AGENDA

SPECIAL MEETING OF THE BOARD OF DIRECTORS
LA PUENTE VALLEY COUNTY WATER DISTRICT
112 N. FIRST STREET, LA PUENTE, CALIFORNIA
MONDAY, OCTOBER 15, 2018, AT 5:30 PM

1. **CALL TO ORDER**

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL OF BOARD OF DIRECTORS**

   President Rojas____ Vice President Escalera____ Director Aguirre____

   Director Hastings____ Director Hernandez____

4. **PUBLIC COMMENT**

   Anyone wishing to discuss items on the agenda or pertaining to the District may do so now. The Board may allow additional input during the meeting. A five-minute limit on remarks is requested.

5. **ADOPTION OF AGENDA**

   Each item on the Agenda shall be deemed to include an appropriate motion, resolution or ordinance to take action on any item. Materials related to an item on this agenda submitted after distribution of the agenda packet are available for public review at the District office, located at the address listed above.

6. **PUBLIC HEARING ON PROPOSED INCREASE TO WATER USE RATES AND SERVICE CHARGES**

7. **ACTION/DISCUSSION ITEMS**

   A. Consideration of Resolution No. 254 Adopting New Water Use Rates and Service Charges.

      Recommendation: Adopt Resolution 254 Approving New Water Use Rates and Service Charges.

   B. Consideration of Resolution No. 255 Adopting a New Capacity Charge for Water System Connection.

      Recommendation: Adopt Resolution No. 255 Approving a New Charge for Water System Connection.

C. Consideration of Rescheduling the November 12, 2018 Regular Meeting of the Board of Directors.

Recommendation: Reschedule the November 12, 2018 Regular Board Meeting to 5:30 p.m. on November 13, 2018.

8. GENERAL MANAGER'S REPORT

9. ATTORNEY'S COMMENTS

10. BOARD MEMBER COMMENTS

11. ADJOURNMENT

POSTED: Thursday, October 11, 2018.

President William R. Rojas, Presiding.

Any qualified person with a disability may request a disability-related accommodation as needed to participate fully in this public meeting. In order to make such a request, please contact Mr. Greg B. Galindo, Board Secretary, at (626) 330-2126 in sufficient time prior to the meeting to make the necessary arrangements.

Note: Agenda materials are available for public inspection at the District office or visit the District's website at www.lapuentewater.com.

RESOLUTION NO. 254

A RESOLUTION OF THE BOARD OF DIRECTORS OF LA PUENTE VALLEY COUNTY WATER DISTRICT ADOPTING NEW WATER USE RATES AND SERVICE CHARGES

WHEREAS, the La Puente Valley County Water District ("the District") provides water service to residents and businesses within its boundaries, most of which is within the boundaries of the City of La Puente; and

WHEREAS, the District approved Resolution 200 in August 2011 which adopted new rates and charges for water service and instituted a multiyear (5 year) rate increase plan to cover projected District expenses; and

WHEREAS, the District has not increased rates for water service since September 2015, which was the last year of the multiyear rate increase plan adopted in August 2011; and

WHEREAS, the Board of Directors is concerned about the increased expenses for the continued operation of the District's water system, including significant increased costs for the procurement of replacement water from the Main San Gabriel Groundwater Basin Watermaster ("Watermaster"), recently enacted Watermaster groundwater pumping assessments, and necessary capital improvement projects identified by the District's recently completed Ten-Year Water Master Plan, in addition to regular rising operation and maintenance costs; and

WHEREAS, the District's Board of Directors directed District Staff to have a water rate study prepared to provide a recommendation for water rates and service charges (collectively referred to as "water rates") which will generate sufficient revenue to meet the District's cost of providing water service to its customers over the next five years; and

WHEREAS, District Staff engaged Raftelis Financial Consultants, Inc. to conduct a thorough review of the financial needs of the District to prepare a water rate study for the purposes of recommending a fair and equitable water rate structure that complies with current laws governing the setting of water rates, including but not limited to, Article 13D, Section 6 of the California Constitution ("Proposition 218"), and that will provide adequate revenues to meet the District's water system financial obligations (the "Water Rate Study"); and

WHEREAS, on July 9, 2018, at a duly noticed regular meeting of the District's Board of Directors, District Staff presented the Water Rate Study dated July 6, 2018, to the District's Board for consideration, after which the District's Board accepted the Water Rate Study for receipt and filing; and

WHEREAS, a full, true and correct copy of the Water Rate Study is hereby incorporated herein by this reference and attached hereto as Exhibit "**A**"; and

WHEREAS, on August 13, 2018, the District's Board of Directors considered and approved a written "Notice of Proposed Adjustments to Water Use Rates and Charges" and directed District Staff to provide said notice as required by law for a public hearing to be conducted on October 15, 2018, to consider adoption of the water rates proposed in the Water Rate Study; and

WHEREAS, pursuant to Proposition 218, all customers and property owners within the District's service area were mailed a notice of the public hearing at least 45 days prior to October 15, 2018, which notice contained: (1) the amount of the proposed rate adjustment, (2) the basis on which the rate adjustment is calculated, (3) the reason for the rate increase, and (4) the date, time and location of a public hearing at which the proposed rates will be considered for adoption, together with an explanation of the right to submit written protests to the proposed increase; and

WHEREAS, a full, true and correct copy of the "Notice of Proposed Adjustments to Water Use Rates and Charges" is incorporated herein by this reference and attached hereto as Exhibit "**B**"; and

WHEREAS, on October 15, 2018, prior to the adoption of this resolution, the District's Board of Directors conducted and concluded a duly noticed public hearing concerning the proposed water rate increase as set forth in the Water Rate Study and considered all written and oral comments presented; and

WHEREAS, at the close of such public hearing, no majority written protest to the proposed increase was presented under Proposition 218; and

WHEREAS, the proposed rate increase is Statutorily Exempt under the California Environmental Quality Act ("CEQA") Guidelines section 15273 as it applies only to rates to obtain funds necessary to operate and maintain the District's water system; and

WHEREAS, all legal prerequisites to adoption of a water rate increase have occurred prior to the adoption of this Resolution.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF LA PUENTE VALLEY COUNTY WATER DISTRICT DOES RESOLVE, DETERMINE, FIND, AND ORDER AS FOLLOWS:

SECTION 1. The District's Board of Directors (the "Board") hereby finds that the above recitations are true and correct and, accordingly, are incorporated as a material part of this Resolution; and

SECTION 2. The Board hereby finds that the water rate increase is Statutorily Exempt pursuant to CEQA Guidelines section 15273 as it applies only to rates to obtain funds necessary to operate and maintain the District's water system; and

SECTION 3. The Board finds and determines that the adjustment of the water rates is in the best interest of the District and its constituents and complies with current laws, including but not limited to, Proposition 218; and

SECTION 4. The Board does hereby approve the water rate increase as set forth in the Water Rate Study, a copy of which is attached to this Resolution as Exhibit "**A**," and directs District staff to implement such water rates as set forth therein effective immediately.

ADOPTED, SIGNED AND APPROVED by the Board of Directors of La Puente Valley County Water District at a meeting held on October 15, 2018.

Ayes:
Nays:
Abstains:
Absent:

_____
William Rojas, President
Board of Directors
La Puente Valley County Water District

ATTEST:

_____
Greg B. Galindo, Board Secretary

EXHIBIT A

La Puente Valley County Water District

Water Rate Study

Final Report / July 2018

RAFTELIS

July 6, 2018

Mr. Greg Galindo
General Manager
La Puente Valley Water District
112 N 1st Street
La Puente, CA 91744

Subject: Water Rate Study Report

Dear Mr. Galindo,

Raftelis is pleased to present this water rate study report. The Study involved a comprehensive review of the District's Financial Plan, as well as an assessment of costs associated with serving water to each class and tier using Cost of Service principles.

The report includes a brief Executive Summary followed by a detailed discussion of Study assumptions used in the Financial Plan and an in-depth rate derivation.

It was a pleasure working with you and we wish to express our thanks for your support during the study. If you have any questions, please call me at (714) 351-2013

Sincerely,
RAFTELIS FINANCIAL CONSULTANTS, INC.

Steve Gagnon, PE
Manager

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1 EXECUTIVE SUMMARY

1.1 BACKGROUND

In the Fall of 2017, the La Puente Valley County Water District (District) engaged Raftelis to conduct a Water Rate Study (Study) which included a five-year Financial Plan. This report presents the Financial Plan and the resulting rates for implementation in October of 2018.

This Executive Summary contains a description of the rate study methodology and resulting water rates. Detailed assumptions used in the Financial Plan, Financial Plan results and full rate derivations are provided in Sections 2 through 5. The District wishes to establish fair and equitable rates that:

1. Meet the District's fiscal needs in terms of operational expenses, reserve goals and capital investment to maintain the system;
2. Are fair and equitable, and therefore proportionately allocate the costs of providing service in accordance with California Constitution article XIII D, section 6 (commonly referred to as Proposition 218);
3. Result in stable charges over time for customers; and
4. Promote water conservation.

1.2 METHODOLOGY

The water rates presented in this report were developed using Cost of Service principles set forth by the American Water Works Association M1 Manual titled *Principles of Water Rates, Fees and Charges* (AWWA M1 Manual). Cost of Service principles endeavor to distribute costs to customer classes in accordance with the way each class uses the water system. This methodology is described in detail in Sections 4 and 5. The Base-Extra Capacity Method of the AWWA M1 Manual was used to distribute costs to customer classes and tiers. This method separates costs into four main[1] components: (1) base costs (which include supply and delivery), (2) extra capacity costs, (3) customer costs, and (4) direct fire protection costs. Base costs are costs associated with meeting average daily demand needs and include Operations and Maintenance (O&M) costs and capital costs designed to meet average load conditions. Extra capacity costs are costs (both operating and capital costs) associated with meeting peak water demand. Customer costs are costs associated with serving customers, such as meter reading, billing and customer service, etc. Direct fire protection costs are related solely to the fire protection function of a water system, such as fire hydrant repair and maintenance.

[1] There can be other cost components such as conservation and supply; however, the four mentioned are the most common.

1.3 RESULTS AND RECOMMENDATIONS

Table 1-1 shows the revenue adjustments selected by the Board of Directors. The revenue adjustment is the additional amount of revenue collected compared to the prior fiscal year[2]. Note that the District's fiscal year is a calendar year as shown in Table 1-1.

Table 1-1: Recommended Yearly Revenue Adjustments

	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Effective Month	October	October	October	October	October
Revenue Adjustment	15.5%	7.5%	7.5%	7.5%	7.5%

Factors Affecting Revenue Adjustments

The following items affect the District's revenue requirement (i.e., costs) and thus its rates. The District's expenses include O&M expenses and capital expenses.

- **O&M expenses:** The District's O&M expenses increase each year. Notably, the District expects the Water Resource Development Assessment, which is a rate the District pays to the Main San Gabriel Watermaster for groundwater production is expected to increase approximately 170% over the next five years. The District will purposely use reserves, as shown by the decline in cash reserves in Section 2, to minimize customer rate impacts. Using reserves to fund operating and capital costs lowers the amount of required rate revenue (and customer bills). However, given our financial plan assumptions we project that reserves will fall within Board approved policies at the end of the Study period.

- **Water System Capital Investment:** The District plans to invest approximately four million dollars in capital infrastructure over the next five years, with nearly three million dollars paid for by rate revenue.

1.4 WATER

Proposed Water Rates

Note that in this report, the terms fee and charge are often used interchangeably. There are two changes to the District's rates proposed in this Study; we propose to 1) lower the Tier 1 breakpoint from 25 hcf to 20 hcf, and 2) create separate rates for three customer groups which contain the following classes:

1) Single Family,
2) Multi-family, Commercial and Industrial and
3) Public Authority and Irrigation.

The above groups replace the current customer groups which contain

1) Single Family and
2) Multi-family, Commercial and Irrigation.

[2] This assumes that the rates were implemented for the full fiscal year. In the case of FY 2018 with rates effective in October, the District will not realize the full percentage revenue adjustment.

District Staff and Raftelis reduced the Tier 1 breakpoint to reflect an updated estimate of indoor water usage. Using District water data Raftelis calculated the minimum bi-monthly water use during the year, which occurs during the winter and approximates indoor water use since outdoor irrigation is assumed to be minimal.

We revised the customer classes based on peaking factors also derived from the District's water use data. Peaking factors – which are calculated as the maximum bi-monthly use divided by average bi-monthly use – reflect how each customer class uses the water system. We found the Public Authority and Irrigation peaking factors to be identical and Multi-family, Commercial and Industrial classes to be within 4% of each other, which warrants combining these classes. Peaking factors vary based on the data set used (time period) and measuring frequency (bi-monthly, monthly, daily, etc.).

The District's rate structure is composed of two components: 1) a fixed bi-monthly Meter Service Charge, and 2) a variable Volumetric Rate. Each of these charges is described below.

Fixed Charge

The City's proposed Meter Service Charge is composed of two components (the first which is named the same as the overall charge):

$$Total\ Fixed\ Meter\ Service\ Charge = 1)\ Meter\ Service\ Charge + 2)\ Customer\ Service\ Component$$

The first component is the Meter Service Charge and is based on the meter size serving a property. The Meter Service Charge is calculated to recover the cost to maintain and replace meters as well as a portion of extra-capacity related costs (i.e., costs associated with meeting system capacity beyond that required for average daily demand). This cost is proportional to the size of the meter and goes up with meter size. The second component is the customer service component. This component recovers costs associated with answering customer calls and billing customers. These costs are not related to the size of the meter. The full derivation of the total charge is described in Section 5, and the ***total*** fixed Meter Service Charge is shown in Table 1-2. The District proposes to collect a slightly lower amount of fixed revenue compared to its current fixed revenue collection, which lowers the charges for 5/8 - inch meters. The charges for larger meters sizes increase in proportion to the hydraulic capacity (safe operating flow) through each meter size.

Table 1-2: Current and Proposed Bi-Monthly Meter Service Charge

Line no.	Meter Size	Current Charge	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
1	5/8"	$31.02	$30.68	$32.98	$35.46	$38.12	$40.97
2	3/4"	$37.19	$39.64	$42.62	$45.81	$49.25	$52.94
3	1"	$49.54	$57.57	$61.89	$66.53	$71.52	$76.88
4	1.5"	$100.50	$102.39	$110.07	$118.32	$127.19	$136.73
5	2"	$127.36	$156.17	$167.88	$180.47	$194.00	$208.56
6	3"	$245.94	$299.58	$322.05	$346.20	$372.16	$400.08
7	4"	$358.35	$460.92	$495.48	$532.65	$572.59	$615.54
8	6"	$682.60	$909.08	$977.26	$1,050.55	$1,129.34	$1,214.04
9	8"	$1,006.84	$1,446.87	$1,555.38	$1,672.04	$1,797.44	$1,932.25
10	10"	$1,006.84	$2,074.29	$2,229.87	$2,397.11	$2,576.89	$2,770.16

Private Fire Charges

The District's current and proposed private fire charges are shown in Table 1-3. The proposed private charges are proportional to the potential flow through each connection size.

Table 1-3: Current and Proposed Private Fire Charges

Meter Size (inches)	Current Charges	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
5/8"	NA	NA	NA	NA	NA	NA
3/4"	NA	NA	NA	NA	NA	NA
1"	$19.19	$7.46	$8.01	$8.62	$9.26	$9.96
1.5"	$24.10	$9.02	$9.70	$10.42	$11.21	$12.05
2"	$29.99	$11.72	$12.60	$13.54	$14.56	$15.65
3"	$45.69	$21.41	$23.01	$24.74	$26.60	$28.59
4"	$63.35	$38.12	$40.98	$44.05	$47.36	$50.91
6"	$112.42	$98.09	$105.45	$113.36	$121.86	$131.00
8"	$171.31	$201.54	$216.65	$232.90	$250.37	$269.15
10"	$240.01	$261.23	$280.82	$301.88	$324.53	$348.86

Volumetric Rate

Table 1-4 and Table 1-5 show the current and proposed volumetric rates by customer class respectively. The rates are designed to recover the costs associated with serving each class and tier as discussed in Sections 4 and 5.

Table 1-4: Current Volumetric Rates ($/ hcf)

Current Rates	Total Tier 1 Rate ($/hcf)	Total Tier 2 Rate ($/hcf)	Pumping Rate
Single Family Residential			
Zone 1	$1.61	$2.32	
Zone 2	$1.81	$2.52	$0.20
Zone 3	$1.98	$2.69	$0.17
Zone 4	$1.86	$2.57	$0.25
Zone 5	$2.12	$2.83	$0.14
Multi-family, Commercial & Irrigation	**Uniform Rate (No Tiers)**		
Zone 1	$1.95		
Zone 2	$2.15		$0.20
Zone 4	$2.20		$0.25

Table 1-5 shows the proposed volumetric rates by pumping zone for each class and calendar year.

Table 1-5: Volumetric Rates ($ / hcf)

Single Family Residential

	CY 2018		CY 2019		CY 2020		CY 2021		CY 2021	
Zone	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**
Zone 1	$1.74	$2.97	$1.87	$3.19	$2.01	$3.43	$2.16	$3.68	$2.33	$3.96
Zone 2	$1.94	$3.16	$2.08	$3.40	$2.24	$3.65	$2.41	$3.93	$2.59	$4.22
Zone 3	$2.13	$3.36	$2.29	$3.61	$2.46	$3.88	$2.65	$4.17	$2.85	$4.48
Zone 4	$1.97	$3.20	$2.12	$3.44	$2.28	$3.69	$2.45	$3.97	$2.64	$4.27
Zone 5	$2.13	$3.36	$2.29	$3.61	$2.46	$3.88	$2.65	$4.17	$2.84	$4.48

Multi-family, Commercial and Industrial

Zone	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Zone 1	$2.08	$2.23	$2.40	$2.58	$2.77
Zone 2	$2.27	$2.44	$2.63	$2.82	$3.03
Zone 4	$2.31	$2.48	$2.67	$2.87	$3.08

Public Authority and Irrigation

Zone 1	$2.29	$2.46	$2.65	$2.84	$3.06
Zone 2	$2.49	$2.67	$2.87	$3.09	$3.32
Zone 4	$2.52	$2.71	$2.91	$3.13	$3.37

2 FINANCIAL PLAN ASSUMPTIONS AND RESULTS

This section describes the Financial Plan assumptions and Financial Plan results.

2.1 WATER SYSTEM BACKGROUND

The La Puente Valley County Water District (District) was organized in August 1924 under the provisions of the County Water District Act (Statutes 1913, P 1049). Under the provisions of this statute the people of any area, which may include either incorporated or unincorporated areas within a county, or both, may organize a district for the purpose of serving its inhabitants with water for all purposes, including domestic, agricultural, and industrial uses. The assets and property of the District are publicly owned, that is, belong to the people in the District in the same manner as property of a City is owned by the people in the City. Other water districts in the San Gabriel Valley that were formed under the same statute and share other similarities include San Gabriel County Water District and Valley County Water District.

The District's service area includes a portion of the City of La Puente and the City of Industry. Approximately 62% of the District's service area lies within the City of La Puente and 38% in the City of Industry. The District has approximately 2,500 active connections serving approximately 9,600 people. The District's water system includes approximately 34.2 miles of distribution and transmission mains, 3 active wells, 6 booster pump stations, and 3 reservoirs. Table 2-1 shows a summary of the District's infrastructure.

