proposed rates, implemented April 1, 2016.

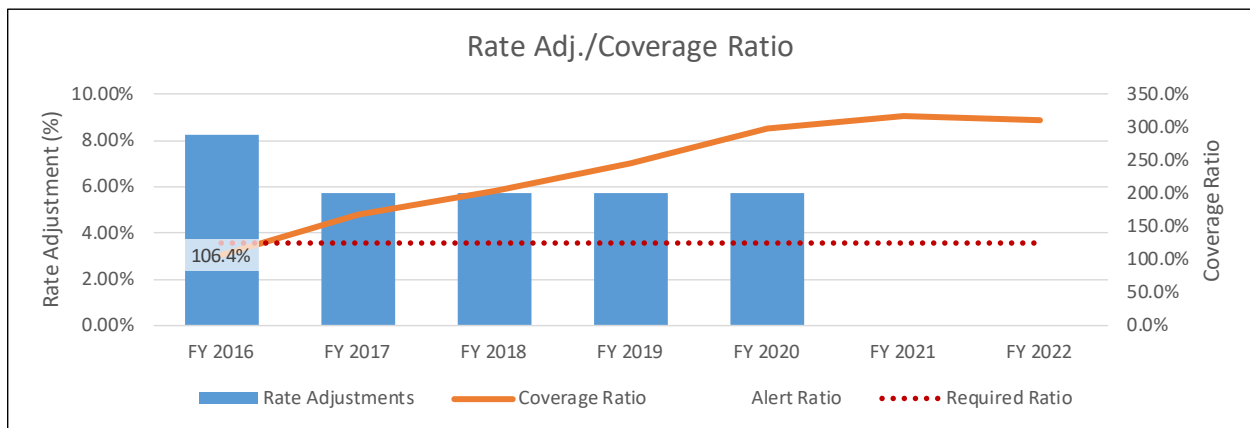
II. FINANCIAL PLAN AND REVENUE REQUIREMENTS

Based on the District’s fiscal year (FY) 2016 budget, UFI projected the revenues and expenditures over the next 15 years (7 years shown in the tables below). UFI used growth and inflation assumptions based on discussion with staff and consistent with industry standards and the District’s planning documents.

A. Projected Debt Service Coverage

The table below shows the proposed revenue adjustments for the water revenues over the planning period, represented by the blue bars. The analysis demonstrates that increases will be necessary to cover operating and capital expenditures over the planning period. The red line in the graph shows the required debt service target coverage of 125 percent. The proposed revenue adjustments will allow the District to meet its debt service coverage over the planning period, as shown by the orange line in the graph. The debt coverage ratio increases in FY 2016 and beyond as revenues are increasing at a higher rate than operating expenses and debt service payments to cover capital costs. In addition to meeting debt covenants and ensuring the availability of future debt as necessary, healthy coverage levels promote the District’s maintaining its favorable credit rating from Standard & Poor’s rating agency.

Table 15- Proposed Rate Adjustments & Projected Debt Service Coverage

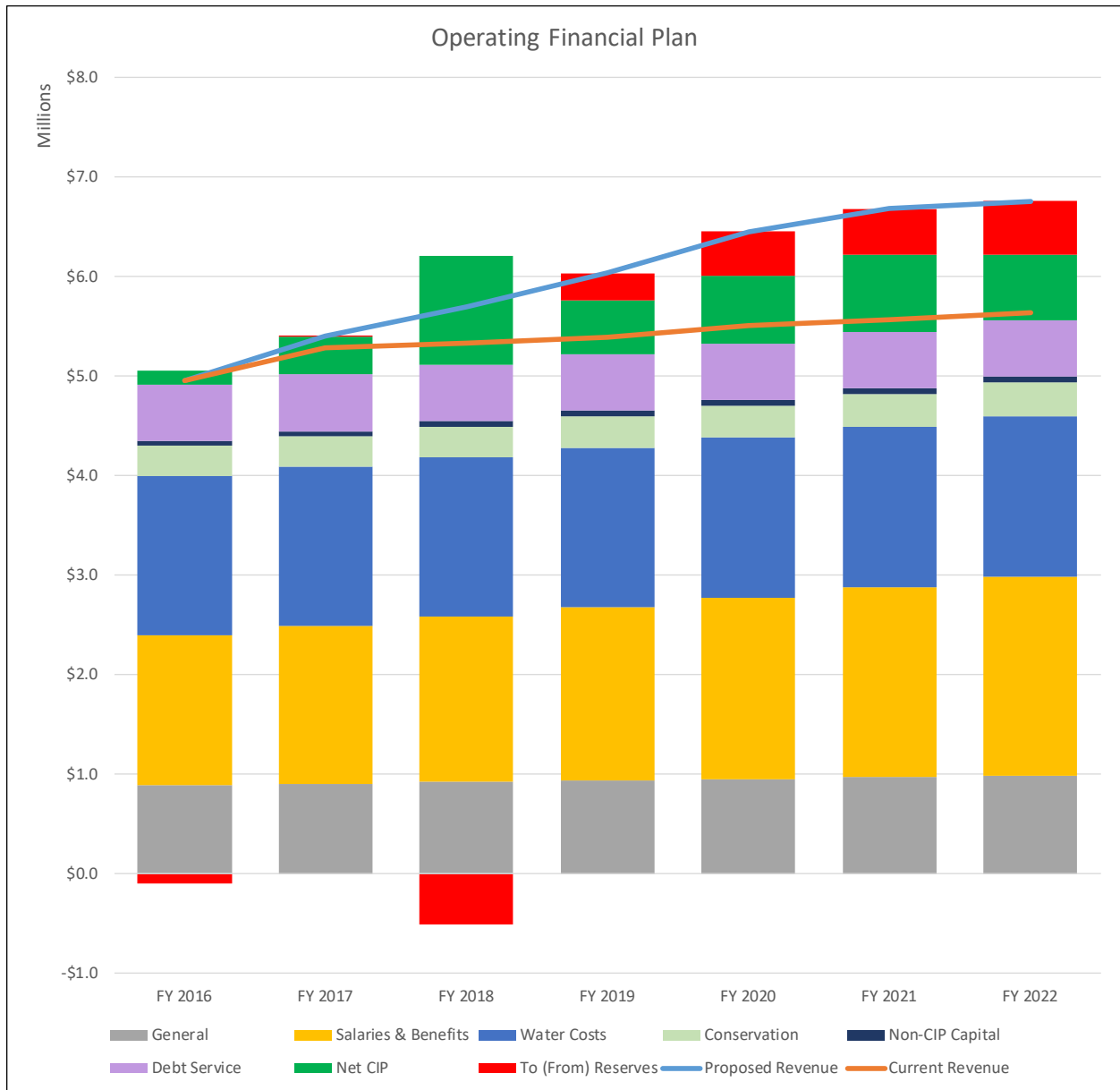


B. Projected Operating Financial Plan

The next table shows the operating financial plan for the water utility. The projected operating financial plan is based on the proposed rate adjustments of 8.25% for FY 2016 (April 1 implementation) and 5.75% for FY 2017 through FY 2020.

