

# Valencia Water Company

## Cost of Service Study

2018 – 2020

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## EXECUTIVE SUMMARY

Valencia Water Company's ("Valencia Water", "Company") rates were last set in May 2015 when its Board adopted a resolution setting rates for 2015 through 2017. The rates set at that time were based on the methodology prescribed by the California Public Utilities Commission ("CPUC").

In February of 2017, Valencia Water's General Manager, a Registered Professional Civil Engineer in the state of California along with its Vice President –Controller started a review of its current rates and future financial needs. At that time they contracted with John Garon - Consultant to provide consulting services "assisting [the] Company in its preparation of its 2018-2020 general rate case" based on the methodology used in its 2015 Rate Case. This group became the "team". The team prepared this report with Valencia Water's General Manager taking the lead on the project. (See Attachment 1 for Qualifications)

In February of 2017, California Senator Wilk, introduced Senate Bill 634 ("SB 634", "Bill") – "repeal[ing] the Castaic Lake Water Agency Law (Chapter 28 of the First Extraordinary Session of the Statutes of 1962), and . . . creat[ing] the Santa Clarita Valley Water Agency, and prescribing its boundaries, organization, operation, management, financing, and other powers and duties, relating to water districts."

As of September 14, 2017, SB 634 had passed the Senate and Assembly and awaits signature by the Governor who had 30 days to act on the bill.

SB 634 Section 4 (j) includes the following text:

"No later than January 31, 2018, the [Santa Clarita Valley Water Agency], as the successor in interest to Castaic Lake Water Agency, shall take the appropriate steps together with the board of directors of Valencia Water Company to authorize the dissolution of the Valencia Water Company and to transfer the company's assets, property, liabilities, and indebtedness to the agency, consistent with the requirements of subdivision (k) and any other obligations of the parties. The dissolution and transfer shall be finalized no later than May 1, 2018, but the board of the agency may postpone this deadline until no later than July 1, 2018, if, by resolution, the board of the agency finds that specific circumstances require additional time."

If Valencia Water Company is incorporated into the new Agency, it will become a water agency/district and will be subject to Proposition 218<sup>1</sup>.

The more significant changes that Valencia Water will face resulting from becoming a district will be that it will no longer pay taxes but at the same time, it will no longer have access to additional shareholders' equity to fund needed capital projects. Valencia Water's source of funds will be limited to water rates, fees and debt. Therefore, Valencia's Capital Improvement Program ("CIP") will need to be funded on a "pay as you go" method through rates or by increasing debt.

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<sup>1</sup> Proposition 218 was an initiative adopted in the state of California on the November 5, 1996 statewide election ballot amending the constitution to protect taxpayers by limiting the methods by which local governments can create or increase taxes, fees and charges without taxpayer consent. . In 2006, the California Supreme Court ruled that the provisions of Proposition 218 apply to local water, refuse and sewer charges.

Proposition 218 added Article XIII D to the California Constitution, which in part requires that fees or charges (including water rates):

- shall not exceed the funds required to provide the property related service
- shall not be used for any purpose other than that for which the fee or charge was imposed
- shall not exceed the proportional cost of the service attributable to the parcel
- service is actually used by, or immediately available to, the owner of the property in question.

The guidelines under which Valencia Water sets rates and develops its revenue requirement as well as its source of funds will change under Proposition 218.

In order to assure it complied with Article XIII D to the California Constitution, in June of 2017, Valencia Water Company expanded its review to include a Cost of Service Study based on the American Water Works Association Manual - M1 Principles of Water Rates, Fees, and Charges Seventh Addition (“AWWA M-1”, “Manual”).<sup>2</sup> The objectives of Cost Based Ratemaking under AWWA M-1 are to establish rates that are:<sup>3</sup>

- *fair and equitable*
- *cost-based*
- *proportion to the cost to serve each class of customer*

The objectives of AWWA M-1 are directly in-line with the requirements of Proposition 218.

An initial and important step in any rate review is to determine if the current rates are adequate to meet future revenue requirements or if a rate adjustment is necessary. As discussed in more detail below, based on this initial review, without a rate adjustment, Valencia Water would not be able to fund its capital projects and meet its financial obligations in 2018 through 2020.

It is also recommended that Valencia Water establish four reserve funds, an Operating Reserve Fund, Rate Stabilization Fund, Capital Reserve Fund and Emergency Reserve Fund. These funds would be funded over a ten-year period.

<b>Table 1 - Net Cash Flow at Current Rates</b>			
	2018	2019	2020
Total Operating Revenues	27,347,944	27,504,406	27,865,195
Total Operating Expenses	20,875,780	21,009,135	21,447,280
Net Revenues	6,472,165	6,495,271	6,417,916
Current Debt Service	6,524,580	6,523,438	6,522,097
Capital Improvement Projects	1,942,000	2,007,000	3,100,000
Fund Reserves	-	-	-
Cash Excess or (Shortfall)	(1,994,415)	(2,035,166)	(3,204,181)
Cumulative Excess or (Shortfall)		(4,029,581)	(7,233,762)

<sup>2</sup> The methodology used in this report relies heavily on AWWA M-1, which is cited throughout the report.

<sup>3</sup> AWWA M-1 at page 4

As shown in Table 1 above, Valencia Water would be unable to fund its capital projects and meet its financial obligations in 2018 through 2020 let alone fund necessary reserves without a rate adjustment. As a result of our study, the team is recommending that Valencia Water increase its revenue requirements by 6.3% annually in 2018, 2019 and 2020

In addition to the increase in the Revenue Requirement, it is recommended that the Valencia Water create a pass-through surcharge to recover incremental increases in purchased water and power costs that are not covered in rates. This would result in a pass-through surcharge of \$0.050 per Ccf in 2018 and would need to be updated annually.

In addition to current water rates, Valencia Water has a Revenue Adjustment Surcharge<sup>4</sup> in place to recover drought-related and other revenue shortfall in order to meet expenses and assists with funding water conservation programs mandated by state law. (See Appendix A) This surcharge is not being reviewed as part of this study but it is recommended that Valencia Water keep this surcharge in effect as long as necessary to recover the revenue shortfall. This will allow Valencia Water to maintain its financial stability and continue to maintain a reliable and high-quality water delivery system. It is estimated that the revenue shortfall will be fully recovered by the end of 2018. When the revenue shortfall is fully recovered, which is dependent upon sales, the surcharge of \$0.412 per Ccf will be discontinued. The discontinuance of the surcharge in 2019 is reflected in the bill comparison later in this report.