Table 2-1: Summary of District Infrastructure

La Puente Valley County Water District	
Population in Service Area	9,600
Total Acreage in Service Area	1,600
Number of Active Water Services	2,500
Number of Reservoirs	3
Number of Active Wells	3
Number of Booster Pump Stations	6
Total Gallons of Water Storage	4.9 million
Number of Pressure Zones	5
Total Distance of Water Mains in System (Miles)	34.2
Average Annual Water Deliveries (Acre Feet)	1,690
Average Water System Daily Use (Million Gallons)	1.51

The District's primary source of supply is from three groundwater wells that produce water from the adjudicated Main San Gabriel Basin (MSGB). The MSGB is bounded by the San Gabriel Mountains to the north, San Jose Hills to the east, Puente Hills to the south, and by a series of hills and the Raymond Fault to the west. The District has 1,130.40 acre-feet of prescriptive groundwater production rights that equals (0.57197%) of all adjudicated water rights in the MSGB. The District's annual production rights is dependent on the MSGB Annual Safe Yield. On average, approximately 40% of the water needed to meet the annual demand of District customers requires the District to either lease additional groundwater production rights or purchase imported water for replenishment.

The District also operates the Baldwin Park Operable Unit - The District's well field is located within an area of the MSGB that has experienced extensive groundwater contamination. This area of the MSGB is designated as a Superfund Site, known as the Baldwin Park Operable Unit (BPOU). The District constructed and now manages and operates a groundwater treatment facility to remedy the BPOU groundwater contamination.

In 2002, the District entered into the BPOU Agreement to address the contamination of groundwater in the BPOU from which the United States Environmental Protection Agency (EPA) named certain

entities as potentially responsible parties (PRPs) and local water agencies (Water Entities) of which the District is included. The BPOU Agreement provided funding from the PRPs to fund the reasonable and necessary costs of design, construction, operation, maintenance and management of District's groundwater treatment facilities. The BPOU Agreement requires the District to pump and treat water at a target rate of 2,250 gallons per minute, with any water that is surplus to the District's needs to be delivered wholesale to neighboring investor owned Suburban Water Systems. In May of 2017 a new BPOU Agreement was entered into by the same parties to extend the funding of groundwater cleanup to May 2027.

The District also operates and manages the City of Industry Waterworks System (CIWS) under agreement with the City of Industry. The current agreement's term expires in 2024. The CIWS is a potable water system that serves approximately 1,860 water services, mostly within the unincorporated area of Los Angeles County known as Avocado Heights and a small portion of the City of Industry. The CIWS water rates are not part of this study.

The District is currently working on the design for phase 1 of its recycled water system to provide irrigation water service to 10 locations in the southern portion of its water system. The project is expected to be completed in 2019 and is expected to deliver 50 acre-feet per year of recycled water. Recycled water may decrease the demand for potable water slightly, which has been accounted for in this Study.

The District has entered into an agreement with Northrop Grumman to manage and operate a groundwater treatment facility, which is referred to as the Puente Valley Operable Unit Intermediate Zone, that will be located adjacent to the District's service area. Construction of this facility is scheduled to begin in 2018 with the facility anticipated to be permitted and in service by 2020. This proposed facility will provide treated groundwater to the District and neighboring Suburban Water.

2.2 FINANCIAL PLAN ASSUMPTIONS

Number of accounts

Raftelis created a five-year Financial Plan which models anticipated revenue and expenses. To calculate the projected revenue (without rate adjustments), we multiply the number of accounts by the bi-monthly (fixed) Meter Service Charge and multiply the total water use in each tier and pump zone by the Volumetric Rate. Table 2-2 shows the projected number of water accounts, including private fire connections by meter size and class for the Study Period. The District's fiscal year (FY) is a calendar year (CY) and calendar year 2018 is the "test year." The test year is the year with which we develop rates in rate setting terminology. Raftelis projected the number of meters using District provided CY[3] 2016 meter data. The number of accounts are used to forecast the amount of fixed revenue the District will receive from fixed bi-monthly Meter Service Charges.

[3] The District's fiscal year is the same as the calendar year.

Table 2-2: Projected Accounts by Meter Size (FY 2019)

Customer Class	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Single Family Residential	1,949	1,971	1,994	1,995	1,996
Multi-family	54	54	54	54	54
Commercial	280	280	280	280	280
Industrial	7	7	7	7	7
Irrigation	86	86	86	86	86
Public Authority	27	27	27	27	27
Total	**2,403**	**2,425**	**2,448**	**2,449**	**2,450**

Meter Size	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
5/8"	1,450	1,450	1,450	1,450	1,450
3/4"	653	653	653	653	653
1"	161	183	206	207	208
1.5"	20	20	20	20	20
2"	98	98	98	98	98
3"	7	7	7	7	7
4"	10	10	10	10	10
6"	4	4	4	4	4
8"	-	-	-	-	-
10"	-	-	-	-	-
Total	**2,403**	**2,425**	**2,448**	**2,449**	**2,450**

Private Fire Connections

Meter Size	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
1"	0	0	0	0	0
1.5"	0	0	0	0	0
2"	0	0	0	0	0
3"	0	0	0	0	0
4"	10	10	10	10	10
6"	6	6	6	6	6
8"	24	24	24	24	24
10"	2	2	2	2	2
12"	2	2	2	2	2
Subtotal	**44**	**44**	**44**	**44**	**44**

Water Use Growth Assumptions

The volumetric revenue calculated for each of the fiscal years in the Financial Plan is a function of account growth, water use trends, and existing rates. Table 2-3 shows the assumed water demand growth for residential and non-residential classes. Like most water purveyors, the District's water use declined during the recent drought due to conservation outreach programs. The District will likely see an increase in water use as conservation pressures ease. The Municipal Water District of Orange County saw a 6% increase in water use from FY 2016 to FY 2017[4]. Though the District is not within MWDOC's service area it has assumed a reasonable and similar rebound in water use for CY

[4] Presentation from General Manager of MWDOC to Mesa Water District.

2018, a smaller increase in CY 2019 and a small decrease for non-residential classes in CY 2020 due to the anticipated recycled water system completion (which will serve recycled water to ten high water use customers).

Table 2-3: Account Growth and Water Use Assumptions

Water Demand Growth	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Residential Single Family	107%	103%	100%	100%	100%
All Other Classes	107%	103%	94%	100%	100%

Water Use

Table 2-4 shows estimated water use by customer class for the Study Period. The water use was projected from CY 2016 water use data by escalating this data using the water use growth trends shown in Table 2-3. The water use is shown in hundred cubic feet (hcf). One hundred cubic feet equals 748 gallons. Table 2-5 shows the percent of accounts and water use by customer class.

Table 2-4: Water Use Projections in Hundred Cubic Feet by Customer Class

Residential Single Family	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Tier 1	227,626	234,455	234,455	234,455	234,455
Tier 2	65,822	67,797	67,797	67,797	67,797
Subtotal	293,448	302,251	302,251	302,251	302,251
Multi-family	85,656	88,226	88,226	88,226	88,226
Commercial	96,144	99,028	92,790	92,790	92,790
Industrial	40,934	42,162	39,506	39,506	39,506
Irrigation	98,458	101,412	95,023	95,023	95,023
Public Authority	38,710	39,871	37,359	37,359	37,359
Subtotal Non-SFR	359,902	370,699	352,904	352,904	352,904
Subtotal	**653,350**	**672,951**	**655,155**	**655,155**	**655,155**

Table 2-5: Percent of Accounts and Water Use by Class

Customer Class	No. of Accounts	Percent of Accounts	Water Use	Percent of Water Use
Single Family	1,949	81%	293,448	45%
Multi-family	54	2%	85,656	13%
Commercial	280	12%	96,144	15%
Industrial	7	0%	40,934	6%
Irrigation	86	4%	98,458	15%
Public Authority	27	1%	38,710	6%
Subtotal	**2,403**	**100%**	**653,350**	**100%**

Inflationary Cost Assumptions

To ensure that future Operation and Maintenance (O&M) costs are reasonably projected, we make informed assumptions about inflationary factors, water costs and water use. Table 2-6 shows the inflationary categories used to escalate the District's O&M expense budget – which is part of the Financial Plan. The inflationary factors shown in Table 2-6 reflect long-term averages for general and capital (construction) inflation and energy prices. The District provided the salary and benefit inflationary factors and reflect employee salaries and benefit obligations.

Table 2-6 also shows assumed wholesale water purchase cost inflation. The District pays a Water Resource Development Assessment to the Main San Gabriel Watermaster for groundwater produced. The District also leases annual groundwater production rights to avoid Watermaster's Replacement Water Assessment. The lower portion of the table shows the assumed increases in the groundwater lease rate for replacement water.

Table 2-6: Inflationary Assumptions

Escalation Factors	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
General	2.0%	2.0%	2.0%	2.0%	2.0%
Salary	2.0%	2.0%	2.0%	2.0%	2.0%
Benefits	2.0%	2.0%	2.0%	2.0%	2.0%
Electricity	2.0%	2.0%	2.0%	2.0%	2.0%
Capital	3.0%	3.0%	3.0%	3.0%	3.0%
Production Assesment Increase Rates					
Administrative Assessment ($/AF)	0.0%	20.0%	0.0%	0.0%	0.0%
Water Resource Development Assessment (RDA) $/AF	75%	50%	33%	25%	9%
Groundwater Production Rights Lease Rate					
Lease 1	10.3%	3.8%	4.0%	4.0%	4.0%
Lease 2	3.8%	4.0%	4.0%	4.0%	4.0%
Lease 3	2.6%	4.0%	4.0%	5.1%	4.0%

Groundwater Production and Lease Costs

The assumptions shown in Table 2-6 were incorporated into the groundwater production assessment and groundwater lease costs shown calculated in

Table 2-7. Line 6 and Lines 23 through 26 in

Table 2-7 describe how each line was calculated in parentheses.

Table 2-7: Groundwater Production and Lease Costs

Production Assessments		CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Line No.	(A)	(B)	(C)	(D)	(E)	(F)
1	Production (AF)	1,579	1,661	1,617	1,617	1,617
2	Administrative Assessment $/AF	$15.00	$18.00	$18.00	$18.00	$18.00
3	In-Lieu Assessment $/AF	$10.00	$10.00	$10.00	$10.00	$10.00
4	Water Resource Development Assessment (RDA) $/AF	$70.00	$105.00	$140.00	$175.00	$190.00
5	Total Assessment Rate $/AF	$95.00	$133.00	$168.00	$203.00	$218.00
6	**Total Cost of Assessments (Line 5 x Line 1)**	**$149,989**	**$220,935**	**$271,696**	**$328,299**	**$352,557**
	Leased Groundwater Costs					
7	Watermaster Safe Yield (AF)	150,000	150,000	150,000	150,000	170,000
8	District Production Right (AF)	858	858	858	858	972
9	Carryover Rights	224	82	-	-	-
10	Lease 1 (AF)	335	335	335	335	380
11	Lease 2 (AF)	44	44	44	44	50
12	Lease 3 (AF)	200	250	250	250	300
13	Total Rights for Year	1,661	1,569	1,487	1,487	1,702
14	Production (AF) (From Above)	1,579	1,661	1,617	1,617	1,617
15	Over Production/Under Production (in paratheses)	(82)	92	130	130	(85)
16	Cyclic Storage Used (AF)	-	92	130	130	-
17	**Groundwater Production Rights Lease Rate**					
18	Lease 1 Rate ($/AF)	$699.79	$726.18	$755.23	$785.44	$816.85
19	Lease 2 Rate ($/AF)	$726.18	$755.23	$785.44	$816.85	$849.53
20	Lease 3 Rate ($/AF)	$726.18	$755.23	$785.44	$825.83	$858.86
21	Prepurchased Cyclic Storage Rate ($/AF)	$251.90	$251.90	$251.90	$251.90	$251.90
22	**Leased Rights - Cost**					
23	Lease 1 Cost (Line 10 x Line 4)	$234,699	$243,550	$253,292	$263,424	$310,489
24	Lease 2 Cost (Line 11 x Line 5)	$31,872	$33,147	$34,473	$35,852	$42,257
25	Lease 3 Cost (Line 12 x Line 6)	$145,236	$188,807	$196,359	$206,458	$257,658
26	Cyclic Storage Cost (Line 15 x Line 10)	$0	$23,155	$32,748	$32,748	$0
26	**Total Cost of Leased Groundwater**	**$411,807**	**$488,659**	**$516,872**	**$538,481**	**$610,404**

O&M Expenses

The City's O&M budget, including groundwater costs in line 1, is shown by calendar year[5] in Table 2-8. The Financial Plan Study Period is from CY 2018 to 2022. The O&M budget incorporates the inflationary factors discussed earlier in this section.

[5] The District's fiscal year is on a calendar year basis.

Table 2-8: Projected O&M Expenses

Line No.	Total Operation and Maintenance Costs	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
1	Cost of Goods Sold (includes Groundwater Costs)	$807,000	$982,800	$1,054,700	$1,134,100	$1,222,500
2	Labor and Benefits	$1,959,600	$2,033,100	$2,287,100	$2,375,600	$2,464,700
3	General Plant	$42,300	$42,400	$42,500	$42,600	$42,700
4	Transmission and Distribution	$90,500	$89,600	$90,200	$90,800	$91,400
5	Field Support and Vehicles	$98,800	$87,200	$88,800	$90,400	$92,100
6	Regulatory Compliance	$51,500	$45,100	$45,900	$46,700	$47,600
7	District Office Expenses	$61,800	$63,100	$64,400	$65,700	$67,100
8	Billing, Insurance and Proffessional Services	$250,300	$247,100	$248,900	$250,700	$252,500
9	Training, Public Outreach and Other Administrative	$140,400	$106,100	$136,800	$102,500	$133,200
10	**Total**	**$3,502,200**	**$3,696,500**	**$4,059,300**	**$4,199,100**	**$4,413,800**

Capital Improvement Plan (CIP)

Table 2-9 shows the District's CIP summary. The District is funding capital investment primarily through rate revenue (also known as PAY-GO funding), which is shown in Line 12. Grants, capacity fees and debt financing (shown in Lines 8, 9 and 11 respectively) will also be used to fund the District's CIP.

Table 2-9: Detailed Capital Improvement Plan

Line No.	Project	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
1	Alternative Supply (Growth Related)	$250,000	$1,493,500	$0	$0	$0
2	R&R (Capacity, Fire Suppression)	$50,000	$0	$0	$0	$0
3	R&R (Gen. Fire Suppression)	$10,000	$10,300	$10,609	$10,927	$11,255
4	R&R (Source of Supply, Capacity)	$0	$0	$159,135	$109,273	$0
5	R&R (Capacity)	$140,000	$339,900	$270,530	$426,164	$461,459
6	R&R (Customer)	$70,000	$257,500	$53,045	$54,636	$56,275
7	Capital Outlay (Vehicles and Equipment)	$100,000	$108,150	$106,090	$92,882	$73,158
8	Anticipated Grant Funding	$0	-$363,590	$0	$0	$0
9	Developer Fees (Capacity Fees)	-$5,000	-$5,150	-$5,305	-$5,464	-$5,628
10	**Total CIP Expenditure**	**$615,000**	**$1,840,610**	**$594,104**	**$688,418**	**$596,520**
11	Debt Funded	$0	$1,448,000	$0	$0	$0
12	**Rate Funded CIP**	**$615,000**	**$392,610**	**$594,104**	**$688,418**	**$596,520**

Existing and Proposed Debt Service

The District does not currently have existing debt. However, it plans to issue approximately 1.6million dollars in debt during CY 2019 to fund capital projects. The approximate debt proceeds are shown in line 11 of Table 2-9.

Financial Plan

For the five-year Financial Plan Study Period from CY 2018 to CY 2022, we projected operating revenue using the assumed number of accounts and water use. We projected operating expenses using the inflationary factors and the District's CY 2018 budget and modeled debt service coverage ratios and resulting yearly cash balances. The Financial Plan helps determine overall revenue adjustments required to ensure water enterprise financial stability. Revenue adjustments represent the average increase in rates as a whole; rate changes for individual classes will depend on the Cost

of Service analysis which allocates costs to each customer class. Therefore, the revenue adjustment may not be the same as the average bill impact for CY 2018 proposed rates for each customer class. The revenue adjustments are described below and the Cost of Service analysis and bill impacts are described in Sections 4 and 6 respectively.

Revenue Adjustments

The proposed revenue adjustments help ensure adequate revenue to fund operating expenses, capital expenditures, and compliance with bond covenants. Financial Plan modelling assumes the revenue (i.e. rate) adjustment will occur in October 2018. The proposed revenue adjustments would enable the District to cover operating costs, execute the CIP shown in Table 2-9 and exceed the assumed debt service coverage requirement of 125% over the five-year Study Period.

Table 2-10 shows the proposed revenue adjustments. The rates presented in Section 5 are based on these revenue adjustments.

Table 2-10: Proposed Rate Adjustments

	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Effective Month	October	October	October	October	October
Revenue Adjustment	15.5%	7.5%	7.5%	7.5%	7.5%

Cash Flow Analysis

Table 2-11 shows District cash flows over the study period assuming the revenue adjustments shown in Table 2-10. Line 3 shows the additional revenue resulting from the revenue adjustments. Line 11 shows total District revenue including non-operating revenue. Line 19 shows the yearly ending cash flow after subtracting expenses, debt service and capital expenses from revenue. Note that the District has a small yearly operating deficit in line 19 – meaning revenue does not cover costs. The District is minimizing customer impacts by using reserves in the near term. Line 22 shows that the District meets the assumed debt service coverage requirement of 125% during the Study Period. Debt service coverage is calculated with revenue before capital expenses (Line 11 minus Line 16).

Table 2-11: Five-Year Water Operating Cash Flow

Line No.		CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
1	Service Charge Revenue (Incl Private Fire)	$653,500	$644,595	$651,431	$651,728	$652,026
2	Volumetric Revenue	$1,193,500	$1,302,609	$1,267,408	$1,267,408	$1,267,408
3	Additional Revenue from Revenue Adjustments	$71,571	$343,986	$508,311	$690,454	$886,311
4	**Other Revenue**					
5	Management Fees	$261,700	$257,500	$474,100	$480,000	$486,000
6	Taxes and Assessments	$215,000	$215,000	$215,000	$215,000	$215,000
7	Other Miscellaneous Revenue	$164,830	$163,739	$172,270	$181,108	$180,551
8	PVOU Billing	$42,900	$130,582	$382,222	$427,165	$433,914
9	BPOU Billing	$278,800	$265,220	$278,220	$279,920	$289,530
10	City of Industry Billing	$715,800	$636,272	$646,685	$676,996	$703,614
11	**Total Revenue**	**$3,597,601**	**$3,959,502**	**$4,595,647**	**$4,869,779**	**$5,114,353**
12	**O&M Expenses**					
13	COGS (Purchased Water)	$807,000	$982,800	$1,054,700	$1,134,100	$1,222,500
14	Labor and Beneftis	$1,959,600	$2,033,100	$2,287,100	$2,375,600	$2,464,700
15	Other Expenses (General Plant, T&D, Vehicles, Insurance)	$735,600	$680,600	$717,500	$689,400	$726,600
16	**Total Expenses**	**$3,502,200**	**$3,696,500**	**$4,059,300**	**$4,199,100**	**$4,413,800**
17	Proposed Debt Service	$0	$88,298	$117,731	$117,731	$117,731
18	Rate Funded CIP	$615,000	$392,610	$594,104	$688,418	$596,520
19	**Cash Flow**	**$ (519,599)**	**$ (217,906)**	**$ (175,488)**	**$ (135,469)**	**$ (13,697)**
20	Cash Starting Balance	$3,703,271	$3,183,672	$2,965,766	$2,790,278	$2,654,808
21	Ending Balance	$3,183,672	$2,965,766	$2,790,278	$2,654,808	$2,641,111
22	Debt Coverage Ratio	#N/A	2.98	4.56	5.70	5.95

Graphical Financial Plan

Figure 2-1 through 2-3 display the Financial Plan information shown in Table 2-10 in a graphical format. Figure 2-1 shows the District's expenses in stacked bars and the current and proposed revenue in the red and green lines respectively. The stacked bars show the City's expenses broken down into the categories shown in the legend. The green portion of the stacked bar below the x-axis shows the small operating yearly deficit. The District is minimizing customer bill impacts by drawing down reserves.