The light blue bars represent the current budgeted and projected O&M expenses. General, compensation (salaries and benefits), water supply, conservation programs, non-CIP capital, and net CIP are represented by various colored bars. Annual debt service payments are represented by the light purple bars. The red bars represent the positive or negative net income that will be drawn from or added to the District’s reserves. If rates remain at current levels, projected revenue will follow the orange line. The revenues with the proposed revenue adjustments over the next 7 years are demonstrated by the blue line.

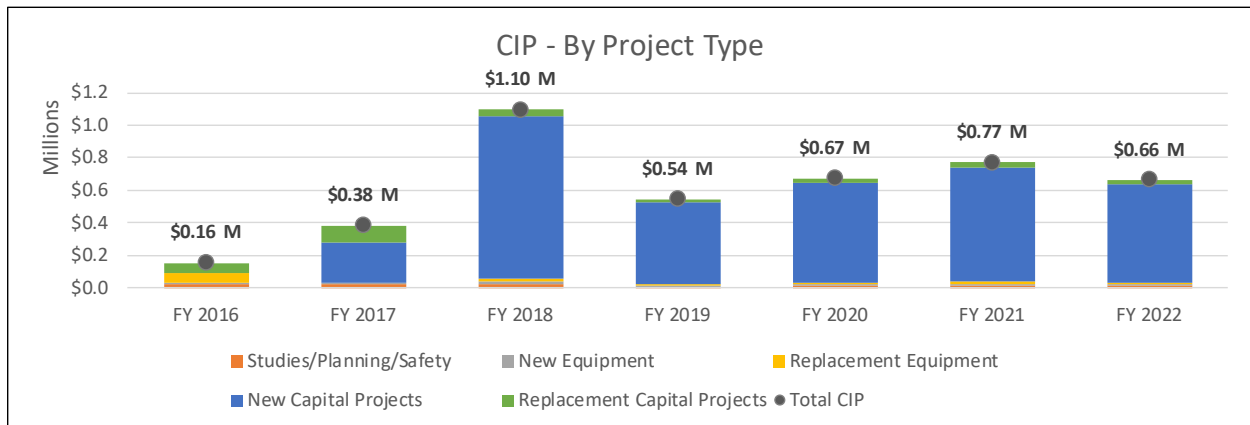
Table 16 - Projected Operating Financial Plan Based on Proposed Rate Adjustments



C. Projected Approach to Capital Improvement Plan

Table 4 shows the District’s budgeted capital improvement program (CIP) over the next seven years. In the financial plan, the District assumes that all capital costs will be rate funded, instead of using capital reserves or new debt service. Funding the capital costs through rates without additional debt is especially prudent for the District because the District’s capital costs are fairly manageable over the planning period, save a spike in FY 2018 for new capital. As it is anticipated that rates and reserves will provide the necessary cash to fund planned capital projects, this approach will save on interest costs and illustrates the value of building reserves through rates.

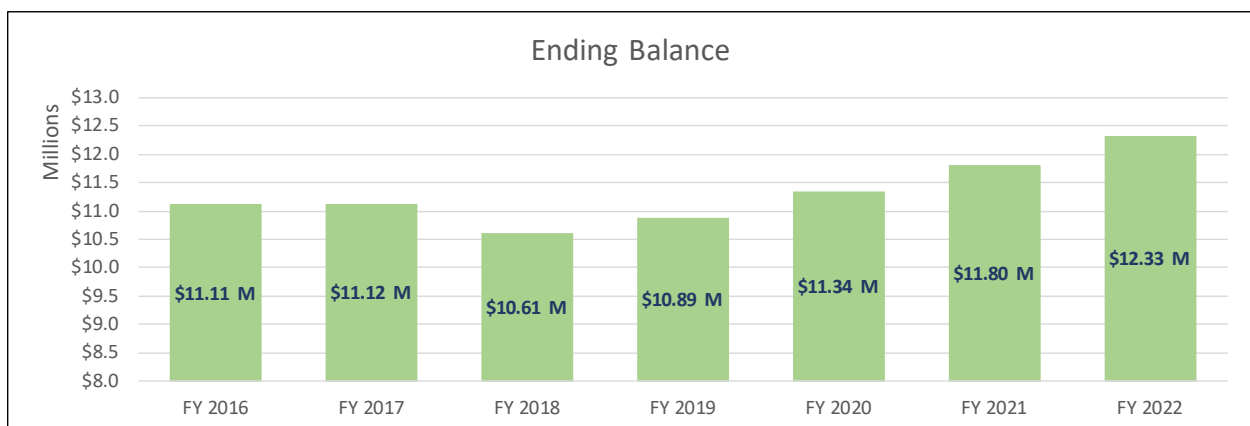
Table 17 - Projected CIP by Project Type



D. Projected Reserve Balance

The following table shows the District’s projected reserve fund balance over the next seven years. After two relatively static years in fund balance for FY 2016 and FY 2017 and a large draw of \$0.5 million in FY 2018 due to planned new capital, the District begins to rebuild its reserve balance from FY 2019 onward.

Table 18 - Projected Reserve Fund Balance



III. WATER BUDGET AND TIER DEFINITIONS

The following discussion of water budget tiers is related to the residential accounts that comprise over 95 percent of the District’s accounts and water usage. The working group determined that non-residential accounts would remain on the inclining tiers rate structure based primarily on: 1) maintaining the balance between conservation signals and ability to continue commercial activities as an ongoing concern; and 2) ensuring that the benefit of developing a water budget-based structure for non-residential customers could meet the cost rationale for developing a separate study. The existing inclining tiers structure already provides conservation signals, and the current study re-calibrated those tiers to ensure that the non-residential rates accurately reflect the cost of providing service. Non-residential customers represent approximately 3 percent of the District’s customer base, and the cost of developing an additional study for this group was deemed to exceed the public benefit of such a study.

A. Development of Water Budget

The American Water Works Association (AWWA) Journal defines water budget as “the quantity of water required for an efficient level of water use by that customer.”¹ To determine an efficient amount of water use, a water budget allocation must be calculated. The budget calculation has to account for the indoor and outdoor needs of the individual customer. Although water budget allocations and tiered rate structures are designed individually for residential, irrigation and commercial water service accounts, there are many similarities among these unique customers.