## INTRODUCTION

### Background

Valencia Water Company was incorporated on April 7, 1954 in the State of California and was granted a Certificate of Public Convenience and Necessity by the CPUC in Decision No. 69744 dated October 5, 1965. Amongst other authorities, the CPUC has the authority, after conducting hearings, to set rates that are deemed just and reasonable for all utilities under its jurisdiction

Valencia Water's service area is approximately 31 square miles. Valencia Water Company currently serves approximately 31,500 connections of which 90% are residential customers, both within the incorporated City of Santa Clarita and portions of Castaic, Newhall, Saugus, Stevenson Ranch and Valencia in the unincorporated portions of Los Angeles County. Valencia Water has 365 miles of pipe, 22 wells, current groundwater capacity of 32,850 gpm, 7 wholesale connections to the Castaic Lake Water Agency with a design capacity of 37,000 gpm and 54.88 million gallons of storage. All of Valencia Water Company's system is contiguous and inter-connected.

In 2012, the Castaic Lake Water Agency acquired 100% of the stock of Valencia Water Company. As a result, the CPUC issued Decision 14-02-041 on February 27, 2014 ruling it no longer had jurisdiction over Valencia Water Company due to the acquisition.

Valencia Water Company's rates were last set in May 2015 when its Board adopted a resolution setting rates for 2015 through 2017. These rates were developed based on the CPUC Model<sup>5</sup>. The methodology

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<sup>4</sup> Resolution approved by the Board on Sept. 1, 2016

<sup>5</sup> Over the years, the CPUC has prescribed the methodologies to be used in reviewing and setting rates for all utilities it regulates including water companies. The CPUC last updated the methodologies for

prescribed by the CPUC is designed to set rates that cover all just and reasonable costs, including all taxes, and to provide the utility the opportunity to earn a fair return on its investment in capital. This is referred to as the *Utility Basis Approach* in AWWA M-1<sup>6</sup>. The return on investment is designed to cover the cost of debt and to allow the Company to pay a fair dividend to its shareholders.

### California Senate Bill 634

In February of 2017, California Senator Wilk, introduced Senate Bill 634 (“SB 634”, “Bill”) – “repeal[ing] the Castaic Lake Water Agency Law (Chapter 28 of the First Extraordinary Session of the Statutes of 1962), and . . . creat[ing] the Santa Clarita Valley Water Agency, and prescribing its boundaries, organization, operation, management, financing, and other powers and duties, relating to water districts.”

As of September 14, 2017, SB 634 had passed the Senate and Assembly and awaits signature by the Governor who had 30 days to act on the bill.

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setting rates for water utilities in 2007 with the adoption of Decision 07-05-062, adopting the Revised Rate Case Plan for Class A Water Utilities, including Valencia Water Company.

<sup>6</sup>Under the utility-basis approach to determining revenue requirements, the revenue requirements include O&M expense, depreciation expense, and a return on rate base. The depreciation expense and return on rate base portions of the revenue requirement are intended to provide for the recovery of and return on the utility’s invested capital in providing service. (AWWA M-1 page 42)

#### Depreciation Expense

Depreciation is the loss-in-service value not restored by current maintenance and is incurred in connection with the consumption or prospective retirement of the plant in the course of service. (AWWA M-1 page 43)

**Rate Base (Plant Investment)** Rate base is the value of property on which a public utility is allowed to earn a specific rate of return, in accordance with the rules set by a regulatory agency or contractual agreement. In general, rate base consists of the value of the property as used by the utility to provide service and typically consists primarily of plant in service less accumulated depreciation; plus construction work in progress (CWIP) or an allowance for funds used during construction (AFUDC), inventory, and working capital; less contributed capital (CIAC, or contributions in aid of construction), customer advances, and deferred taxes. Determining the rate base, or net plant investment, to which the rate of return should be applied (i.e., the rate base) involves several considerations. Individual regulatory agencies have specific requirements concerning the items allowed in the rate base. Considerations related to plant in service include the use of historical costs or current value and the used and useful standard, which is described below. (AWWA M-1 page 43-44)

**RATE OF RETURN** In general in a competitive market environment, the need to earn income as a source of, and a return on, capital provides business with the incentive to increase sales and revenues, if adequate capacity exists, and to minimize costs. Participants’ ability to compete for this income determines how these resources are allocated to these participants. Those economic activities demonstrating the greatest expected income relative to the perceived risks will generally attract the available resources. (AWWA M-1 page 46)

Section 1 (n) of the Bill states: “It is the intent of the Legislature that, following the enactment of this act, the Valencia Water Company will be dissolved and incorporated into the entity.”

Section 4 (j) of SB 634 to includes the following text:

“No later than January 31, 2018, the [Santa Clarita Valley Water Agency], as the successor in interest to Castaic Lake Water Agency, shall take the appropriate steps together with the board of directors of Valencia Water Company to authorize the dissolution of Valencia Water Company and to transfer the company's assets, property, liabilities, and indebtedness to the agency, consistent with the requirements of subdivision (k) and any other obligations of the parties. The dissolution and transfer shall be finalized no later than May 1, 2018, but the board of the agency may postpone this deadline until no later than July 1, 2018, if, by resolution, the board of the agency finds that specific circumstances require additional time.”

In November 1996, California voters passed Proposition 218, the “Right to Vote on Taxes Act” in a statewide election ballot. This constitutional amendment protects taxpayers by limiting the methods by which local governments can create or increase taxes, fees and charges without taxpayer consent. In 2006, the California Supreme Court ruled that the provisions of Proposition 218 apply to local water, refuse and sewer charges.

If Valencia Water Company is incorporated into the new Agency, it will become a water agency/district and will be subject to Proposition 218.<sup>7</sup> The guidelines under which Valencia Water sets rates and develops its revenue requirement as well as its source of funds will change. The more significant changes resulting from Valencia Water becoming a district will be that it will no longer pay taxes but at the same time, it will no longer have access to additional shareholders’ equity to fund needed capital projects. Valencia Water’s source of funds will be limited to water rates, fees and debt. Therefore, Valencia Water’s Capital Improvement Program (“CIP”) will need to be funded on a “pay as you go”<sup>8</sup> method through rates or by increasing debt.

Proposition 218 added Article XIII D to the California Constitution, which in part reads:

“SEC. 6. Property Related Fees and Charges. (a) Procedures for New or Increased Fees and Charges. An agency shall follow the procedures pursuant to this section in imposing or increasing any fee or charge as defined pursuant to this article, including, but not limited to, the following:

(1) The parcels upon which a fee or charge is proposed for imposition shall be identified. The amount of the fee or charge proposed to be imposed upon each parcel shall be calculated. The agency shall provide written notice by mail of the proposed fee or charge to the record owner of each identified parcel upon which the fee or charge is proposed for imposition, the amount of the fee or charge proposed to be imposed upon each, the basis upon which the amount of the proposed fee or charge was calculated, the reason for the fee or charge, together with the date, time, and location of a public hearing on the proposed fee or charge.

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<sup>7</sup> Water Utilities regulated by the California Public Utilities Commission are not subject to requirements of Proposition 218.