Figure 2-1: Financial Plan

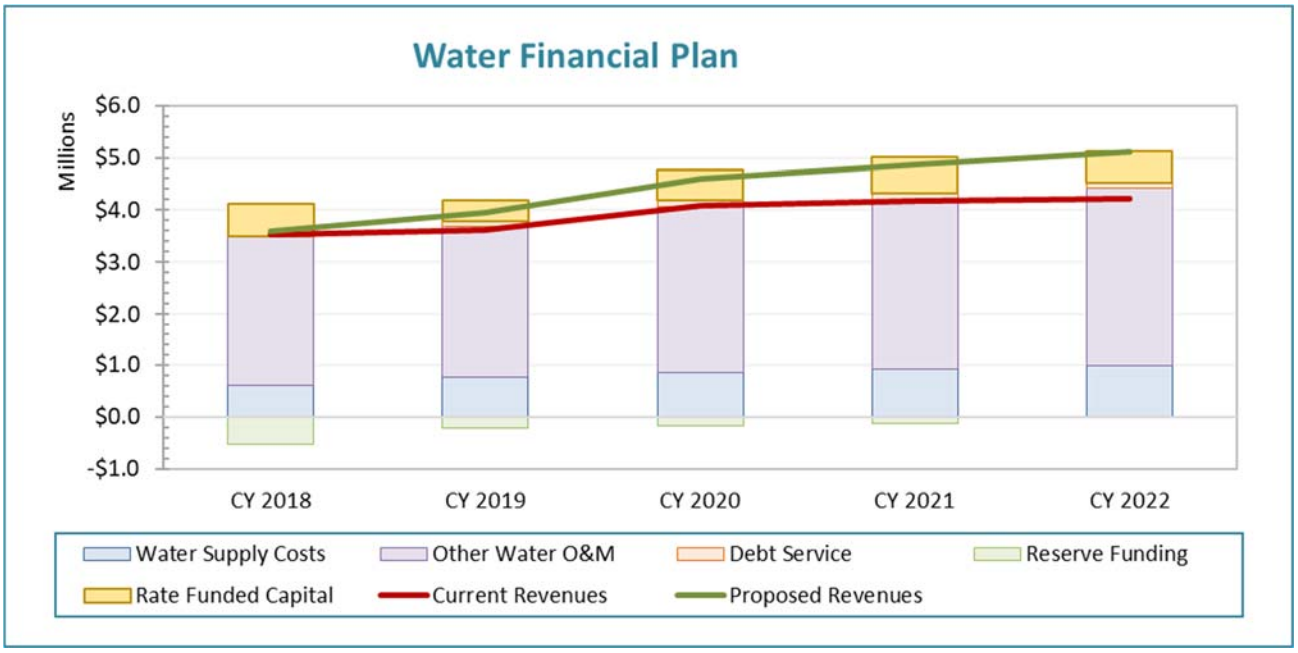


Figure 2-2 shows total annual CIP over the Study Period, and designates the portion to be funded by PAY-GO (which is a term used to designate rate funded CIP) and debt. The District anticipates issuing debt in CY 2019 to fund approximately 1.5 million dollars in capital projects.

Figure 2-2: Capital Improvement Projects and Funding Sources

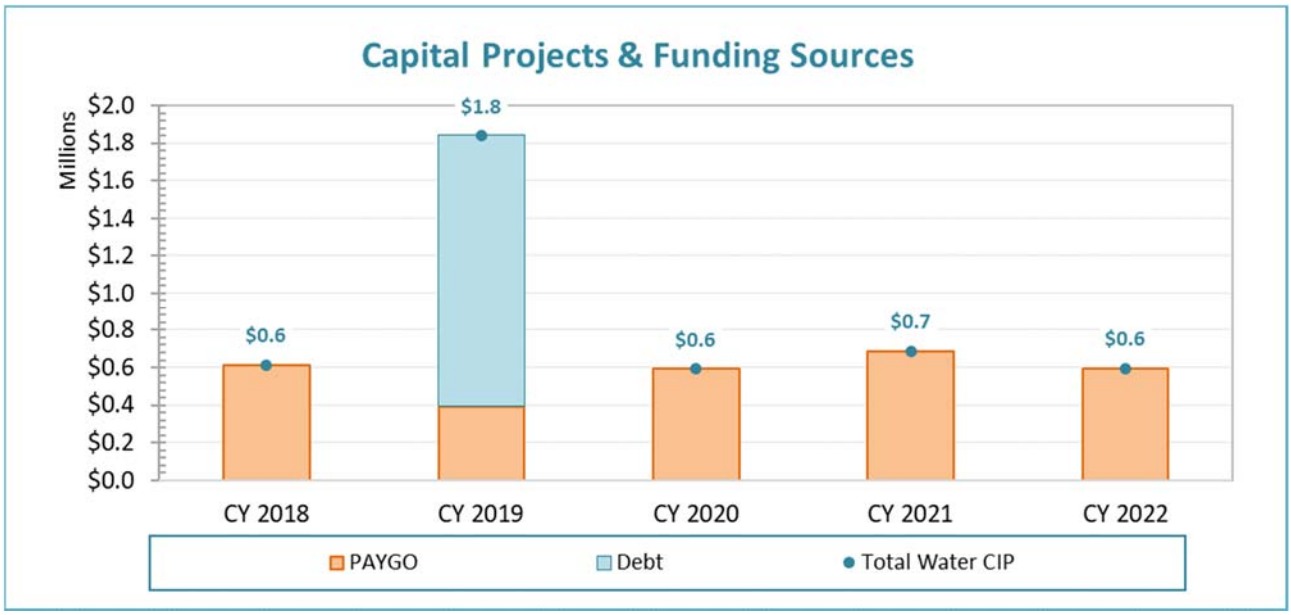
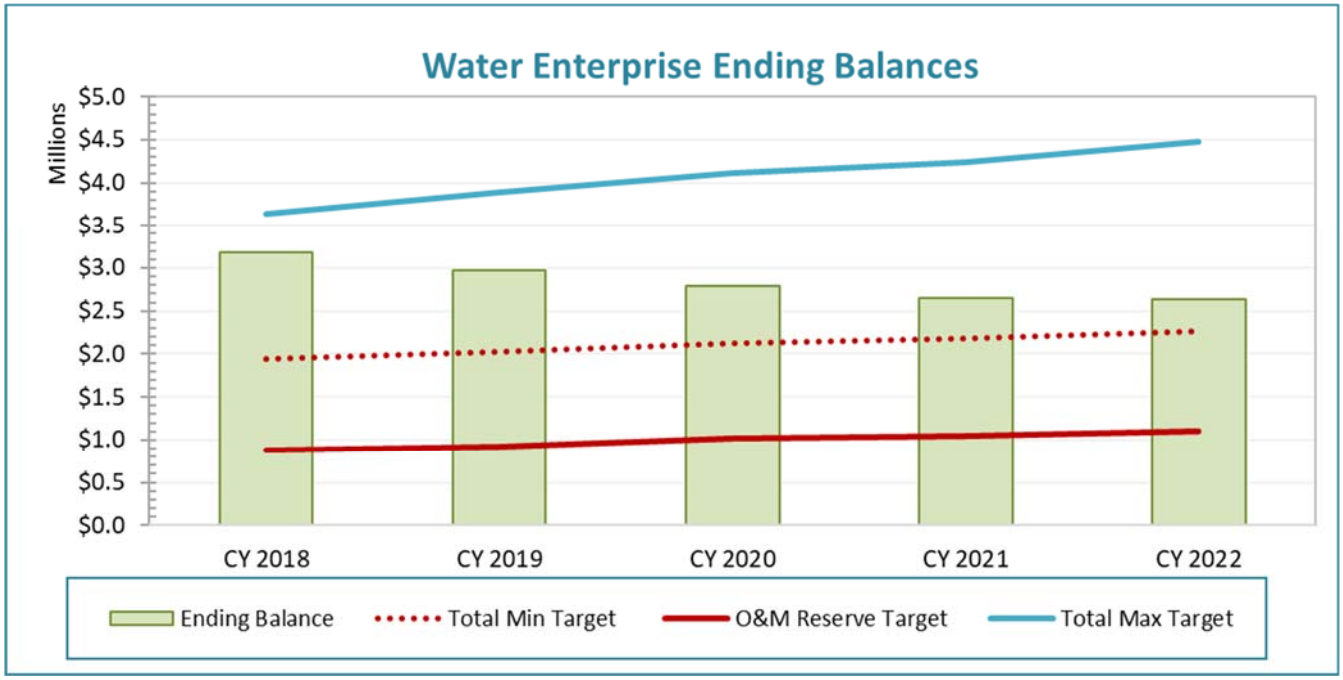


Figure 2-3 shows the ending total reserve balances. The District has a total of five reserves which include:

1) Operating Reserve
2) Capital Reserve
3) Vehicle and Equipment Reserve
4) Rate Stabilization Reserve
5) Emergency Reserve.

The total minimum reserves goal for all reserves is represented by the dotted red line in Figure 2-3.

Figure 2-3: Ending Reserve Balances



3 LEGAL FRAMEWORK AND RATE SETTING METHODOLOGY

3.1 LEGAL FRAMEWORK

This section of the report describes the legal framework surrounding rate setting and Cost of Service-based rates that provide a fair and equitable cost allocation to customer classes.

California Constitution - Article XIII D, Section 6 (Proposition 218)

Proposition 218 was enacted in 1996. It amended the California Constitution by adding article XIII C and XIII D. Article XIII D, section 6 established procedural requirements for the imposition of property-related fees and charges and substantive provisions governing the amount that may be imposed and the use of such fees charged by local agencies. The substantive requirements for such fees and charges are as follows:

1. A property-related charge (such as water service fees and charges) imposed by a public agency on a parcel shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the charge shall not be used for any other purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of the property.
5. No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.

Raftelis followed industry-standard rate setting methodologies set forth by the AWWA *M1 Manual* to ensure this Study meets Proposition 218 requirements and creates rates that do not exceed the cost of providing water service and are proportionate to the cost of providing water service.

California Constitution - Article X, Section 2

Article X, Section 2 of the California Constitution (established in 1976) states the following:

> "It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare."

As stated above Article X, section 2 of the State Constitution institutes the need to preserve the State's water supplies and to discourage the wasteful or unreasonable use of water by encouraging

conservation. As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

In addition, Section 106 of the Water Code declares that the highest priority use of water is for domestic purposes, with irrigation secondary. To meet the objectives of Article X, section 2, Water Code Section 375 et seq., a water purveyor may utilize its water rate design to incentivize the efficient use of water. The proposed tiered rates for Single Family Residential customers were designed in compliance with California Constitution article XIII D, section 6 by allocating a proportionately greater share of the cost of providing service to those whose water use creates greater demands and burdens on a water system and water resources, and therefore generates additional costs for the purveyor. The tiered rates also have the incidental effect of encouraging conservation by sending a price signal to customers to use less water.

"Inclining" block rate structures (which are synonymous with tiered rates), when properly designed and differentiated by customer class, allow a water utility to send consistent conservation price incentives to customers. Due to heightened interest in water conservation, tiered rates have gained widespread use, especially in relatively water-scarce regions, such as Southern California.

3.2 COST-BASED RATE-SETTING METHODOLOGY

As stated in the AWWA M1 Manual, "the costs of water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." To develop utility rates that comply with Proposition 218 and industry standards, while meeting other emerging goals and objectives of the utility, there are four major steps discussed below.

1) Calculate Revenue Requirement

The rate-making process starts by determining the test year revenue requirement - which for this study is CY 2018[6]. The revenue requirement is the amount a utility needs to sufficiently fund the utility's O&M, debt service, capital expenses and reserve funding.

2) Cost of Service Analysis (COS)

The annual cost of providing water service is distributed among customer classes commensurate with their service requirements. A COS analysis involves the following:

1. Functionalizing costs: This process takes each cost item in the District's budget and organizes the items collectively based on what function is served. Examples of cost functions are supply, treatment, transmission, distribution, storage, meter servicing and customer billing and collection.
2. Allocating functionalized costs to cost components: This process allocates the functionalized costs to cost components. Cost components include base, maximum day, maximum hour[7], meter service, customer service and conservation costs.
3. Distributing the cost components: This analysis distributes the cost components, using unit costs, to customer classes in proportion to their demands on the water system. This is described in the AWWA M1 Manual.

[6] The District fiscal year is the same as the calendar year.
[7] Collectively maximum day and maximum hour costs are known as peaking costs or capacity costs.

A COS analysis considers both the average quantity of water consumed (base costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands).[8] Peaking costs are costs that are incurred during peak times of consumption. There are additional costs associated with designing, constructing, operating and maintaining facilities to meet peak demands. These peak demand costs need to be allocated to those customers and customer classes whose water usage results in the District incurring the associated costs. In other words, not all customer classes share the same responsibility for peaking-related costs.

3) Rate Design and Calculations

Rates do more than simply recover costs. Within the legal framework and industry standards, properly designed rates should support and optimize a blend of various utility objectives, such as conservation, affordability for essential needs and revenue stability, among other objectives. Rates may also act as a public information tool in communicating these objectives to customers.

4) Rate Adoption

Rate adoption is the last step of the rate-making process to comply with Proposition 218. Raftelis documented the rate study results in this report to help educate the public about the proposed changes, the rationale and justifications behind the changes and their anticipated financial impacts in lay terms.

[8] System capacity is the system's ability to supply water to all delivery points at the time of demand. Coincident peaking factors are calculated for each customer class at the time of greatest system demand. The time of greatest demand is known as peak demand. Both the operating costs and capital asset related costs incurred to accommodate the peak flows are generally allocated to each customer class based upon the class's contribution to the peak month, day and hour event.

4 COST OF SERVICE (COS) ANALYSIS

A COS analysis distributes a utility's revenue requirement (yearly revenue needed) to each customer class. To do so we allocate the District's revenue requirement to the **cost causation components**. The cost causation components include:

1. Base (average) costs[9]
2. Peaking costs (maximum day and maximum hour)
3. Meter service
4. Billing and customer service
5. Fire protection
6. Conservation
7. General and administrative costs

Additional cost components can include pumping zone costs and supply costs. Peaking costs are further divided into maximum day and maximum hour demand. The maximum day demand is the maximum amount of water used in a single day in a year. The maximum hour demand is the maximum hour usage on the maximum usage day. Both maximum day and maximum hour peaking demand is used to calculate peaking unit rates to distribute costs to customer classes. Peaking costs are allocated in proportion to how the different customer classes use water during peak day and hour demands. Different facilities such as distribution and storage facilities are designed to meet the peaking demands of customers. Therefore, extra capacity[10] costs include the O&M and capital costs associated with meeting peak customer demand. This method is consistent with the AWWA M1 Manual, and is widely used in the water industry to perform COS analyses.

4.1 ALLOCATION OF EXPENSES TO COST COMPONENTS

In a Cost of Service analysis, we allocate a utility's functionalized expenses to the cost causation components. To do so we must identify system-wide peaking factors which are shown in Column B, Table 4-1. The system-wide peaking factors are used to derive the cost component allocation bases (i.e., percentages) shown in Columns C through E of Table 4-1. Functionalized[11] expenses are then allocated to the cost components using the allocation bases shown in Column A. To understand the interpretation of the percentages shown in Columns C through E we must first establish the base use as the average daily demand during the year – which is assigned an allocation basis of 1. If the base allocation basis is used to allocate an expense, it means that the costs associated with that expense are to meet average daily demand related costs.

Expenses that are allocated to the cost causation components using the maximum day bases (Line 2) attribute 45% (1.00/2.21) of the demand (and therefore costs) to base (average daily demand) use and the remaining 55% to maximum day (peaking) use. Expenses allocated using the maximum

[9] The base component can be further divided into supply and base/delivery cost components as discussed in Section 5.5.

[10] The terms extra capacity, peaking and capacity costs are used interchangeably.

[11] Functions of a water utility are: supply, treatment, transmission and distribution, storage, meter service, customer service, general and administration and fire protection.

hour bases assume 30% (1.00/3.31) of costs are due to base demands, 37% due to max day ((2.21-1.00)/3.31) and 33% ((3.31-2.21)/3.31) are due to max hour costs. Collectively the maximum day and hour cost components are known as peaking costs. These allocation bases are used to assign functionalized O&M expenses, shown in column A of Table 4-2, to the cost causation components shown across the top of Table 4-2.

Table 4-1: System-Wide Peaking Factors and Allocation to Cost Components

Line No.	Allocation Basis	Peaking Factor	Base	Max Day	Max Hour	Total
	(A)	(B)	(C)	(D)	(E)	(F)
1	Base	1.00	100%			100%
2	Max Day	2.21	45%	55%		100%
3	Max Hour	3.31	30%	37%	33%	100%

Table 4-2 shows the allocation of functionalized O&M expenses (in column A) to the cost causation components. The resulting allocation to each cost component is shown in Line 10. The amounts shown in line 10 are the summation of the percentages in each column multiplied by the amounts in Column B for each line (also known as the sum product).

The allocation bases, in Column C, are chosen based on the type of cost for each line item and the proportion of those costs associated with each cost causation component (max day, max hour, general, conservation, etc.). For example, treatment costs (Line 2) is allocated using the max day basis since treatment costs are associated with serving average day and peak day demands in proportion to max day allocations identified in Table 4-1. Certain cost bases are identical to the cost causation components – such as supply and conservation – and therefore are easily allocated to the cost component with the same name. Line 11 shows the percentage allocation of all expenses to the cost causation components.

We note that the total O&M expenses in Line 10, Column R equals the total CY 2018 O&M in Line 16 of Table 2-11. This resulting allocation is used to allocate the District's operating revenue requirement (discussed in Section 4.2) to the cost components.

Table 4-2: Allocation of O&M Expenses to Cost Causation Components

Line No.	Functions	CY 2018 Budget	Allocation Basis	Supply	Base	Max Day	Max Hour	Meter Service	Customer Billing	Conservation	Direct Fire Protection	Gen & Admin	Pump Zones 1	2	3	4	5	Sub -Total
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)
1	Supply	$683,854	Base	99.5%	0.0%	0.0%					0.5%							100.0%
2	Treatment	$306,378	Max Day		45.2%	54.8%												100.0%
2	Transmission & Distribution	$658,471	Max Day		45.2%	54.8%												100.0%
3	Storage	$98,303	Max Hour		30.2%	36.6%	33.2%											100.0%
3	Meter Service	$86,084	Meter					100.0%										100.0%
4	Customer Billing	$388,860	Customer						99.5%		0.5%							100.0%
4	Direct Fire Protection	$83,457	Direct Fire								100.0%							100.0%
5	Gen & Admin	$1,003,667	General								5.0%	95.0%						100.0%
5	Conservation	$18,423	Conservation							100.0%								100.0%
6	Pump Zone Costs																	
6	Zone 1	$126,323											100.0%					100.0%
7	Zone 2	$42,110												100.0%				100.0%
7	Zone 3	$1,890													100.0%			100.0%
8	Zone 4	$3,859														100.0%		100.0%
8	Zone 5	$567															100.0%	100.0%
9																		
10	**Total**	**$3,502,246**		**$680,435**	**$466,282**	**$564,201**	**$32,669**	**$86,084**	**$386,916**	**$18,423**	**$139,004**	**$953,484**	**$126,323**	**$42,110**	**$1,890**	**$3,859**	**$567**	**$3,502,246**
11	O&M Expense Allocation			19%	13%	16%	1%	2%	11%	1%	4%	27%	4%	1%	0%	0%	0%	100%

We also allocate the District's capital assets to the cost causation components as shown in Table 4-3. The resulting total asset allocation is derived in the same manner as the O&M allocation in Table 4-2. Raftelis functionalized the District's assets (shown in Lines 1 through 8 of Table 4-3), and then allocated them to the cost causation components in the same manner as O&M expenses. Part of the District's revenue requirement includes rate funded capital – which we will discuss in Section 4.2. This capital portion of the revenue requirement is allocated to the cost causation components using the asset allocation shown in Line 10 of Table 4-3.