1. Residential Indoor Water Budget

The indoor water budget (IWB) is determined by a customer’s household size and a standard consumption per person. Quartz Hill’s planned IWB formula is as follows:

$$IWB = \frac{GPCD \times \text{Household Size} \times \text{Days of Service} \times DF_{\text{indoor}}}{748}$$

Where:

- GPCD – Gallons per capita per day. The standard consumption per person per month will be set at 46.7 gpcd, based on the historical average usage of 1,200 gallons per month. This meets the Water Conservation Act of 2010 (SBx7-7) threshold of efficient indoor residential usage of 55 gpcd.
- Household Size – Number of residents. The default value for single-family household size will be based on California Department of Finance Statistics which is 3 persons.
- Days of Service – The number of days of service is based on the 30/360 convention and will be 30 days per month.
- DF_{indoor} – Indoor drought factor. The indoor drought factor will be set at 100 percent, representing the full water budget allotment, based on the 46.7 gpcd residential allotment already representing a conservation-oriented threshold.

¹ Source: American Water Works Association Journal, May 2008, Volume 100, Number 5.

Indoor allotments are fixed at the same allocation each month throughout the year based on no change in consumption patterns according to season. The allotment can vary based on an adjustment application being submitted by the customer and granted by the District. The additional allotment is 33.3 gpcd for each additional full-time adult (1,000 gallons per month) and 16.7 gpcd for each additional child for childcare facilities (500 gallons per month). The lower allotment for each additional person is based on the expectation that they will not incur additional fixed usage needs such as a dishwasher.

Table 19 - Indoor Water Budget Allotment

Indoor Allotment Per Person	Gallons/Mo.	GPCD
First 3 Persons	4,200	46.7
Addtl. Person	1,000	33.3
Addtl. Child for Childcare	500	16.7

For illustrative purposes, the following indoor water budget calculations for two different customers are provided.

- Customer #1: Average household with 3 persons and no adjustment application.

$$IWB_1 = \frac{46.7 \text{ gpcd} \times 3 \text{ persons} \times 30 \text{ days} \times 100\%}{748} = 5.62 \text{ ccf}$$

- Customer #2: Adjustment application submitted and granted for two additional full-time occupants.

$$IWB_2 = \frac{[(46.7 \text{ gpcd} \times 3 \text{ persons}) + (33.3 \text{ gpcd} \times 2 \text{ addtl. persons})] \times 100\%}{748} = 8.29 \text{ ccf}$$

2. Residential Outdoor Water Budget

The outdoor water budget (OWB) is calculated using three components: irrigated landscape area, local weather data, and an efficiency adjustment factor. The irrigated landscape area is the square footage of landscape on a customer’s property, not necessarily the total property size. Irrigated landscape was determined on an individual basis by mapping each customer’s landscape area with Geographic Information System (GIS) technology. The weather data is the monthly reference of EvapoTranspiration (ET). ET is the measurement of water lost to evaporation and used by a reference plant material (transpiration). Plant Factor is a State-legislated efficiency standard in the form of a coefficient that adjusts the outdoor water budget value based on the crop types and irrigation efficiency.

The formula to calculate an annual outdoor water budget is as follows:

$$OWB = \frac{\text{Irrigable sq. ft.} \times \text{EvapoTranspiration Rate} \times \text{Plant Factor}}{748}$$

Where:

- Irrigable square footage is the GIS-measured irrigable landscape area for each customer.

Table 20 - Outdoor Water Budget Allotment

Outdoor Allotment Per S. Ft.	Gallons/Sq. Ft./ Year	Gallons/ Year
First 5,000 sq. ft.	19	95,000
Next 9,000 sq. ft.	17	127,500
Sq. footage over 14,000 sq. ft.	14	Varies

- ET is measured in inches of water during the billing period based on historical weather data acquired from California Irrigation Management Information System (CIMIS). The historical data is an average taken from the two CIMIS weather stations closest to the District – Lancaster and Palmdale. Because this factor is a measure of transpiration and hotter weather effects greater transpiration, this factor varies through the year, increasing with the hotter months.
- Plant Factor is the coefficient that indicates the amount of water per square inch necessary to maintain a plant, taking into consideration plant type, plant density, and microclimate. The plant factor used was for a warm-season grass.
- Net seasonal adjustment represents the combined ET and plant factor, and the seasonal adjustment for each month is shown below:

Table 21 - Monthly Seasonal Adjustment based on ET & Plant Factor

Seasonal Adjustment By Month												
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
0.03	0.04	0.07	0.09	0.11	0.13	0.15	0.14	0.10	0.07	0.04	0.03	1.00

For illustrative purposes, the following outdoor water budget calculations for two different customers are provided.

- Customer #1 – Single-family: Landscape Area = 4,500 sq. ft.; the seasonal adjustment for January = 0.03:

$$OWB_1 = \frac{(4,500 \text{ sq. ft.} \times 19 \text{ gallons}) \times 0.03}{748} = 3.43 \text{ ccf}$$

- Customer #2 – Single-family: Landscape Area = 8,000 sq. ft.; the seasonal adjustment for April = 0.09:

$$OWB_2 = \frac{[(5,000 \text{ sq. ft.} \times 19 \text{ gallons}) + (3,000 \text{ sq. ft.} \times 17 \text{ gallons})] \times 0.09}{748} = 17.57 \text{ ccf}$$

B. Tier Definitions

The tier definitions are tailored to the unique consumption patterns of the District’s customers and based on the District’s policy decisions. The recommended tier definitions are based on cost-of-service-based financial modeling, customer impact analysis using actual customer data, and efficiency standards written into California laws, codes and ordinances.

1. Essential Use

Essential use is represented by the indoor water budget and is assigned to define Tier 1 width. Tier 1 width will vary from customer to customer based on the number of people that live in the home. Indoor water use is considered essential for health, safety, and sanitary purposes. The District has determined that at the time of the study, a portion of the demand for essential indoor water can be met through groundwater with the balance supplied from imported water through AVEK. The combination of local and imported supplies determines the unit cost of water in the District's first tier (Tier 1) of the water budget rate structure.

2. Non-Essential Use

Non-essential use is represented by the outdoor water budget and is assigned to define Tier 2 width. Tier 2 width will be determined individually for every customer through the outdoor budget formula described earlier in this report. Maintaining healthy landscape at an efficient water use level is considered non-essential water relative to health and safety, yet it is important to communities in the arid west. The District has determined that non-essential outdoor water can be met through imported water. All groundwater was allocated toward supporting Tier 1 essential use. Because outdoor water is considered non-essential, Tier 2 will fund a portion (25%) of the District's conservation and efficiency programs.