<sup>8</sup> AWWA M-1 at page 39



(2) The agency shall conduct a public hearing upon the proposed fee or charge not less than 45 days after mailing the notice of the proposed fee or charge to the record owners of each identified parcel upon which the fee or charge is proposed for imposition. At the public hearing, the agency shall consider all protests against the proposed fee or charge. If written protests against the proposed fee or charge are presented by a majority of owners of the identified parcels, the agency shall not impose the fee or charge.

(b) Requirements for Existing, New or Increased Fees and Charges. A fee or charge shall not be extended, imposed, or increased by any agency unless it meets all of the following requirements:

(1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.

(2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.

**(3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.**

(4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted. Standby charges, whether characterized as charges or assessments, shall be classified as assessments and shall not be imposed without compliance with Section 4.

(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. Reliance by an agency on any parcel map, including, but not limited to, an assessor's parcel map, may be considered a significant factor in determining whether a fee or charge is imposed as an incident of property ownership for purposes of this article. In any legal action contesting the validity of a fee or charge, the burden shall be on the agency to demonstrate compliance with this article."

In order to assure it complied with Article XIII D to the California Constitution, in June of 2017, Valencia Water expanded its rate review to include a Cost of Service Study based on the AWWA M-1. The team, under the supervision of Valencia Water's General Manager, completed the study.

The objectives of the AWWA M-1 Cost Based Rate-Making are:

**OBJECTIVES OF COST-BASED RATE-MAKING**

*Water rates developed using the methodologies discussed in this manual, when appropriately applied, are generally considered to be fair and equitable because these rate-setting methodologies result in cost-based rates that generate revenue from each class of customer in proportion to the cost to serve each class of customer. Water rates are considered*

*fair and equitable when each customer class pays the costs allocated to the class and, consequently, cross-class subsidies are avoided*<sup>9</sup>.

These objectives are in line with the requirements of Proposition 218.

The results of the study are addressed in detail below.

## COST OF SERVICE STUDY

### Cost of Service Study Approach

The methodology outlined in AWWA M-1 is a three-step process, 1) determine the Revenue Requirement, 2) prepare a Cost of Service Analysis and 3) design rates around the Cost of Service Analysis that will meet the utility's Revenue Requirement.

#### *Revenue Requirement Analysis*

*The purpose of the revenue requirement analysis is to determine the adequate and appropriate funding of the utility. Revenue requirements are the summation of the operation, maintenance, and capital costs that a utility must recover during the time period for which the rates will be in place. Two generally accepted approaches for establishing a utility's revenue requirements are . . . the cash-needs approach [District Approach] and the utility-basis approach [CPUC Approach]. (AWWA M-1 page 5)*

#### *Cost-of-Service Analysis*

*The purpose of the cost-of-service analysis is to equitably distribute the revenue requirements between the various customer classes of service served by the utility. The cost of-service analysis determines what cost differences, if any, exist between serving the various customer classes. The two generally accepted methodologies for conducting the cost-of-service analysis are called the base-extra capacity method and the commodity- demand method. The functionalization, allocation, and distribution process of the base-extra capacity and commodity-demand methodologies are generally considered fair and equitable because both approaches result in the revenue requirements being distributed to each class in proportion to each class's contribution to the system cost components.(AWWA M-1 page 5)*

#### *Rate-Design Analysis*

*The final technical analysis is the rate-design analysis. This analysis determines how to recover the appropriate level of costs from each customer class of service. (AWWA M-1 page 6)*

This report addresses each of these three steps in more detail below.

### Revenue Requirement

*The development of a utility's revenue requirements is the first analytical step of the comprehensive rate-setting process. The determination and establishment of a utility's revenue requirements is the basis for setting the overall level of the utility's rates, while providing the utility with adequate and sustainable funding levels for both operating and capital costs. The revenue requirement analysis provides the utility with an understanding of the size and timing of needed rate adjustments to existing rate levels and perhaps the rate structure. In providing*

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<sup>9</sup> AWWA M-1 at page 4

*adequate water service to its customers, every water utility must receive sufficient total revenue to ensure proper operation and maintenance (O&M), development and sustainability of the system, and preservation of the utility’s financial integrity. The total revenue requirements for most utilities are largely financed from revenues derived from selling water to their customers. (AWWA M-1 page 9)*

*The two generally accepted and practiced approaches to projecting total revenue requirements of a water utility are the cash-needs approach and the utility-basis approach. Each has a proper place in utility practice, and each, when properly used, can provide for sound utility financial strategies. (AWWA M-1 page 10)*

The initial steps in developing the Revenue Requirement, forecasting sales and O & M expenses are the same under both the *utility basis* (CPUC Model) and *cash-needs* basis (District Model); the primary differences are the requirement to pay taxes under the *utility basis* and in the way debt costs and the Capital Improvement Program (“CIP”) are funded. The *utility basis* approach funds debt costs and CIP through a return on rate base while the *cash-needs* approach funds these items through rates.<sup>10</sup>

<u>CPUC Model (Utility Basis)</u>	<u>District Model (Cash-needs Basis)</u>
Supply Costs	Supply Costs
O & M Expenses	O & M Expenses
Depreciation Expense	Debt Costs
Taxes	Capital Improvement Program
Return on Investment	

### Adequacy of Revenues

An important initial step in the Revenue Requirement Analysis is to determine if current rates are adequate to meet future revenue requirements or if a rate adjustment is necessary.

*“The overall adequacy of water revenues can be measured by comparing projected annual revenue requirements to be met from rates with projected revenues under existing or authorized rates.”(AWWA M-1 page 9)*

Valencia Water’s current rate structure consist of a monthly service charge that increases with meter size and a quantity charge. Though the quantity charge billed to single-family residential (“SFR”) customers is a tiered rate structure based on water budgets, the SFR quantity rates and the Non- Single Family Residential (“Non-SFR”) which includes, Multi-Family Residential (master metered apartment and condominium complexes), Commercial, Industrial quantity rate are based on the same single quantity rate (“SQR”).

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<sup>10</sup> AWWA M-1 at p 14 The utility-basis approach for determining revenue requirements consists of O&M expenses, taxes or transfer payments, depreciation expense, and a “fair” return on rate base investment. While the utility-basis approach is in some ways similar to the cash needs approach, where these two methods diverge is in how capital infrastructure is funded within the rates. The cash-needs approach uses debt-service and capital expenditures funded from rates. In contrast, the utility-basis approach uses depreciation expense and a return on rate base.

Valencia Water also serves several customers with recycled water. The recycled water quantity rate is set equal to 84% of the single quantity rate charged to SFR and Non-SFR customers. The monthly service charge billed to recycled water customers is the same as the monthly service charge billed to SFR and Non-SFR customers.

In addition, Valencia Water has several customers with private fire service connections. Private fire service connections are billed based on the diameter of the service pipe serving the property.