Table 4-3: Allocation of Assets to Cost Causation Components

Line No.	Functions	CY 2018 Budget	Allocation Basis	Supply	Base	Max Day	Max Hour	Meter Service	Customer Billing	Conservation	Direct Fire Protection	Gen & Admin	Sub -Total
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(R)
1	Supply	$2,879,503	Base	100.0%									100.0%
2	Treatment	$61,429	Max Day		45.2%	54.8%							100.0%
3	Pumping	$390,341	Max Day		45.2%	54.8%							100.0%
4	Distribution	$5,697,441	Max Hour		30.2%	36.6%	33.2%						100.0%
5	Storage	$2,742,688	Max Day										100.0%
6	Customer Accounts	$313,245	Customer						100.0%				100.0%
7	Fire	$374,519	General								100.0%		100.0%
8	Admin	$576,303	Conservation							100.0%			100.0%
9	**Total**	**$13,035,469**		**$2,879,503**	**$3,166,738**	**$3,831,753**	**$1,893,409**	**$0**	**$313,245**	**$576,303**	**$374,519**	**$0**	**$13,035,469**
10	Allocation			22%	24%	29%	15%	0%	2%	4%	3%	0%	100.0%

Table 4-4 shows the allocation of District wide labor costs to the cost components. The resulting allocation in Line 11 is used in Section 4.2 to allocate the revenue offsets from the Operable Unit and City of Industry Billing revenue to the cost components.

Table 4-4: Allocation of Labor Costs to Cost Causation Components

Line No.	Functions	Expense	Allocation Basis	Supply	Base	Max Day	Max Hour	Meter Service	Customer Billing	Conservation	Direct Fire Protection	Gen & Admin	Total
1	Supply	34,281	Base	99.5%							0.5%		100%
2	Treatment	171,405	Max Day	0.0%	45.2%	54.8%	0.0%						100%
3	Transmission & Distribution	297,102	Max Day		45.2%	54.8%	0.0%						100%
4	Storage	22,854	Max Hour		30.2%	36.6%	33.2%						100%
5	Meter Service	17,141	Meter					100.0%					100%
6	Customer Billing	228,540	Customer						99.5%		0.5%		100%
7	Direct Fire Protection	28,568	Direct Fire								100.0%		100%
8	Gen & Admin	331,383	General								5.0%	95.0%	100%
9	Conservation	11,427	Conservation							100.0%			100%
10	**Labor Allocation**	**1,142,700**		**$34,110**	**$218,899**	**$264,867**	**$7,595**	**$17,141**	**$227,397**	**$11,427**	**$46,451**	**$314,814**	**$1,142,700**
11	**Labor Allocation w/o Supply**			**0%**	**20%**	**24%**	**1%**	**2%**	**21%**	**1%**	**4%**	**28%**	**100%**

4.2 REVENUE REQUIREMENT DETERMINATION

Table 4-5 shows the revenue requirement determination. The total revenue required from rates is shown in Line 28, Column D. The total in Line 28, Column B, is the O&M revenue requirement that is allocated to the cost components using the percentages derived in Line 11 of Table 4-2. The capital revenue requirement in Line 28, Column C, is allocated to the cost components using the percentages derived in Line 10 of Table 4-3.

Raftelis calculated the revenue requirement using budgeted CY 2018 expenses, which includes groundwater production, O&M expenses, capital expenses and existing debt service as shown in Lines 1 through 6. To arrive at the rate revenue requirement in Line 28, Column D, we subtract revenue offsets from other (non-rate) revenues and adjust for annual cash balances and for the impending rate adjustment that will take place ten months into the fiscal year (which is the calendar year). We must therefore annualize the rate increase so that our rates collect the right amount of revenue (Line 25). The adjustments, shown as negative values, are subtracted (therefore added as a result of subtracting a negative number) to arrive at the total revenue required from District rates in Line 28, Column D. This is the total amount that the District's fixed meter charges and volumetric rates are designed to collect if applied over a full fiscal year.

Note that Line 7, Column B, is the same as the value for CY 2018 in Line 16in Table 2-11. The revenue offsets are taken from the other CY 2018 revenues in Lines 5 through 10 in Table 2-11. These non-rate revenues lower the revenue required from rates. The adjustment for cash balance in Line 24 is the net cash balance taken from Line 19 of Table 2-11. The adjustment for mid-year increase in Line 25 adjusts the revenue adjustment we modeled in the cash flow table (Line 3 of Table 2-11). Since this revenue adjustment is implemented ten months into the fiscal year, it annualizes the revenue adjustment in Line 25, Column B of Table 4-5, so that the rates are calculated based on a full year's revenue needs.

Table 4-5: Revenue Requirement Determination

Line No.	CY 2018	Operating	Capital	Total
	(A)	(B)	(C)	(D)
1	**Revenue Requirement**			
2	Groundwater Production (COGS)	$807,000		$807,000
3	Labor and Beneftis	$1,959,600		$1,959,600
4	All Other Expenses	$735,600		$735,600
5	Rate Funded Capital Expeditures		$615,000	$615,000
6	**Total - Revenue Requirement**	**$3,502,200**	**$615,000**	**$4,117,200**
7				
8	**Revenue Offsets**			
9	4120 Surplus Sales	$38,000		$38,000
10	Customer Charges	$34,000		$34,000
11	4900 Mgmt Fees	$261,700		$261,700
12	4920 · Taxes & Assessments	$215,000		$215,000
13	4921 · Other O & M Fees	$13,000		$13,000
14	4930 · Rental Revenue	$36,100		$36,100
15	4980 · Interest Revenue		$25,730	$25,730
16	4990 Misc Income	$18,000		$18,000
17	9001 · PVOU Billing	$42,900		$42,900
18	9010 · BPOU Billing	$278,800		$278,800
19	9050 · IND Billing	$715,800		$715,800
20	**Total - Revenue Offsets**	**$1,653,300**	**$25,730**	**$1,679,030**
21				
22	**Adjustments**			
23	Adjustment for Cash Balance		$519,599	$519,599
24	Adjustment for Mid-Year Increase	-$214,714		-$214,714
25	**Total - Adjustments**	**-$214,714**	**$519,599**	**$304,885**
26				
27	**Revenue Required from Rates**	**$2,063,613**	**$69,672**	**$2,133,285**

4.3 ALLOCATION OF COSTS TO COST COMPONENTS

We now allocate the total revenue requirement in Table 4-5, to the cost causation components. However first we must allocate the revenue offsets, shown in Lines 10 through 20 in Table 4-5 to the cost components as shown in Table 4-6. As shown in the top portion of Table 4-6, most of the revenue offsets are allocated to general and admin with the exception of the Operable Unit revenue and City of Industry revenue shown in Lines 9 through 11. Labor allocation revenue offsets in Lines 9 through 11 are allocated to each cost component using the percentages shown in Line 11 of Table 4-4.

Table 4-6: Allocation of Revenue Offsets to Cost Components

Line No.													Pump Zones					
	(A)	Allocation Basis (B)	Supply (C)	Base (D)	Max Day (E)	Max Hour (F)	Meter Service (G)	Customer Billing (H)	Con-servation (I)	Direct Fire Protection (J)	Gen & Admin (K)	Large Fire Meters (M)	1 (N)	2 (O)	3 (P)	4 (Q)	5 (R)	Sub -Total
1	4120 Surplus Sales	O&M w/o Supply	94%								0%		4.5%	1.5%	0.1%	0.1%	0.0%	100%
2	Customer Charges (Misc Fees)	O&M w/o Supply						94%			0%		4.5%	1.5%	0.1%	0.1%	0.0%	100%
3	4900 Mgmt Fees	Gen & Admin									100%							100%
4	4920 · Taxes & Assessments	O&M w/o Supply									92%	1.4%	4.5%	1.5%	0.1%	0.1%	0.0%	100%
5	4921 · Other O & M Fees	O&M w/o Supply									94%		4.5%	1.5%	0.1%	0.1%	0.0%	100%
6	4930 · Rental Revenue	O&M w/o Supply									94%		4.5%	1.5%	0.1%	0.1%	0.0%	100%
7	4980 · Interest Revenue	Gen & Admin									100%		0.0%	0.0%	0.0%	0.0%	0.0%	100%
8	4990 Misc Income	O&M w/o Supply									94%		4.5%	1.5%	0.1%	0.1%	0.0%	100%
9	9001 · PVOU Billing	Labor Alloc - OU/IND Billing		20%	24%	1%	2%	21%	1%	4%	28%							100%
10	9010 · BPOU Billing	Labor Alloc - OU/IND Billing		20%	24%	1%	2%	21%	1%	4%	28%							100%
11	9050 · IND Billing	Labor Alloc - OU/IND Billing		20%	24%	1%	2%	21%	1%	4%	28%							100%
12																		
13	4120 Surplus Sales		$35,647	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,701	$567	$25	$52	$8	$38,000
14	Customer Charges (Misc Fees)		$0	$0	$0	$0	$0	$31,894	$0	$0	$0	$0	$1,522	$507	$23	$46	$7	$34,000
15	4900 Mgmt Fees		$0	$0	$0	$0	$0	$0	$0	$0	$261,700	$0	$0	$0	$0	$0	$0	$261,700
16	4920 · Taxes & Assessments		$0	$0	$0	$0	$0	$0	$0	$0	$198,676	$3,010	$9,625	$3,208	$144	$294	$43	$215,000
17	4921 · Other O & M Fees		$0	$0	$0	$0	$0	$0	$0	$0	$12,195	$0	$582	$194	$9	$18	$3	$13,000
18	4930 · Rental Revenue		$0	$0	$0	$0	$0	$0	$0	$0	$33,864	$0	$1,616	$539	$24	$49	$7	$36,100
19	4980 · Interest Revenue		$0	$0	$0	$0	$0	$0	$0	$0	$25,730	$0	$0	$0	$0	$0	$0	$25,730
20	4990 Misc Income		$0	$0	$0	$0	$0	$0	$0	$0	$16,885	$0	$806	$269	$12	$25	$4	$18,000
21	9001 · PVOU Billing		$0	$8,471	$10,250	$294	$663	$8,800	$442	$1,798	$12,183	$0	$0	$0	$0	$0	$0	$42,900
22	9010 · BPOU Billing		$0	$55,051	$66,612	$1,910	$4,311	$57,188	$2,874	$11,682	$79,173	$0	$0	$0	$0	$0	$0	$278,800
23	9050 · IND Billing		$0	$141,340	$171,021	$4,904	$11,067	$146,827	$7,378	$29,993	$203,271	$0	$0	$0	$0	$0	$0	$715,800
24	**Total**		**$35,647**	**$204,861**	**$247,882**	**$7,108**	**$16,041**	**$244,710**	**$10,694**	**$43,472**	**$843,676**	**$3,010**	**$15,852**	**$5,284**	**$237**	**$484**	**$71**	**$1,679,030**

Line 1 in

Table 4-7 allocates the operating revenue requirement to the cost components by distributing the total amount in column R to the cost components using the percentages shown in Line 11 of Table 4-2. Similarly, the capital revenue requirement in Line 2 is allocated to the cost components using the percentages shown in line 10 of Table 4-3. Line 3 subtracts the revenue offsets that were allocated to the cost components in Table 4-6. Note that Line 3 in Table 4-7 is equal to the negative value of Line 24 in Table 4-6 because these are offsetting revenues.

Line 4 of Table 4-7 shows the cost allocation before reallocating general and administrative costs in Line 6. Line 6 reallocates general costs (Column J) to the other cost components in proportion to each's share of total costs. This reflects the fact that general and administrative costs support the other functions in proportion to their share of costs.

Line 12 shows the unit cost for most cost components, and is derived by dividing Line 7 by Line 9. The max day and max hour unit costs are used to derive total fire protection costs. The units of service in Line 9 are derived in Appendix A.

Table 4-7: Expense Allocation to Cost Components

													Pump Zones					
Line No	Expense	Allocation Basis	Supply	Base	Max Day	Max Hour	Meter Service	Customer Billing	Conservation	Direct Fire Protection	Gen & Admin	Large Fire Meters	1	2	3	4	5	Sub Total
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(M)	(N)	(O)	(P)	(Q)	(R)
1	Operating Expenses	O&M	$722,141	$494,862	$598,783	$34,671	$91,361	$410,631	$19,552	$147,525	$1,011,927	$0	$134,066	$44,691	$2,006	$4,096	$602	$3,716,914
2	Capital Expenses	Capital	$21,074	$23,176	$28,043	$13,857	$0	$2,293	$4,218	$2,741	$0	$0	$0	$0	$0	$0	$0	$95,401
3	Revenue Offset	Revenue Offsets	-$35,647	-$204,861	-$247,882	-$7,108	-$16,041	-$244,710	-$10,694	-$43,472	-$843,676	-$3,010	-$15,852	-$5,284	-$237	-$484	-$71	-$1,679,030
4	**Total Cost of Service**		**$707,568**	**$313,177**	**$378,944**	**$41,420**	**$75,320**	**$168,214**	**$13,076**	**$106,793**	**$168,251**	**-$3,010**	**$118,214**	**$39,407**	**$1,769**	**$3,611**	**$531**	**$2,133,285**
5	Percent Excluding Gen & Admin		39.2%	17.4%	21.0%	2.3%	4.2%	9.3%	0.7%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
6	Allocation of General Admin		$65,973	$29,200	$35,332	$3,862	$7,023	$15,684	$1,219	$9,957	-$168,251	$0	$0	$0	$0	$0	$0	$0
7	**Total Adjusted Cost of Service**		**$773,541**	**$342,377**	**$414,276**	**$45,282**	**$82,342**	**$183,898**	**$14,295**	**$116,751**	**$0**	**-$3,010**	**$118,214**	**$39,407**	**$1,769**	**$3,611**	**$531**	**$2,133,285**
8																		
9	Units of Service		653,350	653,350	2,343	7,835	4,278	2,403	653,350	4,278	4,278	0	653,350	201,040	9,084	15,620	2,770	
10	Units		hcf	hcf	hcf/day	hcf/day	equivalent meters	bills	hcf	NA	NA	NA	hcf	hcf	hcf	hcf	hcf	
11																		
12	**Unit Cost of Service**		**$1.18**	**$0.52**	**$176.82**	**$5.78**	**$19.25**	**$76.53**	**$0.02**				**$0.18**	**$0.20**	**$0.39**	**$0.23**	**$0.39**	

Fire Protection Costs

Line 12 of Table 4-7 shows the max day and max hour unit costs in dollars per hundred cubic feet per day ($/hcf /day). Converting these costs into dollars per thousand gallons ($/1,000 gal/day) yields the unit cost of service shown in Line 1 of Table 4-8. The total costs to maintain fire capacity in the water system is derived assuming a four-hour fire needing 4,000 gallons per minute – and therefore requiring a max day and max hour capacity in 1,000 gallons per day as shown in Line 4 of Table 4-8. Line 5, which is the total cost to maintain the capacity to fight a 4-hour fire, is Line 4 multiplied by Line 1. We allocate the total fire protection costs to public and private fire costs in proportion to the potential flow to fire hydrants and private fire connections. The potential flow for public and private fire connections is shown in Table 4-9.

Table 4-8: Derivation of Total, Public and Private Fire Protection Costs

Line No.	Fire Protection Cost Allocation	Max Day	Max Hour	Total
1	Unit Cost of Service	$236.39	$7.73	
2	Unit	$ / 1,000 gal /day	$ / 1,000 gal /day	
3	Fire Protection Service			
4	Units of Service (1,000 gallons)	960	4,800	
5	**Allocated Cost of Service**	**$226,939**	**$37,086**	**$264,024**
6	Public Fire Protection	$188,906	$30,870	$219,776
7	**Private Fire Service**	**$38,033**	**$6,215**	**$44,248**

In Table 4-9, we calculate the potential fire demand (known as equivalent demand) of public and private fire accounts in Lines 3 and 15 of Table 4-9 respectively. Lines 1 through 2 calculate the potential flow through public fire hydrants using the Hazen William equation for pipe flow.[12] Lines 5 through 13 calculate the potential flow through private fire connections also using the Hazen Williams equation. The resulting potential fire demand, and therefore cost allocation for public fire and private fire costs, is shown in Lines 17 and 18 of Table 4-9. The total demand units in column D are calculated by multiplying the potential demand (column B) by the number of connections/hydrants in service (column C). This shows that public fire protection is 83% of the total fire costs we calculated in Line 5 of Table 4-8. The corresponding public and private fire costs are shown in Lines 6 and 7 of Table 4-8 respectively.

[12] The potential flow is the diameter of the outlet/connection raised to the 2.63 power – the Hazen Williams equation for pipe flow. For a 2" outlet the demand factor would be 2^2.63 = 6.2.

Table 4-9: Derivation of Potential Flow to Private and Public Fire Connections

Line No	Fire Line Size - Public Hydrants	Fire Demand Potential	Number of Fire Hydrants	Equivalent Demand
	(A)	(B)	(C)	(D)
1	6" x 4"x 2.5" Type	160.76	245	39,387
2	4" x 2.5" Type	49.45	105	5,192
3	**Total**		**350**	**44,579**
4	**Fire Line Size - Private Fire**	**Fire Demand Potential**	**Number of Lines**	**Equivalent Demand**
5	1"	1.00	0	0
6	1.5"	2.90	0	0
7	2"	6.19	0	0
8	3"	17.98	0	0
9	4"	38.32	10	383
10	6"	111.31	6	668
11	8"	237.21	24	5,693
12	10"	426.58	2	853
13	12"	689.04	2	1,378
14	**Total**		**44**	**8,975**
15				
16	**Percent Allocated to Public Fire Protection**			**83%**
17	Percent Allocated to Private Fire Protection			**17%**

We can now complete the cost of service cost allocation to the cost components by making final adjustments shown in Table 4-10.

In Line 2, we reallocate the private fire protection costs we derived above to the private fire cost component in Column Q. Similarly, in Line 3 we reallocate public fire protection costs, derived in Line 6 of Table 4-8, to the meter service component so that public fire protection costs will be collected through the Meter Service Charge. We also allocate direct fire protection costs (such as hydrant maintenance) shown in Column H to the meter service component. Note that a small portion of direct fire protection costs remain in the direct fire protection cost component – this is the cost to maintain backflow prevention devices. This cost will be collected through private fire protection charges and will be derived in Section 5.

The last adjustment is shown in Line 4 of

Table 4-7. We reallocate a portion of max day and max hour costs to the meter component is so that the District can collect these costs through a fixed charge because meter and customer costs (Columns E and F) are collected through the fixed bi-monthly Meter Service Charge. The costs are reallocated so that the District can meet revenue stability goals and achieve approximately 32% of revenue collection through a fixed charge. This is further discussed in Section 5.3. The final Cost of Service allocation to the cost components is shown in Line 5 of Table 4-10.

Once we have allocated the City's expenses to the cost causation components, we derive rates for each customer class to collect the total amount shown in Column R of Table 4-10. This is discussed in detail in Section 5.