3. Penalty Tiers

Tiers 1 ("essential") and 2 ("non-essential") together make up the customer's total water budget. Tiers 3 ("inefficient") and 4 ("unsustainable") represent penalty tiers. Tier 3 is defined as 130% of total water budget, and Tier 4 is defined as any usage greater than 130% of water budget. Tiers 3 and 4 will fund 25% and 50% of the District's conservation/efficiency programs, respectively.

Non-essential use is represented by the outdoor water budget and is assigned to define Tier 2 width.
Tier 2 width

IV. COST OF SERVICE ANALYSIS

The District's customer classifications and the revenue requirements reviewed and finalized through the operating and capital cash flow analysis provide the basis for performing the cost of service analysis. This section of the report discusses the allocation of operating and capital costs to the appropriate parameters consistent with industry standards and the determination of unit costs.

The cost of service analysis shown in this section is consistent with the Base-Extra Capacity method, as defined in the American Water Works Association (AWWA) M1 Manual, Principles of Water Rates, Fees and Charges, that is common for setting rates at retail agencies. Following this industry standard methodology is acceptable to courts for meeting the requirements of Proposition 218 which established a stringent requirement for increasing water rates in California. Proposition 218, the "Right to Vote on Taxes Act," was passed by voters in November 1996. It amended the California Constitution and is codified in Articles XIII C and XIII D. Proposition 218 was initially passed to close perceived loopholes in the restrictions on property taxes imposed by Proposition 13. It requires that:

- Revenues derived from the fee may not exceed the funds required to provide the service;
- The amount of the fee may not exceed the proportional cost of the service attributable to the parcel upon which the fee is imposed; and
- The fee may not be imposed unless the service is actually used by, or immediately available to, the owner of the property.

Proposition 218 also introduced procedural requirements prescribing that a local agency must give advance written notice to the owner of each parcel upon which a fee or charge is proposed for imposition. A public hearing on the proposed fee increase must be held at least 45 days after providing such notice. If a majority of owners of the identified parcels submit written protests to the fee, the agency may not impose the fee.

A. Cost of Service to be Allocated

The total utility revenue requirements net of revenue credits from miscellaneous sources, is by definition, the cost of providing service. This cost is then used as the basis to develop unit costs for the water components and to allocate costs to the various customer classes in proportion to the water services rendered. The concept of proportionate allocation to customer classes requires that allocations should take into consideration not only the average quantity of water used but also the peak rate at which it is consumed. The water system is designed to handle peak demands. The costs associated with design and construction of facilities used to meet peak demands need to be allocated so that peaking costs can be recovered appropriately. In this study, water rates were calculated for FY 2016, and accordingly FY 2016 is defined as the Test Year. Test Year revenue requirements are used in the cost allocation process. Subsequent years' revenue adjustments are incremental and the rates adjustments for future years are based on the respective revenue increments. The District should review the cost of service analysis at least every five years to ensure that the rates are consistent with the costs of providing service.

The annual revenue requirements or costs of service to be recovered from commodity charges include operations and maintenance (O&M) expenses and capital costs. O&M expenses include costs directly related to the supply, treatment, and distribution of water as well as routine maintenance of system facilities. This maintenance is often referred to as routine capital and represents the annual recurring capital outlay for minor system improvements and purchases of materials and supplies.

The total FY 2016 cost of service to be recovered from the District's water customers is estimated at approximately \$4.7 million. Approximately \$4.0 million of this total is for operating costs (net of a contra expense of \$0.7 million for unrestricted revenues) and the remaining \$0.7 million is for existing debt service and planning for capital projects. Planned capital expenditure in FY 2016 is approximately \$155,000, while existing debt service is \$569,050.

The cost of service analysis is based upon the premise that the utility must generate annual revenues adequate to meet the estimated annual revenue requirements. As part of the cost of service analysis, revenues from sources other than water rates and charges (e.g. revenues from miscellaneous services) are deducted from the appropriate cost elements. Additional deductions are made to reflect interest income and other non-operating income during FY 2016. Adjustments are also made to account for cash balances to ensure adequate collection of revenue and to determine annual revenues needed from rates.

To allocate the cost of service among the different customer classes, costs first need to be allocated to the appropriate water cost components. The following section describes the allocation of the operating and capital costs of service to the appropriate parameters of the water system.

1. Functional Cost Components

The total cost of water service is analyzed by system function in order to equitably distribute costs of service to the various classes of customers. For this analysis, water utility costs of service are assigned under the Base-Extra Capacity method to three basic functional cost components: base costs, extra capacity or peaking costs, and customer-service related costs. This method is consistent with the M1 Manual, referenced earlier, and is widely used in the water industry to design rates for retail customers.

Base Costs – Base costs are those operating and capital costs of the water system associated with serving customers at a constant average rate of use. Supply costs are typically considered to be based on average usage.

Extra Capacity Costs – Extra capacity or peaking costs represent those costs incurred to meet customer peak demands for water in excess of average day usage. Total extra capacity costs are subdivided into costs associated with maximum day and maximum hour demands. The maximum day demand is the maximum amount of water used in a single day in a year. The maximum hour (Max Hour) demand is the maximum usage in an hour on the maximum usage (Max Day) day. Different facilities are designed to meet different peaking characteristics. For example, transmission lines are designed to meet Max Day requirements. Transmission lines have to be designed larger than they would be if the same annual amount of water were being used at a constant rate throughout the year. The cost associated with

constructing a larger line is based on the “overdesign” and is proportioned on the Max Day factor. For example, if the Max Day factor is 2.0, then the line has to be designed twice as large as required to meet just the average usage conditions. In this case half of the cost would be allocated to Base or average and the other half allocated to Max Day. The calculation of the Max Hour and Max Day demands is explained below.

Customer Service Related Costs – Customer service costs include customer-related and meter-related costs. Customer costs include such costs as meter reading, billing, collecting, and accounting. Meter service costs include maintenance and capital costs associated with meters and a portion of the capacity related costs. These costs are assigned based on meter size or equivalent meter capacity.

The allocation of costs of service into these principal components provides the means for determining the costs to the various customer classes on the basis of their respective base, extra capacity and customer requirements for service.

2. Allocation to Functional Cost Components

The water utility is comprised of various facilities that are designed and operated to fulfill a given function. In order to provide adequate service to its customers at all times, the utility must be capable of not only providing the total water demand, but also supplying water to meet peak or maximum water use needs. Functional cost components are determined by designating various expenses to their specific purpose.

3. Determination of Allocation Percentages

To determine how costs should be allocated to average and peak (Max Day and Max Hour) demands, the allocation percentages are derived from actual historical data and assigned to each cost component. Customer service related costs are allocated 100 percent to the customer service component. Costs related to meter maintenance are allocated to meter service component. These two components are included in the fixed monthly service charges.