Valencia Water’s 2016 average<sup>11</sup> metered customers are 29,785. It also had 1,464 private fire service connections.

<b>Table 2 Average Metered Customers</b>			
Meter Size	SFR &		Total
	Non SFR	Recycled	
5/8X3/4	684		684
3/4	25,071		25,071
1	1,344		1,344
1-1/2	429		429
2	2,020	15	2,035
3	134		134
4	51		51
6	19	1	20
8	10		10
10	6	1	7
<b>TOTAL</b>	<b>29,768</b>	<b>17</b>	<b>29,785</b>

<b>Table 3 Average Private Fire Services</b>	
Service Size	Services
2	99
4	167
6	868
8	284
10	39
12	7
<b>Total</b>	<b>1,464</b>

### Customer Growth

As reflected above, in 2016, Valencia Water had 29,768 (average) General Metered Customers, customers using potable water, and 17 recycled water customers. Based on discussion with local

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<sup>11</sup> New customers are connected to the system throughout the year with some customers being added at the beginning of the year and other customers added at the end of the year. Because those customers who are added at the beginning of the year will use more water during the calendar year than those added at the end of the year, average customers are used to forecast the demand on the system.

developers Valencia Water is anticipating an average growth rate of approximately 1% over the next four years or an average of 235 new connections per year starting with approximately 150 in 2017 increasing to over 300 in 2020. Fire services are forecasted to increase at a rate of five new connections per year. The Tables 4 and 5 reflect forecasted connections by year.

Meter Size	2017	2018	2019	2020
5/8X3/4	659	659	659	659
3/4	25,219	25,392	25,565	25,815
1	1,365	1,373	1,381	1,395
1-1/2	430	433	435	443
2	2,041	2,053	2,062	2,092
3	140	142	144	150
4	51	51	51	53
6	20	20	20	21
8	9	9	9	10
10	7	7	7	7
<b>TOTAL</b>	<b>29,941</b>	<b>30,139</b>	<b>30,333</b>	<b>30,645</b>

Service Size	2017	2018	2019	2020
2	104	104	104	104
4	169	170	171	172
6	876	879	882	886
8	286	287	288	289
10	39	39	39	39
12	7	7	7	7
<b>Total</b>	<b>1,481</b>	<b>1,486</b>	<b>1,491</b>	<b>1,497</b>

#### Forecasted Service Charge Revenues at Current Rates

Each general metered customer is billed a monthly service charge based on the size of their meter and private fire services are billed a monthly service charge based on the diameter of the service pipe in inches. The Table 6 reflects the monthly service charge by meter size and the monthly private fire service charge by diameter of the service.

<b>Table 6 Current Monthly Service Charge and Private Fire Service Charge</b>		
Meter/Service Size	Meter Service Charge	Private Fire Service Charge
5/8 x 3/4	10.70	n/a
3/4	16.00	n/a
1	26.70	n/a
1-1/2	53.40	n/a
2	85.40	22.30
3	160.10	n/a
4	266.90	32.30
6	533.70	46.10
8	854.00	61.50
10	1,227.60	126.90
12	1,761.30	183.80
14	2,401.80	249.90

Based on forecasted growth and current rates, Valencia Water would collect \$9.4 million in service charge revenues in 2018, \$9.5 million in 2019 and \$9.6 million in 2020.

<b>Table 7 - Forecasted Annual Service Charge Revenues Generated by Current Rates</b>			
Customer Class	2018	2019	2020
General Metered Customers	\$8,499,130	\$8,547,206	\$8,668,098
Recycled Water Customers	\$41,632	\$43,681	\$45,731
Private Fire Connections	\$866,620	\$869,405	\$872,743
<b>Total</b>	<b>\$9,407,381</b>	<b>\$9,460,292</b>	<b>\$9,586,572</b>

**Customer Usage**

The amount of water used per customers varies by customer class. In general, residential customers tend to use less water than industrial or commercial customers.

**General Metered Customers**

Because of severe drought conditions in recent years and State mandated water usage reductions of 20% by 2020<sup>12</sup>, over the last five years, water usage in Valencia Water’s service area has dropped significantly. In 2013, Valencia Water’s customers used a high of 13 million units (one hundred cubic feet - “Ccf”) of water then reduced usage to a low of 9.4 million Ccf in 2015 even though Valencia Water experienced mild customer growth during this period.

During the recent drought, the State Water Resources Control Board mandated that Valencia Water’s customers reduce their consumption to a level equal to 80% of their 2013 usage. With assistance from Valencia Water’s conservation department and conservation rebates for fixture replacements and turf

<sup>12</sup> Senate Bill X7-7 2009 – The Water Conservation Act of 2009

removal, as well as educational assistance on water use efficiency, Valencia Water’s customers were able to exceed that goal and conserved between 23% and 27% per year.

Now that the drought is over, at least temporarily, Valencia Water’s customer usage has seen a slight rebound but nowhere close to where it was pre-drought. Valencia Water is forecasting that its existing customers will increase usage slightly but not above the mandated 20% imposed by the State. In addition to a slight rebound in usage, Valencia Water is forecasting an increase in total usage due to customer growth.

Customer Class	Usage
Residential	185.9
Multi-Family Residential	1,509.0
Magic Mountain	311,567.5
Industrial	1,370.2
Public Authorities	3,754.5
Dedicated Irrigation	2,335.8
Meter Construction	4,798.8

Forecasted Usage is derived by multiplying average customers by class by average usage by class.

Customer Class	2018	2019	2020
General Metered Customers	10,737,643	10,800,188	10,942,044
Recycled Water Customers	266,126	267,064	268,940
Total	11,003,769	11,067,252	11,210,984

#### Forecasted Usage Revenues at Current Rates

Currently Valencia Water charges \$1.635 per Ccf for potable water and \$1.373 per Ccf of Recycled Water.

Forecasted usage revenues at current rates are derived by multiplying current rates by the average usage by customer class by the forecasted customers by customer class. At current rates, Valencia Water would collect \$17.9 million in usage revenues in 2018, \$18.0 million in 2019 and \$18.3 million in 2020.

Customer Class	2018	2019	2020
General Metered Customers	\$17,556,046	\$17,658,308	\$17,890,241
Recycled Water Customers	\$365,497	\$366,786	\$369,362
Private Fire Connections	\$0	\$0	\$0
Total	\$17,921,544	\$18,025,094	\$18,259,603

## Miscellaneous Fees

### Returned payment fee

Valencia Water proposes to increase its returned payment fee for any checks or electronic payments which are not honored by the customer's financial institution. The increased fee reflects the cost of the actual bank fees charged to Valencia Water, as well as the labor cost to process returned payments. The proposed fee is comparable with other water utilities, and reflects the true cost of service. Valencia Water proposes phase in the increase over the 3-year rate cycle, to minimize the immediate impact to customers. Currently Valencia Water charges a \$15 returned payment fee for each transaction that is not honored by the customer's financial institution. Valencia Water proposes to increase these fees to \$30.00 per transaction in 2018, \$33.00 in 2019 and \$35.00 per transaction in 2020.