Table 4-10: Final Cost of Service Allocation to Cost Component

Line No.	Expense	Supply (A)	Base (B)	Max Day (C)	Max Hour (D)	Meter Service (E)	Customer Billing (F)	Con-servation (G)	Direct Fire Protection/ Backflow Maintenance (H)	Gen & Admin (I)	Revenue Offset Large Fire Meters (J)	Pump Zones 1 (K)	2 (M)	3 (N)	4 (O)	5 (P)	Private Fire Protection (Q)	Sub Total (R)
1	Cost of Service	$773,541	$342,377	$414,276	$45,282	$82,342	$183,898	$14,295	$116,751	$0	-$3,010	$118,214	$39,407	$1,769	$3,611	$531	$0	$2,133,285
2	Private Fire Protection			-$38,033	-$6,215	$0											$44,248	
3	Allocation of Public Fire to Meter Service			-$188,906	-$30,870	$334,776			-$115,000									
4	Allocation of Peaking to Meter			-$41,214	-$1,803	$43,018												
5	**Total Adjusted Cost of Se**	**$773,541**	**$342,377**	**$146,123**	**$6,393**	**$460,136**	**$183,898**	**$14,295**	**$1,751**	**$0**	**-$3,010**	**$118,214**	**$39,407**	**$1,769**	**$3,611**	**$531**	**$44,248**	**$2,133,285**

5 RATE DERIVATION

5.1 EXISTING RATE STRUCTURE AND RATES

The District's existing rate structure consists of a fixed bi-monthly meter charge by meter size and a two-tiered volumetric rate for Single Family customers and a uniform rate for all other customer classes. The rates shown in Table 5-1 for Tier 1 and Tier 2 include a pumping rate which covers costs to pump water to the higher elevation zones. The pumping rate for each zone is shown in the right most column.

The lower portion of the table shows the current bi-monthly Meter Service Charge and the current Private Fire Charges.

Table 5-1: Existing Rate Structure and Rates (Bi-monthly)

Current Rates	Total Tier 1 Rate ($/hcf)	Total Tier 2 Rate ($/hcf)	Pumping Rate
Single Family Residential			
Zone 1	$1.61	$2.32	
Zone 2	$1.81	$2.52	$0.20
Zone 3	$1.98	$2.69	$0.37
Zone 4	$1.86	$2.57	$0.25
Zone 5	$2.12	$2.83	$0.51
Multi-family, Comm	**Uniform Rate (No Tiers)**		
Zone 1	$1.95		
Zone 2	$2.15		$0.20
Zone 4	$2.20		$0.25

Meter Size (inches)	Meter Service Charge	Private Fire
5/8"	$31.02	NA
3/4"	$37.19	NA
1"	$49.54	$19.19
1.5"	$100.50	$24.10
2"	$127.36	$29.99
3"	$245.94	$45.69
4"	$358.35	$63.35
6"	$682.60	$112.42
8"	$1,006.84	$171.31
10"	NA	$240.01
12"	NA	$338.15

5.2 PROPOSED RATE STRUCTURE

In Table 4-10 we allocated the District's revenue requirement to each cost causation component. Table 5-2 shows how the District will collect each cost component – through a fixed meter charge or a volumetric charge. It also restates the amount allocated to each cost components from the Cost of Service section. Total fixed revenue collection is 32% of total revenue – which is close to the average in Southern California of approximately 25 to 30%. Note that the total revenue collected matches the total in column R of Table 4-10.

Table 5-2: Cost of Service and Fixed/Volumetric Revenue Collection

Line No.	Cost Component	Amount	Fixed/ Volumetric
1	Supply	$773,541	Vol
2	Base	$342,377	Vol
3	Peaking (Max Day an	$152,517	Vol
4	Meter Service	$460,136	Fixed
5	Customer Billing	$183,898	Fixed
6	Conservation	$14,295	Vol
7	Backflow Maintenan	$1,751	Fixed
8	Revenue Offset for L	-$3,010	Fixed
9	Pump Zones	$163,531	Vol
10	Private Fire Protectic	$44,248	Fixed
11	**Total**	**$2,133,285**	100%
12	Total Fixed	$687,024	32%
13	Total Volumetric	$1,446,261	68%

5.3 PROPOSED BI-MONTHLY METER SERVICE CHARGE

To derive the bi-monthly Meter Service Charge so that it collects the amount shown in Table 5-2, we must first calculate the number of equivalent meter units, which is shown in Table 5-3, Column D. Equivalent meter units account for the potential flow through larger meters and equate this flow to the flow through the smallest meter – in this case the 5/8-inch meter. We calculate the number of equivalent units by multiplying the number of meters (Column C) by the American Water Works Association (AWWA) capacity ratios in Column B to yield equivalent meters in column D.

Table 5-3: Derivation of Equivalent Meter Units

Line No.	Meter Size (A)	Meter Ratio (B)	Number of Meters (C)	Equivalent Meters (D)	Meter Service (E)	Customer Bill (F)	Proposed Bi-Monthly Fixed Charge (G)
1	5/8"	1.00	1,450	1,450	$17.93	$12.75	**$30.68**
2	3/4"	1.50	653	980	$26.89	$12.75	**$39.64**
3	1"	2.50	161	403	$44.82	$12.75	**$57.57**
4	1.5"	5.00	20	100	$89.63	$12.75	**$102.39**
5	2"	8.00	98	784	$143.41	$12.75	**$156.17**
6	3"	16.00	7	112	$286.82	$12.75	**$299.58**
7	4"	25.00	10	250	$448.16	$12.75	**$460.92**
8	6"	50.00	4	200	$896.32	$12.75	**$909.08**
9	8"	80.00	0	0	$1,434.11	$12.75	**$1,446.87**
10	10"	115.00	0	0	$2,061.54	$12.75	**$2,074.29**
11	**Total**		**2,403**	**4,278**			
12	**Total Revenue Collected**						**$644,034**

Bi-monthly Meter Service Charge Components

There are two cost components that comprise the bi-monthly Meter Service Charge: 1) meter service and 2) customer service; they are described below (water agencies tend to call this charge the same name as the first component even though it contains two components). The bi-monthly Meter Service Charge recognizes the fact that the District incurs fixed costs related to maintaining meters and billing customers. It also collects a portion of capacity costs through the meter service charge. Table 5-4 shows the derivation of both components for the smallest meter size: 5/8 inch. Note that the amounts in Lines 2 and 6 of Table 5-4 equal Lines 4 and 5 in Table 5-2.

Table 5-4: Bi-monthly Meter and Customer Charge Derivation

Line No.	Bi-Monthly Meter Service Charge (A)	(B)
1	**Meter Service Charge Component**	
2	Meter Service Costs	$460,136
3	Equivalent Meter Units	4,278
4	**Bi-monthly Meter Service Charge**	**$17.93**
5	**Customer Service Charge Component**	
6	Customer Service Costs	$183,898
7	Number of Meters	2,403
8	**Bi-Monthly Customer Service Charge**	**$12.75**

Meter Service Charge Component

The meter service component recovers two types of costs: 1) costs associated with maintaining and servicing meters (meter service component) and 2) capacity (also known as peaking) costs. Both costs increase as the meter size increases and are proportional to the AWWA hydraulic capacity ratios shown in column B of Table 5-3. The capacity ratios, which are a function of a meter's safe maximum flow rate, are used to increase the meter service component for larger capacity meters – as shown in column E of Table 5-3. This assumes that the potential capacity (peaking) demand is proportional to the potential flow through each meter size as established by the AWWA hydraulic capacity ratios. The ratios shown in column B of Table 5-3 are the ratio of potential flow through each meter size compared to the flow through a 5/8-inch meter. The 5/8-inch meter is used as the base since it is the most numerous meter size within the District. Larger meters have the potential to demand more peak capacity. For example, Column B of Table 5-3 shows that the hydraulic capacity of a 2-inch meter is 8.0 times that of a 5/8-inch meter and therefore the meter service component is 8.0 times that of the 5/8-inch meter. The meter service component for a 5/8-inch meter was derived in Table 5-4. As shown in Column E of Table 5-3, the meter service (and capacity) component for larger meters is scaled up using the AWWA capacity ratios shown in column B.

Peaking costs (shown as max day and max hour costs) are shown in Line 4 of Table 4-10. We allocated a portion of capacity (peaking) related costs to the meter service component, as shown in Table 4-10, so that it can be collected through the fixed bi-monthly Meter Service Charge and allow the District to reach its fixed revenue goals. Allocating extra capacity costs by meter size (instead of allocating these costs using peaking factors as discussed in Section 5.5) is a common way to provide greater revenue stability, especially in-light of decreasing revenues during a drought or period of declining sales. Stated in another way – it is quite common to reallocate peaking costs (max day and max hour) to be collected through the meter charge – this is the basis for the reallocation in Line 4 of Table 4-10.

The total expense recovered through the Meter Service Charge is shown on Line 2 of Table 5-4 (Line 2 is the same as Line 4 in Table 5-2. Public fire protection costs are also recovered through the Meter Service Charge. Public and private fire protection costs are derived in Section 5.4

Customer Component

The customer component derivation, shown in the bottom portion of Table 5-4, recovers costs associated with meter reading, customer billing and collection, as well as answering customer calls. These costs are the same for all meter sizes as it costs the same to bill a small meter as it does a larger meter.

Total Bi-monthly Meter Service Charge for All meters

Table 5-3 shows the derivation of the bi-monthly Meter Service Charge by meter size in Column G, which is the addition of the meter service charge (and capacity component) in Column E and the customer component, which is the same for each meter size (Column F). Note that the total estimated revenue, shown in Line 12, Column G, is equal to the sum of Lines 4 and 5 in Table 5-2.

Table 5-5 shows the bi-monthly fixed Meter Service Charge for the next five years. They are derived by applying the revenue adjustments shown in Table 2-10 to the meter charges shown in Table 5-3. The Financial Plan, discussed in Section 2, assumes the rates shown are implemented in October of each year.

Table 5-5: Five Year Fixed Meter Service Charges

Line no.	Meter Size	Current Charge	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
1	5/8"	$31.02	$30.68	$32.98	$35.46	$38.12	$40.97
2	3/4"	$37.19	$39.64	$42.62	$45.81	$49.25	$52.94
3	1"	$49.54	$57.57	$61.89	$66.53	$71.52	$76.88
4	1.5"	$100.50	$102.39	$110.07	$118.32	$127.19	$136.73
5	2"	$127.36	$156.17	$167.88	$180.47	$194.00	$208.56
6	3"	$245.94	$299.58	$322.05	$346.20	$372.16	$400.08
7	4"	$358.35	$460.92	$495.48	$532.65	$572.59	$615.54
8	6"	$682.60	$909.08	$977.26	$1,050.55	$1,129.34	$1,214.04
9	8"	$1,006.84	$1,446.87	$1,555.38	$1,672.04	$1,797.44	$1,932.25
10	10"	$1,006.84	$2,074.29	$2,229.87	$2,397.11	$2,576.89	$2,770.16

5.4 PROPOSED PRIVATE FIRE CHARGES

Table 5-6 shows the derivation of private fire charges. The total amount associated with private fire protection is show on Line 10 of Table 5-2. Lines 3 calculates the yearly private fire charge for the smallest connection size by dividing line 1 by line 2. Line 4 divides line 3 by six to create a bi-monthly charge.

Line 8 calculates the backflow maintenance charge in the same manner. The total backflow maintenance costs were established in Line 7 of Table 5-2. Line 8 calculates the yearly backflow maintenance charge (which is associated with all private fire connections) by dividing Line 6 by Line 7. Line 9 divides Line 8 by 6 billing periods per year to calculate a bi-monthly charge. This charge is applied to all accounts regardless of connection size.

Table 5-6: Calculation of Private Fire Charges

ine No	Private Fire Protection	
	(A)	(B)
1	Private Fire Protection Costs	$44,248
2	Equivalent Connections	$8,975
3	Yearly Charge	$4.93
4	**Bi-Monthly Charge**	**$0.82**
5		
6	Backflow Maintenance Costs	$1,751
7	Number of Accounts	44
8	Yearly Charge	$39.80
9	**Bi-Monthly Charge**	**$6.63**

Table 5-7 shows the derivation of the bi-monthly Private Fire Charge in Column I. Column I is the summation of Columns E, F and H. The private fire charge for one-inch connections, shown in column F, was derived in Table 5-6. It is then scaled up using the potential demand ratios shown in column C.

The backflow charge was also derived in Table 5-6. To ease the impact of implementing private fire charges that are in accordance with the methodology set forth by AWWA, the District decided to apply a small amount of non-rate revenue, shown as the revenue offset in column H, to large private fire connections. Not doing so would have resulted in a large impact to these private fire connections. The District has discretion in the manner in which it applies non-rate revenue – which in this case is tax revenue. The total amount of revenue offset, shown in Line 8 of Table 5-2, is applied in proportion to the potential demand from each connection as shown in Column G. The proposed private fire charges are based on the potential flow through each private fire connection and are calculated in accordance with principles set forth in the AWWA M1 Manual.[13] We note that the proposed private fire charges are lower than the current charges with the exception of the 8-inch through 10-inch meters. The total private fire revenue equals the sum of Lines 7,8 and 10 in Table 5-2 which is equal to the revenue shown in Line 11, Column I of Table 5-7.

Table 5-7: Calculation of Private Fire Charges

Line No.	Meter Size	Number of Meters	Potential Demand	Equivalent Demand	Backflow Maintenance	Bi-Monthly Private Fire Charge	Potential Demand Ratio	Revenue Offset	Total Bi-Monthly Rate
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
1	1"	0	1.00	-	$6.63	$0.82			**$7.46**
2	1.5"	0	2.90	-	$6.63	$2.39			**$9.02**
3	2"	0	6.19	-	$6.63	$5.09			**$11.72**
4	3"	0	17.98	-	$6.63	$14.77			**$21.41**
5	4"	10	38.32	383	$6.63	$31.49			**$38.12**
6	6"	6	111.31	668	$6.63	$91.46			**$98.09**
7	8"	24	237.21	5,693	$6.63	$194.91			**$201.54**
8	10"	2	426.58	853	$6.63	$350.51	38%	-$95.91	**$261.23**
9	12"	2	689.04	1,378	$6.63	$566.17	62%	-$154.92	**$417.88**
10		**44**		**8,975**				**-$3,010**	
11	Total Revenue Collected ->								**$42,989**

Table 5-8 shows the proposed private fire charges for the five-year Study Period.

[13] Section VII of the fifth edition

Table 5-8: Proposed Five Year Private Fire Charges

Meter Size (inches)	Current Charges	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
5/8"	NA	NA	NA	NA	NA	NA
3/4"	NA	NA	NA	NA	NA	NA
1"	$19.19	$7.46	$8.01	$8.62	$9.26	$9.96
1.5"	$24.10	$9.02	$9.70	$10.42	$11.21	$12.05
2"	$29.99	$11.72	$12.60	$13.54	$14.56	$15.65
3"	$45.69	$21.41	$23.01	$24.74	$26.60	$28.59
4"	$63.35	$38.12	$40.98	$44.05	$47.36	$50.91
6"	$112.42	$98.09	$105.45	$113.36	$121.86	$131.00
8"	$171.31	$201.54	$216.65	$232.90	$250.37	$269.15
10"	$240.01	$261.23	$280.82	$301.88	$324.53	$348.86

5.5 VOLUMETRIC RATES

Total Volumetric Revenue

Table 5-2, Line 13 shows the total amount of revenue the Volumetric Rates are designed to collect. We will derive each component of the Volumetric Rate for each class to collect this amount. First, we must define the new proposed Single Family tier breakpoints.

Customer Classes

The District proposes a total of three customer classes:

1) Single Family
2) Multi-family, Commercial and Industrial customers
3) Public Authority and Irrigation customers

These classes are based on analyzing the peaking factors of each class using CY 2016 data. The classes are based on grouping customers together based on how they used the water system as evidenced by each classes' peaking factors. Peaking factors were calculated for each class and were highly similar among Multi-family, Commercial and Industrial customers (less than a 4% difference). Therefore, it is reasonable to combine these customers into one class. The peaking factors for Public Authority and Irrigation were identical.

Tier Definitions

Table 5-9 shows the proposed tier breakpoints. A common method to establish tier breakpoints is to set the first-tier breakpoint equal to the average winter consumption – this is the method we used to set the Tier 1 breakpoint. This assumes that most of winter water use is mostly indoor water use – thus this is a proxy for an indoor water budget. Tier 2 is use beyond the Tier 1 breakpoint. The revised lower Tier 1 breakpoint reflects recent conservation mandates and public outreach efforts during the drought which ended in CY 2016. The last two columns show the water use in each tier and the percent of bills that fall within each tier.

Table 5-9: Proposed Single Family Residential Tiers

Tier	Current Tier Breakpoint (hcf)	Proposed Tier Breakpoint (hcf)	Use (hcf)	Percent of Single Family Use	Percent of Single Family Bills
1	25	20	200,881	68%	52%
2	>25	>20	92,558	32%	48%
				100%	**100%**

Volumetric Rate Derivation

The total volumetric rate is the summation of unit rates for each cost component:

1) Supply,
2) Delivery,
3) Peaking (Max day and hour),
4) Conservation and
5) Pumping (Pump Zones).

We will derive each unit rate and sum each rate to get the total Volumetric Rate for each tier and customer class. First let us define each cost component (unit rate component).

Cost Component Definitions

Water Supply costs are costs associated with obtaining and treating water to make it ready for delivery from each District source:

1) Groundwater and
2) Groundwater leases.

Delivery costs are the operating and capital costs associated with delivering water to all customers through the distribution system (not including distribution storage) at a constant average rate of use – also known as serving customers under average daily demand conditions. Therefore, delivery costs are spread over all units of water, which results in an equal delivery unit cost for all classes and tiers.

Peaking costs, or extra-capacity costs, are costs incurred to meet customer peak demands in excess of base use (or in excess of average daily demand). Peaking costs are shown in Line 3 of Table 5-2, which is the sum of maximum day and maximum hour costs shown in Columns C and D in Table 4-10. For the portion of peaking costs collected through the Volumetric Rate (shown in Line 3 of Table 5-2), peaking costs are distributed to each tier and class using peaking factors derived from customer use data, which are discussed later in this section. For the portion of peaking costs collected through the Monthly Service Charge, AWWA hydraulic capacity factors are used to distribute peaking costs to the various meter sizes – as derived and discussed in Section 5.3.

Conservation costs are costs which cover water conservation and efficiency programs and efforts. These costs were allocated equally to all user classes.

Derivation of the Unit Cost by Cost Component

Supply Unit Costs

Table 5-10 shows the supply cost derivation ***by source***. The unit costs are shown in Line 7 and are derived by dividing Line 6 by Line 3. Future water costs for CY 2020 were used to establish the tier supply rates to better reflect the fact that groundwater production costs are expected to increase significantly in the next few years as the rate for the Resource Development Assessment is expected to increase.

The total water supply revenue requirement in Line 6 is equal to the water supply cost component shown in Line 1 of Table 5-2.

Table 5-10: Supply Cost Derivation

Line No.		Groundwater - San Gabriel Basin Watermaster	Leased Groundwater (Replacement Water Assessment)	Total
1	Acre Feet (AF))	858	579	1,437
2	Percent of Supply	60%	40%	100%
3	Water Use by Source (hcf)	390,018	263,333	653,350
4	Water Cost	$316,497	$533,782	$850,279
5	Proportion of Water Cost	37%	63%	100%
6	Water Supply Reveune Requirement	$287,933	$485,608	$773,541
7	**Unit Cost ($/ hcf)**	**$0.74**	**$1.84**	**$1.18**

Once we know the supply cost by source we derive the supply cost for each tier by taking the weighted average rate for each source – weighted by the water use from each source. For example, the Tier 1 rate is as follows: (175,169 x $0.74 + 25,712 x $1.84)/200,881 = $0.88 – shown in Line 1 of Table 5-11. The same calculation is performed for Tier 2. Note that the average supply rate for all classes is shown in Line 3.

Table 5-11: Derivation of the Supply Cost by Tier

Line No.	SFR Supply Allocation	Use (hcf)	Groundwater - San Gabriel Basin Watermaster	Leased Groundwater (Replacement Water Assessment)	Unit Cost
			$0.74	$1.84	
1	Tier 1	200,881	175,169	25,712	**$0.88**
2	Tier 2	92,558	0	92,558	**$1.84**
3	**Total**	**293,440**	**175,169**	**118,271**	**$1.18**

Delivery Cost

We derive the delivery rate in Table 5-12 by dividing the delivery costs identified in Table 5-2, by the total District water use. The delivery rate is the unit cost to deliver water under ***average daily demand (ADD)*** conditions. This delivery cost is the same for all classes and for all tiers.