To calculate volume-related cost allocation, first system peaking factors are determined. Peaking factors are based on the District’s usage characteristics. The Base or Average Demand is the average of the month-on-month use over the maximum month’s usage, and Base Demand is assigned a value of 1.90. Per California Code of Regulations (CCR) Title 22, Section 64554, the factor of 1.5x can be applied to the District’s Max Day demand and Max Hour demand for a value of 2.85 and 4.28, respectively. The system peaking as derived above are shown in the table below.

Table 22 - Peaking Factors

System Peaking Factors	
	Peaking Factors
Base	1.90
Max Day	2.85
Max Hour	4.28

Next, the relative proportion of costs assigned to Base, Max Day and Max Hour are used to calculate cost components. Cost components solely related to providing average day demand, such as supply sources, are allocated 100 percent to Base. Cost components that are designed to meet Max Day peaks, such as reservoirs and transmission facilities, are allocated both Base and Max Day factors. Cost components designed for Max Hour peaks, such as distribution system facilities, are allocated similarly. The results of the allocation are presented in the table below.

Table 23 - Calculation of Peaking Allocation Factors

Calculation of Allocation Factors			
	Base	Max Day	Max Hour
Facilities Designed for Base	100%		
Facilities Designed for MaxDay	56%	44%	
Facilities Designed for MaxHour	23%	42%	33%

These percentages are then applied to the operating and capital improvement costs amongst Base, Max Day, and Max Hour parameters for cost of service calculations, which is explained in detail in the following sections.

4. Allocation of Operating Expenses

Projected net operating expenses for FY 2016 are allocated to cost components on the basis of the design criteria of the facilities. Water supply costs are allocated to base; storage and reservoir costs are allocated to max day; distribution system costs are allocated to max hour; transmission costs are allocated to max day; billing and customer service costs are allocated to customer service, etc.

Administration and general expenses are related to total system operations and cannot specifically be allocated to individual functions such as storage or distribution, etc. These expenses are therefore allocated in the same proportion as all the remaining operating expenses. The resulting allocation of operation and maintenance expense serves as the basis for allocating the FY 2016 cost of service revenue requirements to the base, extra capacity and customer costs functions.

5. Allocation of Plant Investment and Capital Costs

Capital costs include capital improvements financed from annual revenues, debt service and other sources. Capital costs related to specific facilities will vary significantly from year to year. Allocating these costs based on the functions of these specific facilities would cause the rates to the different customer classes to change from year to year. A reasonable method of assigning capital costs to functional components, widely practiced in the industry, is to allocate such costs on the basis of net plant investment recognizing that over a period of time these allocations will provide costs to be passed on to customers equitably.

Net plant investment is represented by the total replacement cost of water utility facilities less accumulated depreciation. The estimated fiscal year net plant investment in water facilities consists of net plant in service as of June 30, 2015, the latest assets data available.

Costs are allocated based on the design criteria of each facility. For example, treatment facilities are allocated to Max Day since these facilities are designed to handle the maximum day demand. The investment in general plant, i.e. general investments not classified as any particular function such as storage, treatment, distribution, etc., is allocated to each cost component on the basis of all other investments.

B. Unit Cost of Service

In order to allocate costs of service to the different customer classes, unit costs of service need to be developed for each cost component. The unit costs of service are developed by dividing the total annual costs allocated to each parameter by the total annual service units of the respective component.

The consumption-related cost components are based on consumption units of one hundred cubic feet or HCF (about 748 gallons). Customer service related cost components are based on number of accounts and meter related costs are based on equivalent meters.

C. Allocation of Cost to Customer Classes

The unit cost of each of the cost categories is then applied to the projected FY 2016 usage and units of each customer class to derive customer class costs. The District’s residential class is responsible for approximately 87 percent of the total cost of service. The non-residential class is responsible for approximately 13 percent of the annual cost of service. A summary of the above steps is shown in the table below.

Table 24 - Summary of Allocated Functions to Cost of Service & Customer Class

										87%	13%	
Allocated Functions to Cost of Service and Customer Class												
	Wells Supply	AVEK Supply	Trans.	Dist.	Storage	Pumping	Meters	Fire Protec.	Billing	Allocation of Costs	Allocation to Residential	Allocation to Non-Residential
Wells Supply	100%									\$333,201	\$289,600	\$43,601
AVEK Supply		100%								\$1,672,743	\$1,453,856	\$218,888
Conservation										\$300,000	\$260,743	\$39,257
Base			56%	24%	24%	56%				\$1,077,055	\$936,117	\$140,939
Max Day			44%	42%	42%	44%				\$1,156,339	\$1,002,782	\$153,557
Max Hour				34%	34%					\$420,415	\$364,586	\$55,829
Customer									100%	\$151,758	\$147,053	\$4,705
Meter							100%			\$162,982	\$146,823	\$16,160
Public Fire Protection								100%		\$0	\$0	\$0
Unrestricted Revenues										(\$565,369)	(\$491,387)	(\$73,982)
Totals:	100%	100%	100%	100%	100%	100%	100%	100%	100%	\$4,709,125	\$4,110,172	\$598,954

Once the customer class cost responsibility is determined, the next step is to design customer water rates to recover the revenues required from each customer class, which is discussed in the next section.

V. DEVELOPMENT OF WATER RATE STRUCTURE

The revenue requirements and cost of service analysis described in the preceding sections of this report allocate the costs equitably amongst the different customer classes. Rate design is the process of developing rate schedules for each customer class such that the annual cost of service determined for each customer class is equitably recovered from the customers in that class. In this study, the focus of rate design is on the development of rate schedules for the District's residential and non-residential customers.

A. Rate Design

Proposition 218 requires a nexus (justification) between the rates charged to customers and the costs of providing service; the rate structure should be designed to ensure that customers pay their proportionate share of costs. In addition, rate structures should be easy to understand, simple to administer, meet the District's stated objectives and comply with regulatory requirements. To meet this requirement, the District:

- Identified three different rate components of the commodity rate, including Water Supply, Delivery Costs, and Conservation Programs;
- Eliminated the prior Tier 0 or "conservation" tier with the understanding that a subsidized tier does not best reflect the cost of providing service;
- Reduced the number of tiers from 5 to 4 based on ease of customer understanding and for increased defensibility of tier definitions in the absence of alternative sources of water supply such as recycled water; and
- Combined all residential meters – $\frac{3}{4}$ " and 1" – based on the recognition that the two different meter sizes do not present a material difference in base and peaking loads on the water system.