### Termination Notice fee

Valencia Water proposes to implement a termination notice fee of \$25.00 to all customers for whom a termination notice is generated due to non-payment of their water bill. Customers who have not paid their water bill by 21 days after the due date and have a past due balance of \$35.00 or more are subject to termination of their water service. A termination notice is placed at the customer's premises 48-hours prior to their water service being terminated. The \$25.00 fee reflects the cost of generating and placing the notice at the customer's premises, and also acts as a deterrent for customers paying their water bill more than 1 full billing cycle past the due date. Currently, the cost of generating and placing termination notices is borne by all customers in general rates. Implementation of the termination notice fee results in only those specific customers paying for the cost of generating and placing these notices.

### Late Fee

Valencia Water proposes to implement a late fee of \$10.00 to all customers whose water bill payments have not been received by the time their next regular bill is generated. The late fee will be added to the customer's balance due on their next regular water bill. The late fee acts as a deterrent for customers paying their bills after the designated due date as shown on their monthly billing statements.

Currently Valencia water collects \$19,000 in miscellaneous fees. The miscellaneous fees described above are forecasted to generate additional revenues of approximately \$382,500 in 2018. These fees will be assessed to those customers who are responsible for generating the costs related to these fees and will offset or reduce the amount of revenues that will need to be collected through water rates.

<b>Table 11 - Forecasted Increase in Annual Miscellaneous Income</b>			
	2018	2019	2020
Additional Miscellaneous Income	\$382,565	\$383,678	\$384,420

Table 12 reflects total Operating Revenues, including Miscellaneous Service Revenues "at Current Rates" and do not include the forecasted increase in Miscellaneous Revenues. The impact of the increased fees on Operating Revenues "at Proposed Rates" is addressed later in this report.

<b>Table 12 - Forecasted Annual Revenues at Current Rates</b>			
	2018	2019	2020
Operating Revenues	27,347,944	27,504,406	27,865,195



### Supply Costs

Supply costs include purchased water costs and pumping cost. Pumping costs include both the cost to pump groundwater from the alluvium and Saugus aquifers as well as the costs to boost water through the system. (Chemicals are treated as O & M costs).

Forecasted Purchased Water costs are derived by multiplying the forecasted quantity of water purchased by the unit cost of the water purchased.

Forecasted Pumping costs are derived by multiplying the amount of water pumped by the kWh needed to pump a unit of water by the cost per kWh.

### Pass-through Surcharge

It is recommended that, starting in 2018, Valencia Water create a pass-through surcharge to recover incremental increases in purchased water costs and power costs that are not covered in rates.<sup>13</sup>

### Production Forecast

The first step in determining supply costs is forecasting the total demand existing and future customers will put on the system in 2018 through 2020, then adjusting for water used in operations and water loss.<sup>14</sup> The forecasted customer demand is derived by multiplying the average usage per customer class by the forecasted customer count by customer class. The total demand is derived by adding the forecasted amount for water used in operations and water loss to the forecasted customer demand.

	2018	2019	2020
Potable Water Sales in Acre Feet	24,650	24,794	25,119
Potable Water Production in Acre Feet	26,460	26,614	26,964
Recycled Water	611	613	617

### Supply Mix

Valencia Water's goal is to purchase 50% of its production from its wholesaler, the Castaic Lake Water Agency and pump the remaining 50% from the alluvium and Saugus Aquifer<sup>15</sup>.

	2018	2019	2020
Purchased Water	13,230	13,307	13,482
Pumped Water	13,230	13,307	13,482
Recycled Water	611	613	617

<sup>13</sup> Neighboring water purveyors who also purchase water from the Castaic Lake Water Agency currently have or are planning to implement a similar Pass-through Surcharge.

<sup>14</sup> Valencia Water's water used in operations and water loss equates to 6.84% of water sales.

<sup>15</sup> Though, in some years, Valencia Water may not be able to reach its goal due to local basin conditions or the availability of State Water Project water, Valencia Water believes it can meet an average mix of 50% over the forecasted period.

### Purchased Water Costs

In July of 2013, Castaic Lake Water Agency changed its wholesale water rate structure to include both a fixed charge and a quantity charge. One of the stated purposes for the fixed charge was “to provide a rate design framework consistent with the cost of service guidelines used in the industry that adequately and fairly distributes the full cost of service to clients of the Agency based on the demand they place on the Agency’s system”<sup>16</sup>. The fixed charge represents Valencia Water’s proportionate share of Castaic Lake Water Agency’s fixed costs based on Valencia Water’s average total imported water consumption in the previous ten years.

Forecasted Purchased Water Costs in this study are based on current wholesale rates. Incremental increases will be recovered through the pass-through surcharge. The 2017 wholesale rates currently being charged to Valencia Water are an annual fixed charge \$5,336,219 and a variable rate of \$218.18 per acre-foot purchased. (See additional discussion below).

	2018	2019	2020
Acre Feet	13,230	13,307	13,482
Quantity Charge Per Acre Foot	<u>\$218.18</u>	<u>\$218.18</u>	<u>\$218.18</u>
Quantity Charge	\$2,886,534	\$2,903,347	\$2,941,481
Annual Fixed Charge	\$5,336,219	\$5,336,219	\$5,336,219
Purchased Water Expense	\$8,222,753	\$8,239,566	\$8,277,700

### Pumping Charges

Valencia Water’s pumping costs include the cost to pump groundwater, pump purchased water into the system and to pump all water throughout the system. Pumping costs are forecasted by determining the kWh needed to pump an acre-foot of water and multiplying it by the average cost per kWh.

The average kWh needed to pump an acre-foot of water can fluctuate based on the groundwater levels in the aquifers and the amount of groundwater pumped versus the amount of water purchased. For forecasting purposes, Valencia Water used the 5-year average kWh/AF over the previous five years.

Based on recent discussions with Southern California Edison’s staff, Valencia Water forecasted an increase of 3% in the cost of a kWh annually. Any additional increase (or decrease) will be recovered (or refunded) through the pass-through surcharge.

	2018	2019	2020
Total Water Pumped, Acre Feet	26,460	26,614	26,964
Kwh/AF	580	580	580
Pumping Power, Kwh	15,356,859	15,446,308	15,649,191
Purchased Electricity Cost, \$/Kwh	\$0.1339	\$0.1379	\$0.1420
Purchased Electricity Expense	\$2,056,283	\$2,130,046	\$2,222,185

<sup>16</sup> CLWA Resolution No. 3096 Exhibit A – Updated Rate Study page page 4

## Recycled Water

Except for the meter and related equipment Castaic Lake Water Agency, owns and operates the recycled water system within Valencia Water’s service area. Castaic Lake Water Agency bills Valencia Water for all recycled water served in its service area at a rate equal to 80% of Valencia Water’s current Non-SFR single quantity rate.