Table 5-12: Derivation of the Delivery Unit Cost

Delivery Rate Derivation	
Delivery Costs	$342,377
Total Use	653,350
Delivery Rate	**$0.52**

Peaking Rate

Table 5-13 shows the peaking rate derivation by class and tier. The total peaking costs for each class and tier were derived by calculating peaking unit rates and multiplying this rate by the max day and max hour use for each tier and class, both of which are shown in Appendix A. The peaking factors, shown in Column E were derived using District water use data and are the ratio of peak water use (during the maximum bi-monthly summer billing cycle) divided by the average bi-monthly water use. The peaking rate, shown in Column D, is calculated by dividing the peaking costs (Column B) by water use (Column C) for each class and tier. Note that the peaking rate is correlated with the peaking factor – a higher peaking factor correlates to a higher peaking rate. Also note that the total peaking costs in Column B of Table 5-13 matches the total peaking costs shown in Table 5-2. The weighted average peaking rate for all classes is shown in Line 9.

Table 5-13: Derivation of Peaking Rate

Line No.	Customer Class (A)	Peaking Costs (B)	Use (hcf) (C)	Peaking Rates ($/hcf) (D)	Max Day Peaking Factor (E)
1	Single Family				
2	Tier 1	$27,172	200,881	**$0.14**	1.34
3	Tier 2	$36,520	92,558	**$0.39**	2.01
4	Multi-family	$14,198	85,654	**$0.17**	1.42
5	Commercial	$15,940	96,160	**$0.17**	1.42
6	Industrial	$6,785	40,933	**$0.17**	1.42
7	Public Authority	$14,647	38,709	**$0.38**	1.97
8	Irrigation	$37,255	98,455	**$0.38**	1.97
9	**Total**	**$152,517**	**653,350**	**$0.23**	

Conservation Rate

Table 5-14 shows the conservation rate derivation for all customers. The conservation rate is derived by dividing the conservation costs shown in Line 1 (equal to Line 6 of Table 5-2) by the District's annual use in Line 2 of Table 5-14.

Table 5-14: Derivation of Conservation Unit Costs

Line No.	Conservation Rate	
1	Conservation Cost	$14,295
2	Total Use (hcf)	653,350
3	**Conservation Rate**	**$0.02**

Final Rate Derivation

We have calculated the rates for each cost component: supply, delivery, peaking and conservation. Pumping rates are derived in the next section.

Adding the total revenue in Line 9, Column G to the revenue from pump zones 2,3,4 and 5, shown in Lines 2,3,4 and 5, Column C of Table 5-16, yields the total volumetric revenue requirement in Line 13 of Table 5-2 ($1.447 million)

Table 5-15 shows the total Volumetric Rate derivation for all customer classes. This is the summation of all rate components derived in earlier tables in this section. The total Volumetric Rate shown in Column G is designed to collect the volumetric costs (before pump zone costs for zones 2,3,4 and 5 are added) shown in Table 5-2. Note that we have included the pumping costs associated with Zone 1 in Column F because all customers benefit from pumping in this zone. Adding the total revenue in Line 9, Column G to the revenue from pump zones 2,3,4 and 5, shown in Lines 2,3,4 and 5, Column C of Table 5-16, yields the total volumetric revenue requirement in Line 13 of Table 5-2 ($1.447 million)

Table 5-15: Derivation of Rates by Tier and Class

Line No.	Customer Class	Supply	Base Delivery	Peaking	Con-servation	Zone 1 Pumping Rate	Total Rate ($/hcf)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)
1	Single Family						
2	Tier 1	$0.88	$0.52	$0.14	$0.02	$0.18	**$1.74**
3	Tier 2	$1.84	$0.52	$0.39	$0.02	$0.18	**$2.97**
4	Multi-family	$1.18	$0.52	$0.17	$0.02	$0.18	**$2.08**
5	Commercial	$1.18	$0.52	$0.17	$0.02	$0.18	**$2.08**
6	Industrial	$1.18	$0.52	$0.17	$0.02	$0.18	**$2.08**
7	Public Authority	$1.18	$0.52	$0.38	$0.02	$0.18	**$2.29**
8	Irrigation	$1.18	$0.52	$0.38	$0.02	$0.18	**$2.29**
9	**Total Revenue**	**$773,541**	**$342,377**	**$152,517**	**$14,295**	**$118,214**	**$1,400,944**

Pumping Rates

Table 5-16 shows the derivation of the pumping rates by pumping zone. The rate for Zone 1 is included in the rates derived earlier since all customers benefit from pumping in this zone. We first calculate the rate for each zone, shown in Column D - which is Column C divided by Column B. Zones

3 and 5 are connected to Zone 2 and therefore the total rate for Zones 3 and 5 must include the rate for Zone 2 – this is reflected in column F. If a customer resides in any zone other than Zone 1, then pumping zone rates are added to the rates derived in Table 5-15.

Table 5-16: Derivation of Pumping Rates by Zone

Line No.	Zone (A)	Total Flow Through Zone* (hcf) (B)	Cost Associated with Pumping in Zone ($) (C)	Pumping Rate for Each Zone ($ / hcf) (D)	Total Pumping Rate ($ / hcf) (F)
1	1	653,350	$118,214	$0.18	**Included in Rates**
2	2	201,040	$39,407	$0.20	**$0.20**
3	3	9,084	$1,769	$0.19	**$0.39**
4	4	15,620	$3,611	$0.23	**$0.23**
5	5	2,770	$531	$0.19	**$0.39**
6			**$163,531**		

* The flow shown includes the flow from zones that are above it - for example Zone 2 include flow from Zone 3 and 5

Table 5-17 shows the proposed five- year pumping rates by zone.

Table 5-17: Fiver Year Pumping Rate Charges by Zone

Line No	Zone	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
1						
2	2	$0.20	$0.21	$0.23	$0.24	$0.26
3	3	$0.39	$0.42	$0.45	$0.49	$0.52
4	4	$0.23	$0.25	$0.27	$0.29	$0.31
5	5	$0.39	$0.42	$0.45	$0.48	$0.52

5-Year Rates

Table 5-18 shows the proposed five-year Volumetric Rates for each customer class by customer class and zone. The rates shown include the pumping rates for each zone. The rates in CY 2019 through CY 2022 are derived by escalating the rates derived in Adding the total revenue in Line 9, Column G to the revenue from pump zones 2,3,4 and 5, shown in Lines 2,3,4 and 5, Column C of Table 5-16, yields the total volumetric revenue requirement in Line 13 of Table 5-2 ($1.447 million)

Table 5-15 and Table 5-16 by the proposed revenue adjustments shown in Table 2-10. Customer bill impacts are discussed in Section 6.

Table 5-18: Five-Year Volumetric Rates

Single Family Residential

	CY 2018		CY 2019		CY 2020		CY 2021		CY 2021	
Zone	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**
Zone 1	$1.74	$2.97	$1.87	$3.19	$2.01	$3.43	$2.16	$3.68	$2.33	$3.96
Zone 2	$1.94	$3.16	$2.08	$3.40	$2.24	$3.65	$2.41	$3.93	$2.59	$4.22
Zone 3	$2.13	$3.36	$2.29	$3.61	$2.46	$3.88	$2.65	$4.17	$2.85	$4.48
Zone 4	$1.97	$3.20	$2.12	$3.44	$2.28	$3.69	$2.45	$3.97	$2.64	$4.27
Zone 5	$2.13	$3.36	$2.29	$3.61	$2.46	$3.88	$2.65	$4.17	$2.84	$4.48

Multi-family, Commercial and Industrial

Zone	**CY 2018**	**CY 2019**	**CY 2020**	**CY 2021**	**CY 2022**
Zone 1	$2.08	$2.23	$2.40	$2.58	$2.77
Zone 2	$2.27	$2.44	$2.63	$2.82	$3.03
Zone 4	$2.31	$2.48	$2.67	$2.87	$3.08

Public Authority and Irrigation

Zone 1	$2.29	$2.46	$2.65	$2.84	$3.06
Zone 2	$2.49	$2.67	$2.87	$3.09	$3.32
Zone 4	$2.52	$2.71	$2.91	$3.13	$3.37

6 BILL IMPACTS

Note that all bill impacts shown below are for Zone 1 customers. Also note that exact customer bill impacts will vary by each customers' meter size and volumetric water use.

Single Family Bill Impacts

Table 6-1 shows the monthly Single Family customer bill impacts for various use points and assuming a 5/8-inch meter – which is the most common meter size for Single Family customers. Column F shows the percent of bills (customers) that fall within a certain water use level during a bi-monthly billing period. For example, 52% of the annual bills are for 20 hcf or less. Note that the overall revenue adjustment for the District in CY 2018 is 15.5%, which means that on average one could expect a 15.5% increase for customers. However, due to the slightly lower fixed charge and tiered rate structure, customers who use 30 hcf or less per month will see a lower bill impact than the overall revenue adjustment. Table 6-1 shows the approximate mode (most commonly billed use amount), median (50% of customers below and 50% of customers above this amount) and average water use.

Table 6-1: Monthly Single Family Bill Impacts (5/8" Meter)

Single Family 5/8 inch meter	Use (hcf) (A)	Current Bill (B)	Proposed Bill (C)	Dollar Difference (D)	Percent Difference (E)	Precent of Customers (F)
	5	$39.07	$39.39	$0.32	0.8%	6.9%
	10	$47.12	$48.10	$0.98	2.1%	20.4%
Approximate Mode	15	$55.17	$56.81	$1.64	3.0%	36.2%
Appoximate Median	20	$63.22	$65.52	$2.30	3.6%	52.2%
Approximate Average (24)	25	$71.27	$80.35	$9.08	12.7%	65.7%
	30	$82.87	$95.17	$12.30	14.8%	75.8%
	35	$94.47	$110.00	$15.53	16.4%	82.9%
	40	$106.07	$124.83	$18.76	17.7%	88.2%

Multi-family Bill Impacts

Table 6-2 shows monthly Multi-family customer bill impacts for various use points, assuming a 3/4-inch meter – which is the most common meter size for this class. The approximate average use for Multi-family customers is 245 hcf.

Table 6-2: Multi-family Bill Impacts (5/8" Meter)

Multi-family 3/4 inch meter	Use (hcf) (A)	Current Bill (B)	Proposed Bill (C)	Dollar Difference (D)	Percent Difference (E)	Precent of Customers (F)
	50	$134.69	$143.47	$8.78	6.5%	5.9%
	100	$134.69	$143.47	$8.78	6.5%	28.7%
	150	$232.19	$247.30	$15.11	6.5%	62.3%
	200	$329.69	$351.13	$21.44	6.5%	82.4%
	250	$427.19	$454.96	$27.77	6.5%	86.4%
	300	$524.69	$558.79	$34.10	6.5%	88.3%
	350	$622.19	$662.62	$40.43	6.5%	90.4%
	400	$719.69	$766.44	$46.75	6.5%	90.4%

Commercial

Table 6-3 shows the Commercial customer bill impacts for various use points and assuming a 5/8-inch meter – the most common meter size for this class. The average use is 54 hcf.

Table 6-3: Commercial Bill Impacts (5/8" Meter)

Commercial 5/8 inch meter	Use (hcf) (A)	Current Bill (B)	Proposed Bill (C)	Dollar Difference (D)	Percent Difference (E)	Precent of Customers (F)
	10	$50.52	$51.45	$0.93	1.8%	48%
	20	$70.02	$72.21	$2.19	3.1%	64%
	30	$89.52	$92.98	$3.46	3.9%	73%
	40	$109.02	$113.74	$4.72	4.3%	77%
	50	$128.52	$134.51	$5.99	4.7%	80%
	60	$148.02	$155.28	$7.26	4.9%	83%
	70	$167.52	$176.04	$8.52	5.1%	85%
	80	$187.02	$196.81	$9.79	5.2%	87%
	90	$206.52	$217.57	$11.05	5.4%	88%
	100	$226.02	$238.34	$12.32	5.5%	89%

Industrial

Table 6-4 shows the Industrial monthly customer bill impacts assuming a 2-inch meter – the most common meter size for this class. The average government water use is 909 hcf.

Table 6-4: Industrial Bill Impacts (2" Meter)

Industrial 2 inch meter	Use (hcf) (A)	Current Bill (B)	Proposed Bill (C)	Dollar Difference (D)	Percent Difference (E)
	500	$1,102.36	$1,194.45	$92.09	8.4%
	750	$1,589.86	$1,713.60	$123.74	7.8%
	1,000	$2,077.36	$2,232.74	$155.38	7.5%
	1,250	$2,564.86	$2,751.88	$187.02	7.3%
	1,500	$3,052.36	$3,271.03	$218.67	7.2%

Public Authority and Irrigation

Table 6-4 shows the Public Authority customer bill impacts assuming a 2-inch meter – the most common meter size for both classes. The approximate average water use for the Public Authority and Irrigation classes is 218 and 178 hcf respectively.

Table 6-5: Public Authority and Irrigation Bill Impacts (2" Meter)

Public Authority and Irrigati 2 inch meter	Use (hcf) (A)	Current Bill (B)	Proposed Bill (C)	Dollar Difference (D)	Percent Difference (E)
	100	$322.36	$385.09	$62.73	19.5%
	200	517.36	$614.01	$96.65	18.7%
	300	712.36	$842.93	$130.57	18.3%
	400	907.36	$1,071.85	$164.49	18.1%

7 APPENDIX A: UNITS OF SERVICE AND UNIT COSTS OF SERVICE DERIVATION

Units of Service Derivation

Line No.	Customer Class (A)	Tier Breakpoint (B)	Annual Use (hcf) (C)	Average Daily Use (hcf) (D)	Bi-monthly Peaking Factor (E)	Capacity Factor (F)	Total Capacity (hcf/day) (G)	Extra Capacity (hcf/day) (H)	Capacity Factor (I)	Total Capacity (hcf/day) (J)	Extra Capacity (hcf/day) (K)	Number of Equivalent Meters (M)	Number of Accounts (N)	Percent of Total Usage (O)	Private Fire Accounts (P)
1															
2	Single Family Residential														
3	Tier 1	20	200,881	550	1.06	1.34	735	185	2	1,101	366	-	-	0%	
4	Tier 2	>20	92,558	254	1.59	2.01	510	256	3	764	254	-	-	0%	
5	Tier 3														
6	Multi-family		-	-	NA	NA	NA	NA	NA	NA	NA	-	-	0%	
7	Commercial		85,654	235	1.12	1.42	332	98	2	498	165	232	54	13%	
8	Industrial		96,160	263	1.12	1.42	373	110	2	559	186	874	280	15%	
9	Public Authority		40,933	112	1.12	1.42	159	47	2	238	79	51	7	6%	
10	Irrigation		38,709	106	1.56	1.97	209	103	3	313	104	259	27	6%	
11	Total Fire Protection		98,455	270	1.56	1.97	531	261	3	796	264	533	86	15%	
12	Private Fire Accounts		-	-	-	-	-	1,283	-	-	6,417	-	-	0%	46
13	**Total Units of Service**		**653,350**			**1.59**	**2,849**	**2,343**	**0**	**4,268**	**7,835**	**4,278**	**2,403**	**100%**	**46**
14	**Units**		hcf					hcf/day			hcf/day	Equivalent Meters	Bills		# of Accounts

Unit Rates by Cost Component

Line No.	Percent of Direct Costs for Hydrants (Remainder is for Backlow)	Cost of Service Allocation	Supply	Base	Max Day	Max Hour	Meter Service	Customer Billing	Con-servation	Direct Fire Protection/ Backflow Maintenance	Gen & Admin	Revenue Offset Tier 1	Revenue Offset Large Fire Meters	Pump Zones 1	2	3	4	5	Private Fire Protection	Sub Total
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)
1		Cost of Service	$773,541	$342,377	$414,276	$45,282	$82,342	$183,898	$14,295	$116,751	$0	$0	-$3,010	$118,214	$39,407	$1,769	$3,611	$531		$2,133,285
2		Private Fire Protection			-$38,033	-$6,215													$44,248	$0
3	98.5%	Allocation of Public Fire to Meter Service (Fixed Charge)			-$188,906	-$30,870	$334,776			-$115,000	$0									
4		Allocation of Peaking to Meter		$0	-$41,214	-$1,803	$43,018													$0
5		**Total Adjusted Cost of Service**	**$773,541**	**$342,377**	**$146,123**	**$6,393**	**$460,136**	**$183,898**	**$14,295**	**$1,751**	**$0**	**$0**	**-$3,010**	**$118,214**	**$39,407**	**$1,769**	**$3,611**	**$531**	**$44,248**	**$2,133,285**
6			36%	16%	7%	0%	22%	8.6%	1%	0%										100%
7		**Unit of Service**	653,350	653,350	1,059	1,418	4,278	2,403	653,350	4,278		200,881		653,350	201,040	9,084	15,620	2,770	8,975	
8			hcf	hcf	hcf/day	hcf/day	equivalent meter/yr	bills/yr	hcf	equivalent meters				Total hcf in Zone	Total hcf in Zone	Total hcf in Zone	Total hcf in Zone	Total hcf in Zone	Priv Fire Demand Unit	
9																				
10		**Unit Cost of Service Rates**	**$1.18**	**$0.52**	**$137.92**	**$4.51**	**$107.559**	**$76.53**	**$0.02**	**$0.41**		**$0.00**		**$0.18**	**$0.20**	**$0.19**	**$0.23**	**$0.19**	**$4.93**	
			hcf	hcf	hcf/day	hcf/day	equivalent meter/yr	per year	hcf	equivalent meter/ yr									Yrly Charge per demand unit	

EXHIBIT B

La Puente Valley
County Water District
112 North 1st Street
La Puente, CA 91744

**THIS IS IMPORTANT INFORMATION ABOUT YOUR WATER RATES.
PLEASE HAVE SOMEONE TRANSLATE IT FOR YOU.**

**ESTE INFORME TIENE INFORMACION MUY IMPORTANTE SOBRE SUS TARIFAS DE AGUA.
POR FAVOR, PIDALE A ALGUIEN QUE LO TRADUZCA PARA USTED.**

Public Hearing

The California Constitution requires that the District provide notice of the proposed rate increases to all property owners of record upon which the water service charges are proposed for imposition or any tenant directly liable for the payment of water service rates and charges (i.e. a District water customer who is not a property owner). This notice must be given at least forty-five (45) days prior to the District holding a public hearing to consider the proposed rate increases. The District's Board of Directors will hold a public hearing on the proposed increases set forth herein at **5:30 p.m.** on **October 15, 2018,** or as soon thereafter as the matter may be heard, at **112 N. 1st Street, La Puente, CA 91744 in the La Puente Valley County Water District Board Room.**

Your Right to Protest

Any owner of a parcel of real property in the District's service area or any tenant directly liable for the payment of water service rates and charges (i.e. a District water customer who is not a property owner) may submit a written protest to the proposed increases to the District's water rates described in this notice. One protest is permitted per each real property parcel. Any written protest must: (1) state that the identified property owner or tenant is opposed to the proposed rate increases; (2) provide the location of the identified parcel (by street address or assessor's parcel number); and (3) include the name and signature of the property owner or tenant submitting the protest. You may file a written and signed protest against the proposed increases with the District's Secretary at or before the close of the public hearing. If you own more than one parcel, you may file a single protest covering all parcels, but it must separately identify each parcel you own. At the hearing, the District's Board of Directors shall consider all written protests that comply with the legal requirements specified in the California Constitution. Oral comments at the public hearing will not qualify as formal protests unless accompanied by a written protest. Upon the conclusion of the public hearing, the District's Board of Directors will consider adoption of the proposed changes to the rates for water service charges as described in this notice. If written protests against the proposed rates are not presented by a majority of the property owners or tenants of the identified parcels subject to the water service charges as outlined above, the District's Board of Directors may adopt the rate adjustments set forth in this notice. Written protests may be mailed or delivered in person to:

La Puente Valley County Water District
Attn: Board Secretary
112 North 1st Street
La Puente, California 91744

You're Invited

to attend a public hearing on proposed adjustments to water use rates and service charges.