B. Cost Drivers

1. Commodity Rate Components

As mentioned above, the study identified three different rate components of the commodity rate, including Water Supply, Delivery Costs, and Conservation Programs;

The District's lowest cost water supply is local groundwater at \$117/acre-foot(AF). The entirety of this water supply will be applied to Tier 1 "essential" use in order to support the policy goal of providing affordability for essential indoor usage for health and safety. Because the safe threshold for annual draw from the District's aquifers does not meet all of Tier 1 demand, the costlier imported water will need to supplement demand. Imported water from AVEK is budgeted at \$485/AF. The remaining volume of imported water is allocated between Tiers 2, 3, and 4 according to the proportionate expected share of usage in those tiers based on historical usage data.

In addition to the water supply costs, the District incurs approximately \$4.7 million net in operations and maintenance expenses to deliver water services to end-users. The District's revenue requirements must be recovered by the monthly fixed system charges and the District's delivery cost component in the usage rates. The ultimate goal of the water budget rate structure is to eliminate inefficient and

unsustainable usage (Tiers 3 and 4) while maintaining revenue stability. To ensure financial sufficiency and revenue stability, half of the District’s unrecovered delivery costs (base costs not including peaking costs will be recovered only from the efficient usage.

Unrestricted Revenues (a contra expense) represents a mitigating factor to reduce the costs for “essential” use, and half of this contra expense is applied to decrease the Tier 1 unit costs, thereby balancing the two principles of revenue stability versus affordability for essential use.

The ultimate goal of the water budget rate structure is to eliminate inefficient usage (Tier 3, Tier 4 and Tier 5), while maintaining revenue stability. To assist customers in using water efficiently, Quartz Hill Water District employs staff to administer customer programs, evaluation consultants to provide on-site assistance for customers, and provides direct install programs and financial rebates to customers electing to perform efficiency upgrades.

The District has historically supported conservation and efficiency programs including a rebate program to encourage conservation amongst District customers. The District will maintain conservation-oriented programs and employ studies focused on increasing efficient and alternative uses of water. Efficiency program costs will be funded by the “non-essential” and “penalty” charges from Tiers 2, 3, and 4, with the bulk of cost concentrated in the penalty-only tiers. Only customers who use water other than designated as affordable for essential use will pay the higher tiered rates. This is consistent with the District’s policy to create a conservation pricing structure. A summary of rate components for the commodity charges is shown in the table below.

Table 25 - Commodity Rate Components for Residential Customers

Commodity Rate Components - Residential				
	Tier 1	Tier 2	Tier 3	Tier 4
Groundwater	\$0.45			
Imported Water	\$0.23	\$1.25	\$1.25	\$1.25
Conservation Programs		\$0.07	\$1.15	\$3.45
Delivery	\$0.73	\$0.05	\$0.32	\$0.32
Unrestricted Revenues	(\$0.38)	(\$0.03)	(\$0.17)	(\$0.17)
Total:	\$1.02	\$1.35	\$2.56	\$4.86

Table 26 - Commodity Rate Components for Non-Residential Customers

Commodity Rate Components - Non-Residential			
	Tier 1	Tier 2	Tier 3
Groundwater	\$0.55	\$0.55	\$0.03
Imported Water			\$1.18
Conservation Programs	\$0.12	\$0.11	\$0.17
Delivery	\$0.87	\$0.56	\$0.75
Unrestricted Revenues	(\$0.46)		(\$0.32)
Total:	\$1.08	\$1.22	\$1.81

2. Fixed Charges Components

A fixed or service charge is a cost recovery mechanism that is generally included in the rate structure to recover some of the fixed costs including customer related costs, meter costs, and a portion of the capacity related cost to provide a stable source of revenue independent of water consumption.

Customer-related costs are fixed expenditures that relate to operational support activities including meter reading, accounting, billing, customer service, and administrative and technical support. The customer related costs are essentially common-to-all customers and are reasonably uniform across the different customer classes and meter sizes. Capacity-related costs such as meter maintenance and a portion of the peaking costs are based on the hydraulic capacity of the meters. Since facilities are designed to meet peaking requirements, UFI has assigned a portion of the costs related to peaking to the service charge. Increasing the fixed charge tends to reduce the variable rates and incentive for conservation, but provides a mechanism for recovering a portion of the fixed costs and ensures a stable source of customer revenues for the utility. This rate design seeks an appropriate balance between these pricing objectives. A summary of rate components for the commodity charges is shown in the table below.

Table 27 - Fixed Rate Components for Residential Customers

Fixed Rate Components - Residential			
	Meter Charge (per equivalent unit)	Customer Charge	Total
Delivery	\$5.70		\$5.70
Max Day	\$14.53		\$14.53
Max Hour	\$5.28		\$5.28
Customer Service		\$2.13	\$2.13
Meter Maintenance	\$2.13		\$2.13
Unrestricted Revenues	(\$2.99)		(\$2.99)
	\$24.65	\$2.13	\$26.78

Table 28 - Fixed Rate Components for Non-Residential Customers

Fixed Rate Components - Non-Residential	
	Meter Charge (per equivalent unit)
Delivery	\$0.00
Max Day	\$14.15
Max Hour	\$7.35
Customer Service	
Meter Maintenance	\$2.13
	\$23.63

C. Rates

1. Equivalent Meters

A water system is designed to meet peak demands and a customer's peak demand is proportional to the size of the meter and, more specifically, its hydraulic capacity. To allocate peaking/capacity related costs appropriately, the concept of "equivalent meters" is utilized. Equivalent meters are calculated by comparing the capacity of all meters in the system to a base meter, generally, the smallest meter in the system, or a meter size with the most meters in the system. The capacity ratio is calculated using the meter capacities in gallons per minute (gpm) provided in the AWWA M22 Manual. By using equivalent meters instead of a straight meter count, the analysis reflects the fact that larger meters impose larger demands, are more expensive to install, maintain, and replace than smaller meters and use a greater capacity in the system. Equivalent meters are used in calculating meter service costs. The equivalent meter ratios used for this study are shown in the table below.

Table 29 - Equivalent Meter Ratios

Equivalent Meter Ratios	
Meter Size	Meter Ratio
3/4"	1.0
1"	1.0
1.5"	3.3
2"	5.3
3"	11.7
4"	20.0
6"	41.7
8"	60.0

The proposed rates for all meter sizes, inclusive of adjustments through the study period of FY 2020, are shown in the table below.