Forecasted recycled water costs are derived by multiplying the forecasted recycled water purchases by the recycled water rate.

	2018	2019	2020
Purchased Recycled Water, Acre Feet	610.94	613.09	617.40
Recycled Water Rate	\$445	\$445	\$445
Recycled Purchased Water Expense	\$271,661	\$272,617	\$274,533

## Pass-through Surcharge Calculations

As discussed above, it is recommended that, starting in 2018, Valencia Water create a pass-through surcharge to recover incremental increases in purchased water costs and power costs that are not covered in rates. The Castaic Lake Water Agency passed resolution No. 3096 increasing its fixed charge per acre-foot from \$400.74 in 2017 to \$436.07<sup>17</sup> effective January 1, 2018 and increasing its variable charge from \$218 per acre-foot to \$223 effective January 1, 2018. This results in a pass-through surcharge of \$0.050 per Ccf in 2018.

	Rate (\$/AF)	Acre Feet	Total Costs
<b>Fixed Charge</b>			
2018 Rate (\$/AF)	\$436.07	13,230.06	\$ 5,769,230
2017 Rate (\$/AF)	\$400.74	13,230.06	\$ 5,301,813
Incremental Increase (\$/AF)			\$ 406,418
<b>Variable Costs</b>			
2018 Rate (\$/AF)	\$223	13,230.06	\$ 2,952,684
2017 Rate (\$/AF)	\$218	13,230.06	\$ 2,886,534
Incremental Increase (\$/AF)			\$ 66,150
Total Incremental Increase (\$/AF)			\$ 533,568
Forecasted sales (Ccf)			10,737,643
Surcharge per Ccf			\$0.050

The 2019 and 2020 purchased water rates will not be known until CLWA Board acts in 2018 and 2019 respectively. Based on the proposed 2019 and 2020 rates in Exhibit A – Updated Rate Study attached to CLWA resolution No. 3096 it is estimated the 2019 Pass-through surcharge will be \$0.123 and \$0.202 in 2020.

<sup>17</sup> CLWA Resolution No. 3096 Exhibit A – Updated Rate Study page 8

<b>Table 18(b) - 2019 Pass-through Surcharge Calculation - Potable Water</b>			
	Rate (\$/AF)	Acre Feet	Total Costs
<u>Fixed Charge</u>			
2019 Rate (\$/AF)	\$484.54	13,307.12	\$ 6,447,830
2017 Rate (\$/AF)	\$400.74	13,307.12	\$ 5,332,694
Incremental Increase (\$/AF)			\$ 1,115,136
<u>Variable Costs</u>			
2019 Rate (\$/AF)	\$234.38	13,307.12	\$ 3,118,922
2017 Rate (\$/AF)	\$218.18	13,307.12	\$ 2,903,347
Incremental Increase (\$/AF)			\$ 215,575
Total Incremental Increase (\$/AF)			\$ 1,330,712
Forecasted sales (Ccf)			10,800,188
Surcharge per Ccf			\$0.123

<b>Table 18(c) - 2020 Pass-through Surcharge Calculation - Potable Water</b>			
	Rate (\$/AF)	Acre Feet	Total Costs
<u>Fixed Charge</u>			
2019 Rate (\$/AF)	\$538.00	13,481.90	\$ 7,253,263
2017 Rate (\$/AF)	\$400.74	13,481.90	\$ 5,402,737
Incremental Increase (\$/AF)			\$ 1,850,526
<u>Variable Costs</u>			
2019 Rate (\$/AF)	\$244.46	13,481.90	\$ 3,295,786
2017 Rate (\$/AF)	\$218.18	13,481.90	\$ 2,941,481
Incremental Increase (\$/AF)			\$ 354,304
Total Incremental Increase (\$/AF)			\$ 2,204,830
Forecasted sales (Ccf)			10,942,044
Surcharge per Ccf			\$0.202

Because the 2019 and 2020 wholesale water rates are not yet known, the 2019 and 2020 Pass-through surcharges are not reflected in the rate comparisons later in this report.

### Operation and Maintenance and General and Administrative Expense

The AWWA M-1 refers to a pro forma test year approach in developing the Revenue Requirement. A pro forma test year is a combination of the historical and projected test year. A pro forma test period begins with historical data and costs and then adjusts only for those “known and measurable” costs or changes.<sup>18</sup> This same approach is prescribed by the CPUC; forecasted expenses start with the average of the most recent five years of historical data adjusted for inflation then allows for known and measurable adjustments. This is the approach used in this study.

<sup>18</sup> AWWA M-1 at p 11-12

## Labor Costs

The Labor Cost forecast is an expense that is appropriately forecasted based “on known and measurable changes”. The labor forecast is based on existing staffing levels.<sup>19</sup> The 2018 labor cost is based on the adopted 2018 salary schedule, but assumes cost savings starting in mid-2018 for two full-time management positions which will be eliminated due to the economies of scale resulting from SB 634 and the proposed new consolidated water agency. The 2019 and 2020 labor forecasts were escalated by 3%.

Next, labor costs were adjusted for those portions of salaries and related expenses that are capitalized. The portion of salaries and wages of employees who devote (all or a portion of) their time to a capital project are charged to the related capital project. Such salaries, wages, and accompanying overhead (e.g., related payroll taxes, workers’ compensation, materials and supplies, and transportation expenses) are capitalized as a part of the cost of the project. The amounts capitalized, are not included as O & M expenses<sup>20</sup>.

## Other Operations and Maintenance and Administrative and General

Other Operations and Maintenance Expense, excluding Supply and Labor Costs, includes Maintenance of Pumping Equipment, Water Treatment Expense, Transmission and Distribution Expenses, Customer Account Expenses and Administrative and General Expenses.<sup>21</sup> Administrative and General Expenses include Customer Billing, Insurance, Outside Services and General Office expenses.

As discussed above, forecasted expenses start with the average five-year historical data adjusted for inflation, and then are adjusted for known and measurable adjustments. Except as discussed below, all Other Operations and Maintenance Expense are forecasted by escalating the inflation adjusted historical five-year average by 3% per year over the forecasted period.

In order to reflect current operations and water quality requirements, for the following expenses, the actual 2016 recorded costs are more appropriate for forecasting future expenses than the inflation adjusted five year average: Operations Engineering Consulting, Laboratory Fees and Supplies (Water Quality Testing) and Computer Software Expenses.

Customer billing, primarily postage and maintenance costs on the customer information system, which directly correlate to the number of customer accounts, were forecast based on customer growth as well as a 3% inflation factor.