OCTOBER 15, 2018
5:30 P.M.

112 N. 1st Street
La Puente, CA 91744

La Puente Valley County Water District

LA PUENTE VALLEY COUNTY WATER DISTRICT
NOTICE OF PROPOSED ADJUSTMENTS TO WATER USE RATES AND SERVICE CHARGES AND PUBLIC HEARING THEREON

When
October 15, 2018 at 5:30 p.m.
or as soon thereafter
as the matter may be heard

Where
112 N. 1st Street
La Puente, CA 91744
La Puente Valley County
Water District Board Room

Why Water Rate Adjustments Are Needed

La Puente Valley County Water District ("District") recently completed the "La Puente Valley County Water District Study of Water Rates, Fees and Charges." That study, which is referred to herein as the "Rate Study," is available for review at the District office and on the District website (www.lapuentewater.com) and is incorporated herein by this reference. The District has not had a water rate adjustment since September 2015. Although the District has tried to minimize the impact of rising operational costs through various cost savings efforts, the Rate Study concludes that rate increases are necessary to generate additional revenue needed to offset the increases in the District's overall operational expenses that the District has and will continue to experience. Those increased expenses include, but are not limited, to:

Cost of Water – The District is fortunate to have rights to a local groundwater source in the Main San Gabriel Basin ("Basin"), but any water the District pumps over its allotment must be replaced to maintain water levels in the Basin by leasing rights or purchasing imported water. The cost for this replacement water has increased by over twenty-three percent (23%) in the last four years.

Groundwater Management – A new groundwater pumping assessment has been put into effect by the Main San Gabriel Basin Watermaster in order to secure additional water resources to maintain water levels in the Basin. This assessment will have a large cost impact on the District and all water providers that pump groundwater from the Basin in the San Gabriel Valley.

Capital Improvements – The District continuously invests in capital improvement projects that improve the performance of the water system or extend the life of existing facilities and equipment to avoid more expensive emergency repairs. In 2017, the District updated its Ten-Year Water Master Plan which identified necessary improvements and prioritized projects based on their need and benefit.

Calculation of Proposed Water Rate Adjustments

As a public agency, to the extent the District's revenues exceed its expenses, those revenues are either re-invested in the District's water supply and distribution systems, added to the District's reserves to be used for subsequent repair or replacement of its system and facilities, or held in the event of an emergency. In determining the amount of the required future water rate adjustments for years 2018 through 2022, the District analyzed projected expenses and the revenues necessary to meet those anticipated expenses. That analysis examined the yearly expenses required to operate the District's water system, less recurring non-rate revenue, miscellaneous income, and interest earnings. The yearly expenses include operation and maintenance expenses, reserve funding, cash financed capital projects, and anticipated debt service payments for capital projects. The District then used water industry standard cost of service calculations to allocate the required revenues among its customer classes.

In an effort to promote efficient water use, the proposed rate increases are applied in a tiered rate structure whereby residential customers who use more water than other residential customers pay a higher rate. The District proposes to revise the current tiered rate structure so that the higher rate for second tier water usage now applies after use of 20 billing units (each billing unit consists of 748 gallons) in a billing period. The rate for the second tier is higher in an effort to recover costs related to the purchase of expensive Basin replacement water the District is required to pay when the District pumps more water than its allotted annual production right in the Basin.

Basis of Proposed Adjustments in Water Rates and Charges

Costs to produce and deliver water, including replacement water assessments, are the District's most significant costs in providing water service. In recent years, the District has not passed on those increases in costs. However, additional revenues are now needed to cover continually increasing costs. The Rate Study provides a detailed analysis of the methods used to calculate the proposed adjusted rates and charges, and how those rates and charges are fairly allocated across the District's various customer classes.

In addition, the Rate Study recommends that the District impose pumping surcharges as part of the commodity rate for each of the District's five pumping zones. These surcharges are established to fairly allocate the costs of providing water to higher elevations. Those costs include higher electrical power costs and pump maintenance costs that serve those customers who reside in the higher elevations. The Rate Study includes the detailed calculation by which the District calculated those surcharges. Customers with questions concerning the applicable pumping zone criteria or specific pumping zones are welcome to call the District office.

Impact of Proposed Adjustments to Rates and Charges

Proposed adjustments would be implemented in five phases, beginning with the first billing cycle after October 15, 2018, and increases effective on the first billing cycle after October 15th of each succeeding year (i.e. October 15, 2019, October 15, 2020, October 15, 2021 and October 15, 2022). For reference, **Table-5** of this notice (see Page 6) shows the impact of the proposed rates to a typical residential customer for the first year. Additional examples can also be found in the Rate Study.

Proposed Increases to Water Rates and Charges

The following tables set forth the District's new proposed water rates and charges. The proposed adjustments impact all properties and accounts within the District's service area. **Table-1** shows the current and proposed bi-monthly flat rate service charge, which is determined by meter size, and **Table-2** shows the proposed adjustments in the Residential class commodity rate for each pumping zone, which is determined by the quantity of water used in the applicable billing period. **Table-3** shows the current and proposed adjustments in the commodity rate for Commercial, Industrial, and Multi-Family customer classes, which is also determined by the quantity of water used in the applicable billing period. **Table-4** shows the current and proposed adjustments in the commodity rate for Public Authority and Irrigation customer classes, which is also determined by the quantity of water used in the applicable billing period.

Table - 1
Current and Proposed Service Charges

Current		Proposed Bi-Monthly Charge				
Meter Size	**Bi-Monthly Charge ($)**	**2018 (Oct. 15, 2018)**	**2019**	**2020**	**2021**	**2022**
5/8"	31.02	30.68	32.98	35.46	38.12	40.97
3/4"	37.19	39.64	42.62	45.81	49.25	52.94
1"	49.54	57.57	61.89	66.53	71.52	76.88
1.5"	100.50	102.39	110.07	118.32	127.19	136.73
2"	127.36	156.17	167.88	180.47	194.00	208.56
3"	245.94	299.58	322.05	346.20	372.16	400.08
4"	358.35	460.92	495.48	532.65	572.59	615.54
6"	682.60	909.08	977.26	1050.55	1129.34	1214.04
8"	1006.84	1446.87	1555.38	1672.04	1797.44	1932.25

Table - 2
Current and Proposed
Residential Commodity Rates

Pumping Zone	Current		2018		2019		2020		2021		2022	
	Tier 1	Tier 2	Tier 1	Tier 2	Tier 1	Tier 2	Tier 1	Tier 2	Tier 1	Tier 2	Tier 1	Tier 2
	0-25 HCF	>25 HCF	0-20 HCF	>20 HCF	0-20 HCF	>20 HCF	0-20 HCF	>20 HCF	0-20 HCF	>20 HCF	0-20 HCF	>20 HCF
Zone 1	$1.61	2.32	1.74	2.97	1.87	3.19	2.01	3.43	2.16	3.68	2.33	3.96
Zone 2	$1.81	2.52	1.94	3.16	2.08	3.40	2.24	3.65	2.41	3.93	2.59	4.22
Zone 3	$1.98	2.69	2.13	3.36	2.29	3.61	2.46	3.88	2.65	4.17	2.85	4.48
Zone 4	$1.86	2.57	1.97	3.20	2.12	3.44	2.28	3.69	2.45	3.97	2.64	4.27
Zone 5	$2.12	2.83	2.13	3.36	2.29	3.61	2.46	3.88	2.65	4.17	2.84	4.48

(HCF = 748 gallons which is 1 billing unit)

Table - 3
Current and Proposed Commercial, Industrial and Multi-Family Commodity Rates

Pumping Zone	Current	2018	2019	2020	2021	2022
Zone 1	$1.95	2.08	2.23	2.40	2.58	2.77
Zone 2	$2.15	2.27	2.44	2.63	2.82	3.03
Zone 4	$2.20	2.31	2.48	2.67	2.87	3.08

Table - 4
Current and Proposed Public Authority and Irrigation Commodity Rates

Pumping Zone	Current	2018	2019	2020	2021	2022
Zone 1	$1.95	2.29	2.46	2.65	2.84	3.06
Zone 2	$2.15	2.49	2.67	2.87	3.09	3.32
Zone 4	$2.20	2.52	2.71	2.91	3.13	3.37

Table-5 shows the bi-monthly water bill impacts over the next five years for different levels of usage for a typical residential customer with a 5/8-inch meter. The average water use for a residential customer in a bi-monthly period is 25 HCF. (HCF = 748 gallons which is 1 billing unit)

Table - 5
Example of 5/8" Meter Service Residential Water Bill Impacts for Customers in Zone 1

Types of Use	Usage (HCF)	Current Bi-Monthly Bill	2018	Annual % Increase	2019	Annual % Increase	2020	Annual % Increase	2021	Annual % Increase	2022	Annual % Increase
	10	47.12	48.08	2.0%	51.68	7.5%	55.56	7.5%	59.72	7.5%	64.27	7.6%
Half the Avg. (approx.)	13	51.95	53.30	2.6%	57.29	7.5%	61.59	7.5%	66.20	7.5%	71.26	7.6%
	20	63.22	65.48	3.6%	70.38	7.5%	75.66	7.5%	81.32	7.5%	87.57	7.7%
Average Usage	25	71.27	80.33	12.7%	86.33	7.5%	92.81	7.5%	99.72	7.4%	107.37	7.7%
	30	82.87	95.18	14.9%	102.28	7.5%	109.96	7.5%	118.12	7.4%	127.17	7.7%
	40	106.07	124.88	17.7%	134.18	7.4%	144.26	7.5%	154.92	7.4%	166.77	7.6%
Twice the Avg.	50	129.27	154.58	19.6%	166.08	7.4%	178.56	7.5%	191.72	7.4%	206.37	7.6%

Table-6 below shows the bi-monthly water bill impacts over the next five years for the Commercial, Industrial and Multi-Family rate classes for different levels of usage based on a 1-inch meter size. The average use for this rate class is approximately 54 HCF per bi-monthly billing period.

Table - 6
1" Meter Commercial, Industrial and Multi-Family Water Bill Impacts (Zone 1)

Usage (HCF)	Current Bi-Monthly Bill	2018	Annual % Increase	2019	Annual % Increase	2020	Annual % Increase	2021	Annual % Increase	2022	Annual % Increase
25	98.29	109.57	11.5%	117.64	7.4%	126.53	7.6%	136.02	7.5%	146.13	7.4%
50	147.04	161.57	9.9%	173.39	7.3%	186.53	7.6%	200.52	7.5%	215.38	7.4%
75	195.79	213.57	9.1%	229.14	7.3%	246.53	7.6%	265.02	7.5%	284.63	7.4%
100	244.54	265.57	8.6%	284.89	7.3%	306.53	7.6%	329.52	7.5%	353.88	7.4%
150	342.04	369.57	8.0%	396.39	7.3%	426.53	7.6%	458.52	7.5%	492.38	7.4%
200	439.54	473.57	7.7%	507.89	7.2%	546.53	7.6%	587.52	7.5%	630.88	7.4%
300	634.54	681.57	7.4%	730.89	7.2%	786.53	7.6%	845.52	7.5%	907.88	7.4%
400	829.54	889.57	7.2%	953.89	7.2%	1026.53	7.6%	1103.52	7.5%	1184.88	7.4%
500	1024.54	1097.57	7.1%	1176.89	7.2%	1266.53	7.6%	1361.52	7.5%	1461.88	7.4%
600	1219.54	1305.57	7.1%	1399.89	7.2%	1506.53	7.6%	1619.52	7.5%	1738.88	7.4%

Table-7 below shows the bi-monthly water bill impacts over the next five years for the Public Authority & Irrigation rate classes for different levels of usage based on a 2-inch meter size. The average use for this rate class is approximately 200 HCF per bi-monthly billing period.

Table - 7
2" Meter Public Authority and Irrigation Water Bill Impacts (Zone 1)

Usage (HCF)	Current Bi-Monthly Bill	2018	Annual % Increase	2019	Annual % Increase	2020	Annual % Increase	2021	Annual % Increase	2022	Annual % Increase
50	224.86	270.67	20.4%	290.88	7.5%	312.97	7.6%	336.00	7.4%	361.56	7.6%
75	273.61	327.92	19.8%	352.38	7.5%	379.22	7.6%	407.00	7.3%	438.06	7.6%
100	322.36	385.17	19.5%	413.88	7.5%	445.47	7.6%	478.00	7.3%	514.56	7.6%
150	419.86	499.67	19.0%	536.88	7.4%	577.97	7.7%	620.00	7.3%	667.56	7.7%
200	517.36	614.17	18.7%	659.88	7.4%	710.47	7.7%	762.00	7.3%	820.56	7.7%
300	712.36	843.17	18.4%	905.88	7.4%	975.47	7.7%	1046.00	7.2%	1126.56	7.7%
400	907.36	1072.17	18.2%	1151.88	7.4%	1240.47	7.7%	1330.00	7.2%	1432.56	7.7%
500	1102.36	1301.17	18.0%	1397.88	7.4%	1505.47	7.7%	1614.00	7.2%	1738.56	7.7%
600	1297.36	1530.17	17.9%	1643.88	7.4%	1770.47	7.7%	1898.00	7.2%	2044.56	7.7%
700	1492.36	1759.17	17.9%	1889.88	7.4%	2035.47	7.7%	2182.00	7.2%	2350.56	7.7%

Table-8 shows the proposed bi-monthly services charges for private fire service connections, as compared to the current bi-monthly charge. As is evident, these charges depend on the size of the connection.

Table - 8
Private Fire Service Charge

Size of Connection	Current Bi-Monthly Charge	2018	2019	2020	2021	2022
1"	19.19	7.46	8.01	8.62	9.26	9.96
1.5"	24.10	9.02	9.70	10.42	11.21	12.05
2"	29.99	11.72	12.60	13.54	14.56	15.65
3"	45.69	21.41	23.01	24.74	26.60	28.59
4"	63.35	38.12	40.98	44.05	47.36	50.91
6"	112.42	98.09	105.45	113.36	121.86	131.00
8"	171.31	201.54	216.65	232.90	250.37	269.15
10"	240.01	261.23	280.82	301.88	324.53	348.86
12"	338.15	417.88	449.22	482.91	519.13	558.06

RESOLUTION NO. 255

A RESOLUTION OF THE BOARD OF DIRECTORS OF LA PUENTE VALLEY COUNTY WATER DISTRICT ADOPTING A NEW CAPACITY CHARGE FOR WATER SYSTEM CONNECTION

WHEREAS, the Board of Directors of the La Puente Valley County Water District ("the District") charges all new customers for a fair and commensurate share of the cost of the District's Water System (the "Water System") to ensure that any new connection to the District's Water System does not unfairly benefit by connecting to the Water System's facilities that were previously paid for by current District customers; and

WHEREAS, the District previously adopted Resolution 202 establishing a Water System Connection Fee Policy which imposed a water connection fee on all new District customers for that purpose; and

WHEREAS, the District strives to ensure that said Water System Connection Fee is fair and proportional to the Water System's existing facilities as well as those to be acquired and constructed, while not exceeding the estimated reasonable cost of providing water service; and

WHEREAS, the District's Board of Directors authorized District Staff to engage Raftelis Financial Consultants, Inc. to prepare a Water Capacity Fee Report to review and recommend updated fees for new connections to the Water System, a copy of which report is incorporated herein and attached hereto as Exhibit "**A**"; and

WHEREAS, based upon the recommendations made by the Water Capacity Fee Report, the District's Board of Directors desires to adopt revised fees for new connections to the District's Water System so that all new customers continue to pay their fair share of the cost of the Water System they will receive water service from; and

WHEREAS, the District's Board of Directors desires to change the name of such fee from "water system connection fee" to "capacity charge for water system connection"; and

WHEREAS, the fees generated by said capacity charge shall continue to be deposited in a separate capital facilities fund to be used solely for the purpose of operating, maintaining, repairing, replacing, and upgrading the District's Water System.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the La Puente Valley County Water District does hereby adopt and enact a Capacity Charge for Water System Connection Policy as set forth in Exhibit "**B**" attached hereto, which supersedes the Water System Connection Fee Policy previously adopted by Resolution 202, and authorizes and directs District staff to take all necessary actions to implement said policy.

ADOPTED, SIGNED AND APPROVED by the Board of Directors of La Puente Valley County Water District at a duly noticed, open and public meeting held on October 15, 2018.

Ayes:
Nays:
Abstains:
Absent:

William Rojas, President
Board of Directors
La Puente Valley County Water District

ATTEST:

Greg B. Galindo, Board Secretary

EXHIBIT A

La Puente Valley
County Water District

Water Capacity Fee Report

July 2018

RAFTELIS

RAFTELIS

July 9, 2018

Mr. Greg Galindo
General Manager
La Puente Valley County Water District
112 N 1st Street
La Puente, CA 91744

Subject: Water Capacity Fee Report

Dear Mr. Galindo:

Raftelis is pleased to present to the La Puente County Water District (District) the attached Water Capacity Fee Report. The enclosed recommendations are based on sound principles and defensible methodologies and the resulting fees are fair and equitable since they are reflective of the current value of the utility.

We enjoyed the opportunity to help the District to develop water capacity fees and the associated water rates. Should you have any questions or comments regarding this report please contact the Project Manager - Steve Gagnon at (714) 351-2013.

Sincerely,

Sanjay Gaur
Vice President

Steve Gagnon, PE
Manager

445 S. Figueroa St., Suite 2270
Los Angeles, CA 90071
www.raftelis.com

1. Executive Summary

This document describes the purpose, methodology, and calculation of water capacity fees for the La Puente Valley County Water District (District). This executive summary provides a summary of these topics and the results of the study.

Economic and Legal Framework

Capacity fees can be levied on new customers connecting to a utility or customers with expanded connections to the utility. They are one-time fees paid up-front as a condition of new development or expansion which are designed to recover the cost of the facilities required to provide service. Capacity fees reimburse existing customers for their past capital investment which they have funded through payment of monthly/bi-monthly fees to cover capital costs and debt service payments. Using this approach, all customers, both existing and new, will equally contribute to the construction costs of capital facilities.

The legal grounds for charging capacity fees are established in Government Code Sections 66013, 66016, 66022, and 66023. Per Section 66013, capacity fees imposed by an agency "shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed…" This report establishes the nexus between the capacity fee and the cost of providing capacity in the water and wastewater utilities.

Approach

There are three accepted methods to calculate capacity fees. The two that are most prevalent are the buy-in approach and the incremental cost approach. The third is a hybrid of these two approaches. The buy-in approach is most appropriate for agencies that have capacity available in their current facilities. Capacity fees calculated using the buy-in methodology collect the cost of existing facilities. By contrast, the incremental approach is most appropriate for agencies anticipating construction of new facilities to meet new demand. The costs of the new facilities are distributed to customers based on their expected utilization of the new plant's capacity. All methodologies are designed to ensure that "growth pays for growth."

Raftelis recommends that the District use the buy-in approach to determine the District's capacity fees since the District has capacity in existing facilities to serve new and expanding customers in the near term. These users will need to "buy into" the current system by paying for their share of capacity.

Buy-in Approach Calculation

There are two types of buy-in approaches; the system buy-in approach and the equity buy-in approach. The equity buy-in approach includes cash reserves while the system buy-in approach does not. The equity buy-in approach divides by current customer demand while the system buy-in approach divides by total plant capacity. The differences are fully explained in Section 4 and a summary calculation is provided below in Table 1.