Table 30 - Current & Proposed Residential Fixed/Consumption Charges

RESIDENTIAL FIXED CHARGES		Proposed Adjustments				
Existing		8.25%	5.75%	5.75%	5.75%	5.75%
Meter	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
3/4"	\$23.13	\$26.78	\$28.32	\$29.95	\$31.67	\$33.49
1"	\$33.29	\$26.78	\$28.32	\$29.95	\$31.67	\$33.49

RESIDENTIAL CONSUMPTION CHARGES		Proposed Adjustments				
Existing		8.25%	5.75%	5.75%	5.75%	5.75%
Tier	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
0	\$0.98					
1	\$1.04	\$1.02	\$1.08	\$1.14	\$1.21	\$1.28
2	\$1.56	\$1.35	\$1.42	\$1.51	\$1.59	\$1.68
3	\$2.60	\$2.56	\$2.71	\$2.86	\$3.03	\$3.20
4	\$3.64	\$4.86	\$5.14	\$5.43	\$5.75	\$6.08

Table 31 - Current & Proposed Non-Residential Fixed/Consumption Charges

NON-RESIDENTIAL FIXED CHARGES		Proposed Adjustments				
Existing		8.25%	5.75%	5.75%	5.75%	5.75%
Meter	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
3/4"	\$23.13	\$23.63	\$24.99	\$26.42	\$27.94	\$29.55
1"	\$33.29	\$23.63	\$24.99	\$26.42	\$27.94	\$29.55
1.5"	\$45.41	\$78.76	\$83.28	\$88.07	\$93.14	\$98.49
2"	\$66.62	\$126.01	\$133.26	\$140.92	\$149.02	\$157.59
3"	\$98.46	\$275.68	\$291.53	\$308.29	\$326.02	\$344.77
4"	\$193.98	\$472.58	\$499.75	\$528.49	\$558.88	\$591.01
6"	\$363.78	\$984.55	\$1,041.16	\$1,101.03	\$1,164.34	\$1,231.29
8"	\$576.03	\$1,417.74	\$1,499.26	\$1,585.47	\$1,676.63	\$1,773.04

NON-RES. CONSUMPTION CHARGES		Proposed Adjustments				
Existing		8.25%	5.75%	5.75%	5.75%	5.75%
Tier	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
1	\$1.15	\$1.08	\$1.15	\$1.21	\$1.28	\$1.36
2	\$1.54	\$1.22	\$1.29	\$1.36	\$1.44	\$1.52
3	\$1.90	\$1.81	\$1.91	\$2.02	\$2.14	\$2.26

VI. CUSTOMER IMPACT ANALYSIS

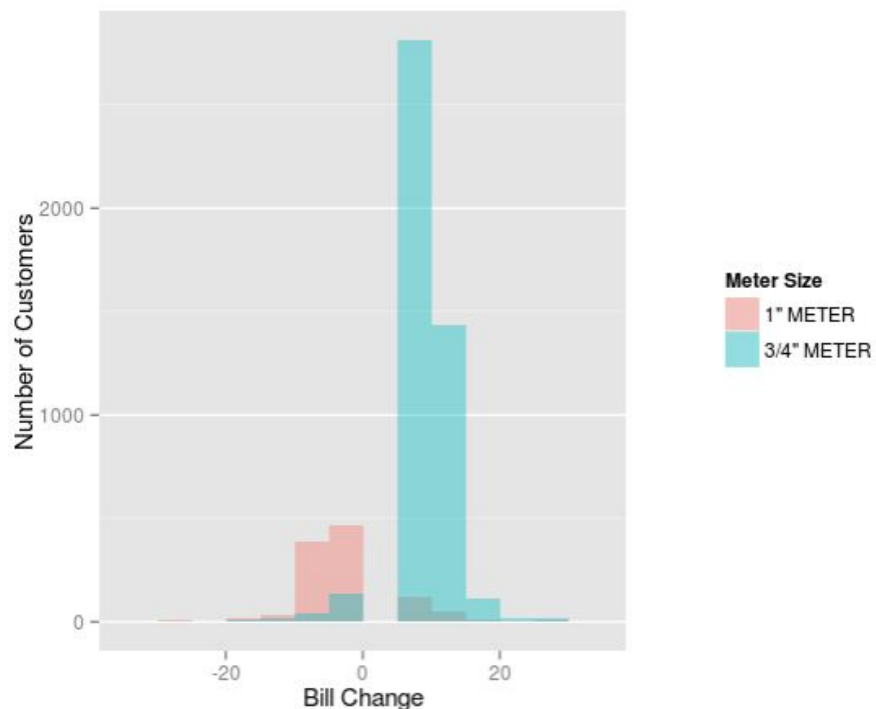
With the implementation of rate structure recommendations, it is important to understand how the proposed rate structure would impact water customers.

A. Average Monthly Bills

The District's residential customer impacts will vary based on: 1) the combination of both $\frac{3}{4}$ " and 1" residential meters; 2) the reduction of tiers from 5 to 4; and 3) the re-calibrated allocation of costs of providing water service.

Based on combining residential meters, it was expected that the average monthly bill for $\frac{3}{4}$ " residential customers would increase and the average monthly bill for 1" residential customers would decrease, and the below table reflects that trend.

Table 32 - Bill Impact Distribution for Residential Customers

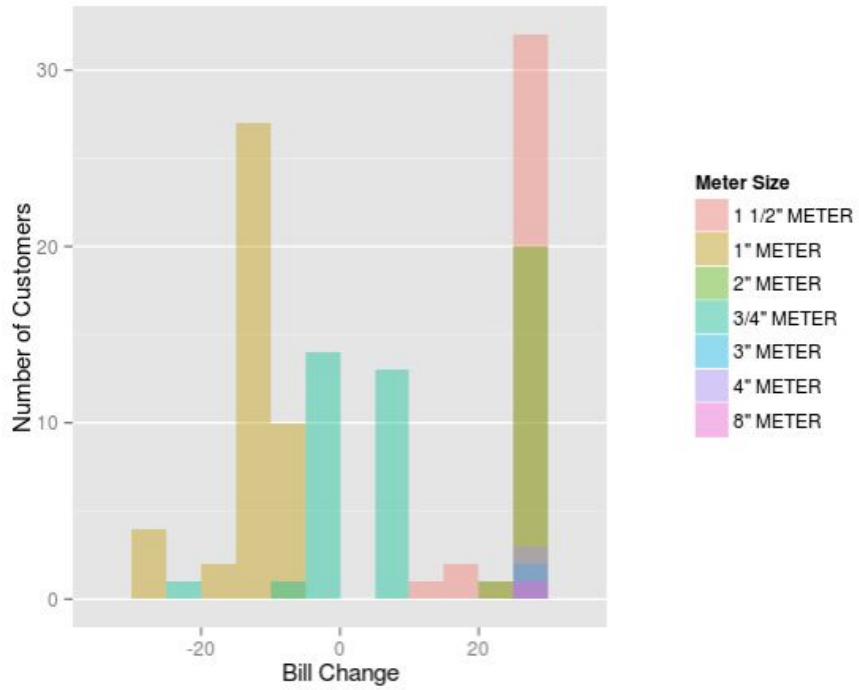


For FY 2016, the majority of 1" customers whose FY 2015 average monthly bill was \$53.85 are projected to see a decrease in average bill because the cost-of-service determination of fixed cost outweighs the 8.25% proposed adjustment for the consumption rates. While the majority of $\frac{3}{4}$ " customers whose FY 2015 average monthly bill was \$43.70 are projected to see an increase in average bill, the majority of those customers are projected to see an estimated increase of less than \$10. The weighted average customer impact is an average bill of \$51.93.