Based on the assumption that Senate Bill 634 will become law, starting in the second quarter of 2018, most insurance costs were forecast assuming Valencia Water would purchase its insurance through CalPers or the California Joint Powers Insurance Authority, which have significantly lower premiums than Valencia Water pays currently.

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<sup>19</sup> Based on the likelihood that Senate Bill 634 will become law, Valencia Water did not forecast any additional staff. It is anticipated that future needs in staffing will be offset by realized economies of scale resulting from being incorporated into the new Santa Clarita Valley Water District.

<sup>20</sup> AWWA M-1 at p 29

<sup>21</sup> Because it is anticipated that Senate Bill 634 will become law, Deprecation, Taxes and Return on Rate Base are not included in the forecast.

<b>Table 19 - Forecasted Operating Expenses</b>			
	2018	2019	2020
Net Payroll Expense	3,112,650	3,051,278	3,142,817
Total Source of Supply	10,785,697	10,884,278	11,023,730
Total Pumping Expense	220,000	226,600	233,398
Total Water Treatment Expense	462,632	473,853	448,200
Total Transmission & Distribution Expense	1,216,147	1,252,631	1,290,210
Total Customer Account Expenses	457,682	473,830	491,216
Total Admin and General Expenses	4,292,667	4,314,578	4,475,660
Total Clearing Accounts	328,305	332,086	342,049
<b>Total Operating Expenses</b>	<b>20,875,780</b>	<b>21,009,135</b>	<b>21,447,280</b>

**Other Cash Needs**

The *cash-needs*, District approach includes debt-service<sup>22</sup> funding of specified reserves and capital expenditures funded from rates in the Revenue Requirement.

**Debt Service**

Forecasted debt service includes outstanding debt and refunds of advances for construction acquired in prior years.<sup>23</sup>

<b>Table 20 - Debt Service Costs</b>			
	2018	2019	2020
Total Debt Service	6,524,580	6,523,438	6,522,097

**Capital Improvement Program**

Under the *cash-needs* or District approach Valencia Water’s CIP will be funded from annual revenues (sometimes referred to as pay-as-you-go, or PAYGO, capital funding<sup>24</sup>). The CIP forecast represents the needed Capital Improvements that will be funded by Valencia Water during the rate cycle. Capital Improvements needed for new development are funded by the developer through contributions and are not included in Valencia Water’s CIP.

<sup>22</sup> AWWA M-1 at p 13 - The debt-service component of the *cash-needs* revenue requirement includes principal and interest payments associated with bonds, loans, and other debt instruments. It may also include debt-service reserve requirements as established by the bond indenture authorizing the debt.

<sup>23</sup> If VWC choses to finance some or all of its future CIP, these numbers would need to be adjusted.

<sup>24</sup> AWWA M-1 p. 39

	2018	2019	2020
Wells	15,000	75,000	215,000
CLWA Turnouts/Boosters	290,000	310,000	270,000
Tanks	15,000	0	1,013,000
PRS/Reg Stations	140,000	115,000	75,000
Meters	607,000	607,000	607,000
SCADA / Technology Upgrades	315,000	175,000	190,000
Projects - Other	560,000	725,000	730,000
Capital Projects	1,942,000	2,007,000	3,100,000

### Net Revenue Requirement

As discussed above, Government Owned Utilities operate under a “cash-needs”<sup>25</sup> approach and fund their capital projects through rates, pay as you go<sup>26</sup> and/or debt. The costs of their capital program are included in their revenue requirement.

### Reserves

As a CPUC regulated utility, Valencia Water was not allowed to build reserves but instead relied on its shareholders to fund any unexpected needs not covered in rates.

*Other reserves are often required to provide for operating working capital, emergency repairs and replacements, as well as for routine replacements and extensions. (AWWA M-1 page 13)*

*Establishing and maintaining adequate reserves is an important financial management practice of a water utility. Reserves typically include operating reserves, capital/construction/depreciation reserves, and bond reserves. Reserves, particularly operating reserves, have traditionally been maintained to address cash-flow needs and the lag between expenses incurred and revenues received.*

*In recent years, utilities have been challenged financially by two emerging trends. First, utilities have experienced declining per capita use. In addition, many water utilities have been faced with water supply shortages and, in some cases, severe droughts, leading to voluntary or mandatory reductions in use. Both of these trends have led to reduced sales and revenues that, in turn, have prompted utilities’ desire for greater revenue stability from their rates.*

*Reserve funds can address short-term fluctuations in revenue levels until such time that rates may be adjusted to address utilities’ reduced sales volumes, if implemented correctly. However, in using this approach, utilities need to establish and maintain reserve levels above those established for “normal” cash-flow fluctuations. This additional amount of reserves should be established in relation to the potential volatility of rate revenues of the particular utility. Much like a water reservoir, if these reserve funds are drawn down in a particular rate-setting period, their replenishment should be funded in a following rate-setting period. Unlike a water reservoir, the refilling of financial reserves requires commitment to fiscal stability on the part of utility managers and governing boards. (AWWA M-1 page 90)*

<sup>25</sup> Ibid at p. 12

<sup>26</sup> Ibid at p. 39

Valencia Water, along with all other water utilities in California, has experienced declining revenues due to the recent drought conditions experienced throughout the state and the related State mandated reductions in usage per capita.

It is recommended that Valencia Water establish four reserve funds starting in 2018, Operating Reserve Fund, Rate Stabilization Fund, Capital Reserve Fund and Emergency Reserve Fund and start to fund them over a ten-year period.

The Operating Reserve Fund would be set at 25% of Operating Costs (or 3 months of budgeted Operating Expenses). The Operating Reserve is used primarily to meet ongoing cash flow requirements.

The Rate Stabilization Reserve Fund would be set at 10% of revenues. The purpose of the Rate Stabilization Reserve is to offset revenue reductions resulting from reduced retail water sales during periods when consumption is 10% or more below average consumption.

The Capital Reserve Fund would be set at the average annual Capital Budget over the rate cycle. The Capital Reserve is to cover any unexpected and unplanned infrastructure repairs and replacements not included in the budget.

The Emergency Reserve fund would be set at \$1 million. The Emergency Reserve is to provide funds for the District in the case of unforeseen catastrophic events.

<b>Table 22- Reserve Funds</b>				
Reserve Funds	Targets	Annual Funding Levels		
		2018	2019	2020
Operating Reserve – 25% (or 3 months)	3,095,342	309,534	312,424	322,376
Rate Stabilization Reserve - 10% of revenues	2,988,454	298,845	300,855	316,399
Capital Reserve - Average Annual Capital Budget	2,349,667	234,967	234,967	234,967
Emergency Reserve (\$1 million)	1,000,000	100,000	100,000	100,000
<b>Total Reserves</b>	<b>9,433,463</b>	<b>943,346</b>	<b>948,246</b>	<b>973,742</b>

Funding Reserves would increase the Revenue Requirement by approximately \$1 million per year.