There are a number of methods used to value utility infrastructure and assets. Raftelis recommends that the District value its system based on the Replacement Cost Less Depreciation (RCLD) method, which recognizes that the District's water system assets are not new. This method escalates each asset's purchase value and accumulated depreciation to current dollars using the asset's acquisition date and the Engineering News Record's nation-wide Construction Cost Index (ENR-CCI). The ENR-CCI is a widely-used index for determining construction cost inflation.

Raftelis calculated the water system asset value using the RCLD method and used the resulting total asset value to calculate two capacity fees based on the system buy-in and equity buy-in calculation approaches. Table 1 shows the resulting water capacity fees using these two methods. The District can select one of the methodologies after review by its legal counsel. The full derivation and calculations for these fees are described in Section 4.

Table 1: Current and Proposed Water Capacity Fees

		Proposed Capacity Fee	
Meter Size	Current Capacity Fee	System Buy-in	Equity Buy-in
5/8"	$1,804.15	$2,196	$3,104
3/4"	$2,706.23	$3,295	$4,656
1"	$4,510.38	$5,491	$7,760
1.5"	$9,020.76	$10,982	$15,520
2"	$14,433.21	$17,571	$24,833
3"	$28,866.43	$35,143	$49,665
4"	$45,103.79	$54,911	$77,602
6"	$90,207.59	$109,821	$155,204
8"	$144,332.14	$175,714	$248,326
10"	NA	$252,589	$356,968

2. Introduction

The District engaged Raftelis to perform a water rate study and calculate capacity fees. The results of the water rate study are contained in a separate report. Capacity fees are one-time fees paid up front as a condition of new or expanded real estate development. Capacity fees are designed to recover the cost of the facilities needed to provide water (and/or wastewater) service. Per California Government Code Section 66013, the fees "shall not exceed the reasonable cost of providing service." Therefore, the fees are required to reflect the estimated cost of the existing or additional system capacity needed to serve them. Other common terms for capacity fees are connection fees, impact fees, system development charges, development impact fees, plant and facility connection charges, and capital facility charges.

Current Fees

The District currently charges a capacity fee for new and expanded connections to the water system. The fee is levied according to water meter size, which is a reflection of the portion of system capacity used by the utility customer. Table 2 shows the District's current capacity fees by meter size.

Table 2: Current Capacity Fees

Meter Size	Current Capacity Fee
5/8"	$1,804.15
3/4"	$2,706.23
1"	$4,510.38
1.5"	$9,020.76
2"	$14,433.21
3"	$28,866.43
4"	$45,103.79
6"	$90,207.59
8"	$144,332.14
10"	NA

The proposed capacity fees reflect the current value of the water system as described in **Section 4**, which provides the nexus required by California Government Code Section 66013 between water capacity fees and the cost to provide water system capacity.

3. Capacity Fee Economic and Legal Environment

For publicly owned utilities, capital facilities are often funded by existing customers through (monthly or bimonthly) rate and charge revenue, among other sources. Existing customers' investment in existing system capacity allows newly connecting customers to take advantage of unused surplus capacity. New and expanding customers will buy into the system that has excess capacity. Through the implementation of capacity fees, new and expanding customers pay for the cost of the excess system capacity that will serve them so that existing customers are not subsidizing capital costs for new customers. This effectively puts new customers on par with existing customers for the capital costs to build the utility. In other words, the new users are ***buying into*** the existing system by repaying existing customers for their prior investment. Thus, the term "buy-in."

Economic Basis

The economic philosophy behind capacity fees is that water (and wastewater) capital facility costs should be paid by those using the utility. To fairly distribute these costs, the capacity fee should reflect the cost to provide capacity to new users and not unduly burden existing users who continue to maintain the full capacity of the utility through their user charges.

The philosophy that those using the capacity should pay for the cost of capacity is often referred to using the phrase "growth should pay for growth." This principal is summarized in the American Water Works Association (AWWA) *Manual M1, Principles of Water Rates and Charges* in the Section on System Development Charges.

Legal Framework[1]

The District has the authority to price and implement water capacity fees. The most salient limitation on this authority is the requirement that fees imposed on new and expanding development must bear a reasonable relationship to the needs and benefits brought about by the development. Courts have long used a standard of reasonableness to evaluate the legality of capacity fees. The basic statutory standards governing water (and wastewater) capacity fees are embodied by California Government Code Sections 66013, 66016, 66022, and 66023. Government Code Section 66013, in particular, contains requirements specific to pricing water and wastewater capacity fees:

> *"Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity charges, those fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed, unless a question regarding the amount the fee or charge in excess of the estimated reasonable cost of providing the services or materials is submitted to, and approved by, a popular vote of two-thirds of those electors voting on the issue."*

[1] Raftelis does not practice law nor does it provide legal advice. The above discussion is to provide a general review of state institutional constraints and is labeled "legal framework" for literary convenience only. The District should consult with its counsel for clarification of any of the topics discussed in this section.

Section 66013 also includes the following general requirements:

- Local agencies must follow a process set forth in the law, making certain determinations regarding the purpose and use of the fee; they must establish a nexus or relationship between a development project and the public improvement being financed with the fee.
- If the agency is a City, the capacity fee revenue must be segregated from the general fund to avoid commingling of capacity fees and the general fund.
- Section 66013 also requires annual reporting requirements for capacity fees revenue.

4. Capacity Fee Methodologies

There are three main methods to calculate capacity fees. Each approach has evolved largely on the basis of changing public policy, legal requirements, and the unique and special circumstances of each local agency. The three main methods are the "buy-in", "incremental-cost", and "hybrid" approaches.

Buy-In Method

The buy-in approach rests on the premise that new customers "buy-in" to the utility to reimburse existing customers who have already constructed and maintain the facilities that will serve new customers, including the costs associated with financing those services. Under this approach, a new single-family customer pays an amount equal to the value of the capacity required to serve a new home – which is measured in either gallons per day or equivalent dwelling units. One equivalent dwelling unit is the amount of water or wastewater used by an average single-family home.

To determine the value of capacity, the total value of the water utility is divided by either the *ultimate capacity* (system buy-in approach) of the system or the *current system demand* (equity buy-in approach). The equity buy-in approach also includes the system reserve balances.

To provide an example of the buy-in approach; if an existing system can serve 100 single-family homes and a new customer wants to build a new single-family home (and connect to the water system), then the new customer would pay 1/100th of the total existing system net value. By paying the capacity fee, the new customer has bought into the existing system – thus, the term **buy-in**. The user has effectively acquired a financial position on par with existing customers and will face future capital and operating costs on equal financial footing with existing customers. This approach is suited for agencies that have excess capacity in their existing system. This is the methodology that Raftelis used for the District's capacity fee study because the District does not have a major plant expansion planned to serve new customers.

Incremental Cost Method

For completeness, we will describe the two other methodologies. When new users connect to a utility system, they use either surplus capacity from the existing system or they require construction of new capacity to accommodate their needs. When a substantial amount of new facility construction is required to support growth, the incremental cost method may be used. Under the incremental-cost approach, new customers pay for the cost of additional capacity regardless of the value of past investments made by existing customers.

For instance, if it costs X dollars to provide new infrastructure (additional capacity) to serve 100 single-family homes and a new customer builds a home, then the new user would pay $X/100 to connect to the system. In other words, a new customer pays the *incremental cost of capacity* – thus, the term **incremental cost** for this methodology. As with the equity buy-in approach, new connectors will effectively acquire a financial position that is on par with existing customers. This approach is best suited for growing communities where additional facilities are needed to accommodate growth and is not recommended for the District at this time.

Hybrid Method

In addition to the above two methodologies, there is also a hybrid approach which uses aspects of both the buy-in approach and the incremental cost approach. This is appropriate when agencies have some existing reserve (unused) capacity available, yet are also in the process of planning or building additional capacity. The fee produced by the hybrid approach recognizes that new customers benefit from both existing infrastructure and planned capital improvements.

Since the District has excess capacity in the water system to support customer growth, Raftelis calculated the capacity fees using the **buy-in** method.

5. Capacity Fee Calculation

Capacity Fee Methodology

Raftelis used the **buy-in** approach to calculate water capacity fees since there is enough capacity in the water system to serve new users for the near term. The buy-in approach first separately calculates the value of the water system.

Utility System Valuation Methodology

There are several ways to establish the value of a utility including:

1. Original Cost (also known as book cost or historical cost)
2. Original Cost Less Depreciation (which subtracts depreciation)
3. Replacement Cost
4. Replacement Cost Less Depreciation

The most common valuation method is the Replacement Cost Less Depreciation (RCLD). It is often preferred to valuation methods such as Original Cost Less Depreciation (OCLD), Original Cost (OC), and Replacement Cost (RC) because of its defensibility. Barring, for example, instances of water and wastewater systems that have depreciated significantly due to lack of replacement and repair, RCLD is the most legally-defensible option for valuation because the total asset value:

1. Is inflation-adjusted by the Engineering News Record nationwide Construction Cost Index (ENR-CCI), and thus recovers the cost of replacing the infrastructure in current dollars.
2. Accounts for depreciation and, thus, addresses the fact that the water system is not new and equipment and facilities have depreciated in value.

Water Capacity Fee

Table 3 shows the capacity fee calculation. We will walk the reader through each calculation for the system buy-in and equity buy-in calculation.

Table 3: Capacity Fee Buy-in Calculation

Water Capacity Fee Calculation Buy-In Methodology	(A)	System Buy-in (B)	Equity Buy-in (C)
Line No.		Replacement Cost Less Depreciation	Replacement Cost Less Depreciation
1	Supply	$2,879,503	$2,879,503
2	Treatment	$1,975,649	$1,975,649
3	Pumping	$390,341	$390,341
4	Storage	$2,742,688	$2,742,688
5	Distribution	$6,047,441	$6,047,441
6	Fire Protection	$24,519	$24,519
7	Customer Accounting	$313,245	$313,245
8	General and Administrative	$576,303	$576,303
9	**Total**	**$14,949,690**	**$14,949,690**
10			
11	Less Contributed Assets	$4,670,104	$4,670,104
12	Less Outstanding Debt Principal	$0	$0
13	**Total Water System Valuation - System Buy-in**	**$10,279,585**	**$10,279,585**
14	Add Reserve Balances		$3,183,672
15	**Total Water System Valuation incl. Reserves - Equity Buy -in**		**$13,463,258**
16	Ultimate Max Day Plant Capacity (Gallons per day, GPD)	3,600,000	
17	Current 2010-2013 Max Day Demand (GPD, Water Master Plan)		3,336,277
18	**System Buy-In Methodology - $/GPD (Line 13/16)**	**$2.86**	
19			
20	**Equity Buy-in Methodology - $/GPD (Line 15/17)**		**$4.04**
21	Average SFR Water Use (GPD) from Water Master Plan	348	348
22	Observed Max Day/ Average Day Peaking Factor	2.21	2.21
23	Peak Max Day SFR Water Use (GPD)	769	769
24	**System Buy-In Methodology charge per 5/8" Meter**	**$2,196**	
25			
26	**Equity Buy-in Methodology charge per 5/8" Meter**		**$3,104**

Utility System Value

Lines 1 through 9 in Table 3 show the asset valuation of the water utility using the RCLD method and categorized by function. Land assets were escalated by the consumer price index rather than the ENR-CCI[2]. Depreciation was not factored into the valuation of land assets since land is not normally depreciated.

Line 1 shows the value of the District's water supply assets. Line 2 shows the value of the treatment system. Lines 3 through 8 of Table 4 show the valuation of the remaining assets for the water system. Line 11 subtracts contributed assets since these assets were donated by builders/developers and therefore the District does not have a cost basis to recover the value of these assets. Line 12 subtracts the amount of outstanding principal debt from the total asset value because this would otherwise double charge customers – once through the capacity fees and again through monthly rates and charges. Line 12 has a value of $0 because the District does not currently have outstanding debt. Line 13 shows the RCLD value of the water system for the system buy-in calculation adjusted by lines 11 and 12.

For the equity buy-in calculation, shown in column C, the utility value includes water enterprise reserves, as shown in Line 14. The basis for including reserves is that past customers have accumulated these reserves through their monthly bill payments and future users will benefit from these cash reserves since the reserves may lower rate revenue requirements. Thus, reserves can be counted as part of the value of the utility. This is similar to valuing a business in which cash equivalents are added to the discounted value of future cash flows to ascertain the total business value.

The District measures its system capacity in gallons per day (GPD). Line 18 shows the value of system capacity in dollars per gallon per day ($/GPD) for the system buy-in capacity fee calculation. It is calculated by dividing Line 13 by Line 16 – which is the total water treatment plant peak capacity in GPD.

The system buy-in capacity fee for a single-family home (also known as an equivalent dwelling unit) must estimate the peak use, in gallons per day, for a single-family home as shown in Lines 21 through 23. This is because the plant and water distribution system were designed for peak flows/capacity needs and we are allocating peak capacity. Line 21, taken from the District's most recent Water Master Plan, shows that the average single-family use is 348 gallons per day and the observed max day to average day peaking factor is 2.21. Average use multiplied by the peaking factor yields the peak max day use in GPD shown on Line 23. We use this peak day use to price the capacity in the system for a typical single-family home or 5/8" connection – which is shown on Line 24.

The equity buy-in calculation is similar to the system buy-in calculation but uses the system value shown in Line 15, which includes reserves, and divides by current customer demand shown in Line 17, resulting in the value of capacity in $/GPD shown in Line 20. Applying the same capacity estimates for the system buy-in (lines 21 through 23) yields the capacity fee for a single-family home under the equity buy-in shown in Line 26.

Table 4 shows the proposed capacity fees for larger size meters for each method. The capacity fee for an equivalent single-family dwelling is equal to the fee for a 5/8-inch meter. The capacity fee for larger meters is escalated in proportion to the safe potential flow through each meter size as estimated by the American Water Works

[2] The Consumer Price Index is not a perfect measure of land value inflation; however, under normal circumstances (barring local/regional recessions) and over time, real estate values generally tend to keep pace with salaries and inflation and, therefore, is a reasonable method of estimating a property's value in the absence of other reliable information. The Bureau of Labor Statistics recommends using the CPI- All Urban Consumers when adjusting prices because the regional CPIs are subject to high levels of volatility and sampling error due to the smaller sample size. Raftelis used the CPI-All Urban Consumers. The same argument is made for national and regional Engineering News Record Construction Cost Indexes.

Association, shown in the third column. For example, the flow through a 1-inch meter is 2.5 times (3rd column) that of a 5/8-inch meter, thus the capacity fee for a 1-inch meter is 2.5 times higher. Table 5 shows the proposed capacity fees using both the system buy-in and the equity buy-in calculation approaches. The District will select one capacity fee method after legal review. The last column shows the current number of meters by meter size.

Table 4: Capacity Fees for Larger Meter Sizes

			Proposed Capacity Fee		
Meter Size	Current Capacity Fee	AWWA Hydraulic Capacity Factors	System Buy-in	Equity Buy-in	Meter Count
5/8"	$1,804.15	1.00	$2,196	$3,104	1450
3/4"	$2,706.23	1.50	$3,295	$4,656	653
1"	$4,510.38	2.50	$5,491	$7,760	161
1.5"	$9,020.76	5.00	$10,982	$15,520	20
2"	$14,433.21	8.00	$17,571	$24,833	98
3"	$28,866.43	16.00	$35,143	$49,665	7
4"	$45,103.79	25.00	$54,911	$77,602	10
6"	$90,207.59	50.00	$109,821	$155,204	4
8"	$144,332.14	80.00	$175,714	$248,326	0
10"	NA	115.00	$252,589	$356,968	0

6. Discussion

Capacity fees are established to promote equity between past and new customers so that new customers contribute to the investment made by current and past customers to build and maintain a valuable utility. Raftelis calculated capacity fees for the District's consideration based on system value using both the system buy-in and the equity buy-in methodologies. Both are acceptable methods to establish capacity fees and have been used in the past. In-light of the regulations surrounding impact fees for other facility types (fire, library, police, parks etc.) one could argue that the system buy-in is the method least susceptible to legal challenge. However, water and wastewater capacity fees are unique and exempt from certain requirements. The equity method has been used in the past and results in a higher capacity fee since the methodology includes reserves in the valuation and divides by current customer demand (capacity) instead of ultimate capacity. Raftelis suggests the District consult its legal counsel if it wishes to implement the equity method capacity fee. The District can choose to establish a fee based on either method upon legal review or can choose to establish a lower fee than those presented in this report.

Annual Update

The District can choose to update their water system capacity fees annually or, at least, every few years. The easiest way to update the fees is to multiply the current fee by the yearly change in the (nationwide) ENR-CCI, which tracks changes in construction costs.

For example, if the ENR –CCI for FYE 2019 is 3% higher than the ENR-CCI for FYE 2018, then the District could increase the capacity fees by 3%. This method of escalating the District's capacity fees should be used for no more than four to five years. After four to five years, Raftelis recommends that the District update the fees based on the updated valuation of the District's infrastructure to reflect depreciation and additions to system assets and maintain capacity fee defensibility.

7. Conclusion

Raftelis finds that the proposed fees are viable and defensible water capacity fees which are reflective of the value of the District's water system. These fees follow generally accepted fee design criteria, adhere to the requirements of California government code, and reflect the District's current water asset value and consumption trends. Raftelis recommends that the District choose a capacity fee schedule to implement between the system buy-in or equity buy-in options or implement a lower fee. The proposed fees are reflective of the cost to provide the capacity to serve new customers and are based on the cost to "buy-in" to the water utility so that new customers are on par with the past investment made by existing customers.

EXHIBIT B

EXHIBIT "B"

LA PUENTE VALLEY COUNTY WATER DISTRICT

CAPACITY CHARGE FOR WATER SYSTEM CONNECTION POLICY

PURPOSE

The La Puente Valley County Water District's Capacity Charge for Water System Connection is established to ensure that all new connections (excluding fire service connections) to the District's existing water system (the "Water System") do not unfairly benefit from the infrastructure that has been constructed, developed, operated and maintained at the expense of the District's existing customers. In sum, by this policy new connections are required to "buy-in" to the existing Water System in order to receive water service.

The Capacity Charge for Water System Connection is assessed for property newly served by the District to bear that property's proportionate share of the cost of the Water System's facilities in relation to the benefit that the property receives. It is structured so that a new customer pays an amount equal to the value of the capacity required to serve that new connection relative to the overall capacity of the Water System. The revenues generated from the capacity charges shall be deposited into a separate capital facilities fund and used solely by the District to fund the cost of operating, maintaining, repairing, replacing and upgrading the District's Water System.

CALCULATION OF CHARGE

The calculation of the capacity charge is detailed in the Water Capacity Fee Report, which was prepared for the District by Raftelis Financial Consultants, Inc. and received and filed by the District's Board of Directors on July 9, 2018.

The "System Buy-in Methodology" detailed in the Capacity Fee Report for calculating the Capacity Charge for Water System Connection is the methodology utilized by the District to calculate its capacity charge. The table below details the capacity charge for new water system connection based upon meter size:

Meter Size	AWWA Hydraulic Capacity Factors	Capacity Charge for Water System Connection
5/8"	1	$ 2,196
3/4"	1.5	$ 3,295
1"	2.5	$ 5,491
1.5"	5	$ 10,982
2"	8	$ 17,571
3"	16	$ 35,143
4"	25	$ 54,911
6"	50	$ 109,821
8"	80	$ 175,714
10"	115	$ 252,589

The Capacity Charge for Water System Connection shall be periodically reviewed to ensure that the factors utilized by the System Buy-in Methodology remain valid, ensuring, among other things, that infrastructure depreciation and system additions and upgrades are accurately accounted for.

In the event a meter size for an existing service is increased, the Capacity Charge for Water System Connection will be assessed at the then current rate, less the amount of any connection fee previously paid for the size of meter in place prior to the request to increase the size. The Capacity Charge for Water System Connection is only one requirement to establish a new service connection to the District's Water System and does not forgo any of the other requirements to establish water service with the District as set forth in the District's Rules and Regulations for Water Service.