Non-residential customers remained on an inclining tiers rate structure and retained the number of historical tiers. Impacts for non-residential customers are not as homogenous as those for residential customers, as their usage can vary widely among customers. The below table reflects that expectation

and also a significant change in average monthly bill based the re-calibrated allocation of costs of providing water service.

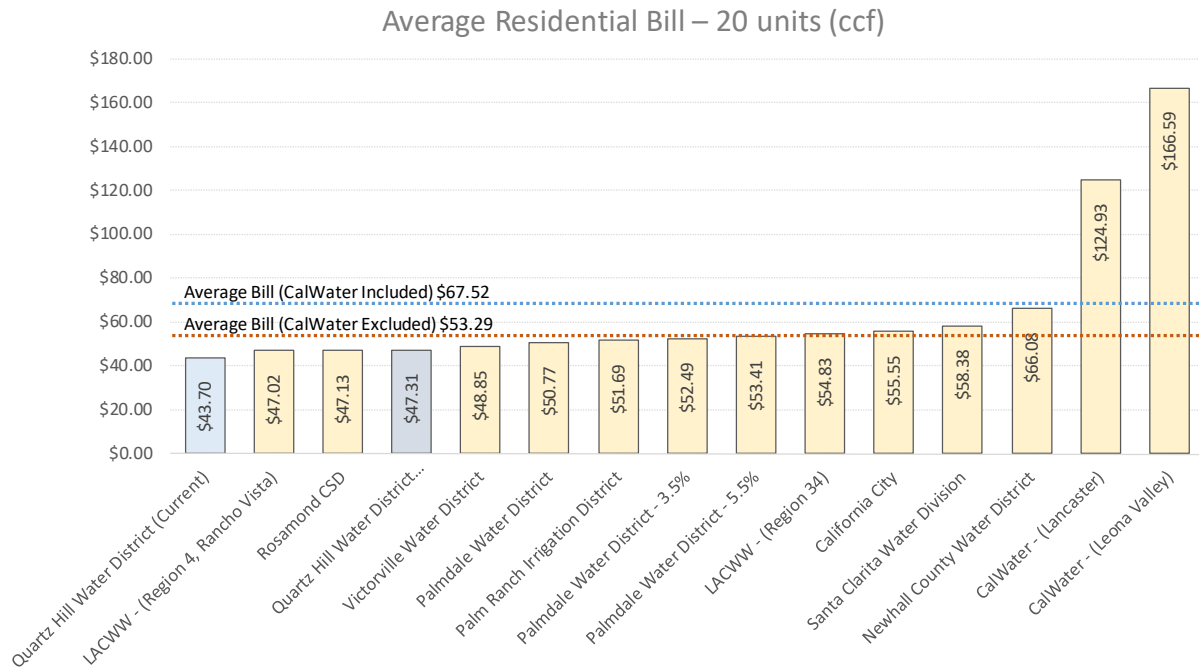
Table 33 - Bill Impact Distribution for Non-Residential Customers



B. Comparison of Peer Agencies

Before the study, the District’s average monthly bills based on 20 ccf of usage were the lowest in the region. Upon implementation of the cost-of-service-based rates and FY 2016 rate adjustments, the District’s customer bills will remain among the lowest in the region.

Table 34 - Comparison of Average Residential Bill of Peer Agencies (20 ccf usage during study period)



APPENDIX E Exhibit 3 Non-Overlying Producers Water Available for use in 2019

Table 1 Exhibit 3 Non-Overlying Producers Water Available for Use in 2019

September 9, 2019

Original Exhibit 3 Producers Public Water Suppliers	Production Right (AFY)	2019 Water Sources (AF)				
		2019 Rampdown	Unused Federal Reserve Right	Imported Water Return Flows for 2019	Carry Over Water for use in 2019	Transfers (Not Permanent)
	Judgment	Agreed Upon	Allocated as per Judgment (6,278.73 AF)	Imported Water Use Table from AVEK	See 2018 Annual Report Table B-1	See 2018 Annual Report Appendix F
Boron Community Services District	50.00	118.68	0.00	68.77	73.34	-
California Water Services Company	343.14	507.56	175.80	1.32	101.63	-
Desert Lake Community Services District	73.53	73.53	37.67	35.90	327.44	-
Littlerock Creek Irrigation District	796.58	1,212.32	408.12	0.00	0.00	-
Los Angeles County Waterworks District No. 40, Antelope Valley	6,789.26	6,789.26	3,478.41	9,782.54	11,343.65	-
North Edwards Water District	49.02	84.95	25.11	0.00	0.00	-
Palm Ranch Irrigation District ¹	465.69	885.55	238.59	7.68	0.00	2,850.00
Palmdale Water District ²	2,769.63	2,769.63	1,418.99	3,798.05	5,904.19	100.00
Quartz Hill Water District	563.73	1,785.97	288.82	1,055.44	3,730.38	-
Rosamond Community Services District	404.42	2,080.06	207.20	5.02	371.65	-
Transfer from eSolar Inc.; Red Dawn Suntower LLC - Exhibit 4	150.00	150.00	0.00	0.00		-
West Valley County Water District	40.00	136.67	0.00	0.00	21,852.28	-
Total³	12,495.00	16,594.17	6,278.73	14,754.72	43,704.55	2,950.00

1. In March 2019, a 2,850 AF one-time transfer to Palm Ranch ID was approved. A portion of this (114.17 AF) will be applied to its 2018 Replacement Water Assessment. The remainder will be available for use in 2019 (2,850-114.17=2,735.83 AF). Unused amounts will become Carry Over water.

2. In December 2018, a 100 AF one-time transfer to PWD was approved. This is also available for use in 2019. Unused amounts will become Carry Over water.

3. Production Right total of 12,495 AF does not include the 150 AF that RCSD received from an Exhibit 4 Party transfer (eSolar Inc.; Red Dawn Suntower LLC).

Table does not include rights to Stored Water.