### Cost Allocation

The revenue requirement developed above was based on the on the assumption that Senate Bill 634 will be signed into law and Valencia Water will be incorporated into the new Santa Clarita Valley Water District. The Revenue Requirement is based on the Cash-Flow basis used for Government Agencies as discussed above. The following tables are based on the Revenue Requirement developed above.

### Allocating Revenue Requirements to Cost Components

*The total annual cost to provide water service to customers is the utility’s annual revenue requirement, as discussed in chapters II.1 through II.6 of this manual. One of the key financial objectives for a utility is to maintain a revenue stream from its general water service rate structure, along with other miscellaneous operating revenues and non-operating income that meet the total annual cost of service. Another basic tenet followed in the development of the general water service rate structure is*



that it recovers the cost of providing service to the various classes of customers of the utility in an equitable manner. (AWWA M-1 page 59)

*The cost-of-service process includes the following steps: p 59*

- 1. Identify annual revenue requirements by function or activity (including source of supply, pumping, treatment, etc.).*
- 2. Allocate these functional costs to appropriate cost components (including those related to annual usage, peak demands, customer meters and bills, and direct fire protection).*
- 3. Develop units of service by customer class for each cost component.*
- 4. Develop unit costs of service by dividing the total costs for each cost component by the respective total system units of service.*
- 5. Distribute costs to customer classes based on the unit costs of service and each class's units of service for each cost component. (AWWA M-1 page 59)*

### Allocate functional costs to appropriate cost components

AWWA M-1 proposes two methods to allocate costs, *the base-extra capacity method and the commodity –demand method.*

The *base-extra capacity method* identifies the minimum unit volume cost of service that would exist only if a perfect load factor or constant rate of use could be achieved. These costs are allocated to all classes of customers based on the customers' equivalent meter size connected to the system. The *base-extra capacity method* then identifies additional system capacity needed to meet maximum day and maximum hour peak demands and then determines who is the cause of or benefits from the extra capacity and allocates the additional costs proportionately. These costs are allocated to all classes of customers based on water usage/demand put on the system.

The *commodity - demand method* costs of service are separated into commodity costs and demand related costs. Commodity costs are those costs that tend to vary with the quantity of water produced, such as purchased water costs and chemicals, and demand costs associated with providing facilities to meet the peak rates of use, or demands, placed on the system by the customers. They include capital-related costs on plant designed to meet peak requirements, plus the associated O&M expenses.

Both methodologies also break out customer costs, and direct fire protection costs.

After discussing the design and operation of the system with Valencia Water's management as well as the available billing and usage data, it was determined the *base-extra capacity method* was the best method to use for this study. The guidelines presented on pages 63 through 67 of the AWWA M-1 and highlighted below were used to complete this cost of service study.

### *Base-Extra Capacity Method*

*Using the base-extra capacity method, costs are usually separated into four primary cost components: base costs, extra capacity costs, customer costs, and direct fire protection costs. In detailed rate studies, some of these elements may be broken down further into two or more subcomponents. (AWWA M-1 page 62)*

*Base costs are expenses that tend to vary with the total quantity of water used plus those O&M expenses and capital costs associated with service to customers under average load conditions, without the elements of cost incurred to meet water-use variations and resulting peaks in demand. Base costs include a portion of O&M expenses of supply, treatment, pumping, and distribution facilities. Base costs also include capital costs related to water plant investment associated with serving customers to the extent required for a constant, or average, annual rate of use.*

*Extra capacity costs are expenses associated with meeting peak-demand rate-of-use requirements in excess of average (base) use and include O&M expenses and capital costs for system capacity beyond that required for average rate of use. These costs may be subdivided into costs necessary to meet maximum-day extra demand, maximum-hour demand in excess of maximum-day demand, or other extra demand criteria (such as the maximum five-day demand) that may be appropriate for a particular utility.*

*Customer costs comprise those expenses associated with serving customers, irrespective of the amount or rate of water use. They include, but are not limited to, meter reading, billing, customer accounting, customer service, and collecting expense, as well as maintenance and capital costs related to meters and services. In detailed studies, the costs for meter reading and billing and for customer accounting and collecting may be considered one subcomponent; maintenance and capital costs related to customer meters and services may be considered another subcomponent.*

*Direct fire protection costs are those expenses that apply solely to the fire protection function. Usually, such costs are simply those directly related to public fire hydrants and related branch mains and valves. Private fire protection direct costs may also be included in this cost category but accounted for separately from the direct public fire costs. It should be noted that the costs allocated to the direct fire protection cost component are usually only a small part of the total cost of fire protection. As more fully described and illustrated in chapters III.2 and IV.8, a significant portion of extra capacity costs can be allocated to fire protection in distributing costs to customer classes.  
(AWWA M-1 page 62)*

In general, costs were allocated as follows:

Customer Service, Billing, Collections and Records - These accounts include all costs necessary to bill customers and respond to customer inquiries through Valencia Water's Customer Service Department. All classes of customers receive a bill and contact Valencia Water's customer service department with inquiries about their bill or service. As discussed below, "Customer Costs" or "Customer Meters & Services Costs" are allocated by equivalent meter size and become part of the basis for the monthly service charge.

Administrative costs including salaries, insurance costs, outside services and office supplies do not vary by the amount of water used or the demand put on the system. These costs are allocated equally between Base Costs and Customer Costs.

Supply Costs are accounted for separately.

The balance of the costs are related to operating and maintaining the system. These costs are allocated based on the peaking factors discussed below.

Direct Fire – All customers receive fire protection from the system (when needed) via a fire hydrant located in close proximity to their property. Some customers, because of building codes or local fire code requirements, are required to install on-site fire protection. These services are provided through a separate connection to the property. A proportionate share of the transmission and distribution costs necessary to provide fire flow are allocated to these accounts.

Debt services and capital expenditures, which are included in the revenue requirement but are not O & M expenses, are allocated based on the capital investment needed to support each component's Base, Maximum Day and Maximum Hour. (See Table 24 below.)

The formulas used for allocating costs between Base and Maximum Day are:

$$\text{Base} = \frac{\text{Average Day Demand (AF/Day)}}{\text{Maximum Day Demand (AF/Day)}}$$

$$\text{Maximum Day} = \frac{\text{Maximum Day Demand} - \text{Average Demand (AF/Day)}}{\text{Maximum Day Demand (AF/Day)}}$$

Formulas used for allocations of costs between Base, Maximum Day and Maximum Hour

$$\text{Base} = \frac{\text{Average Day Demand (AF/Day)}}{\text{Maximum Hour Demand (AF/Day)}}$$

$$\text{Maximum Day} = \frac{\text{Maximum Day Demand (AF/Day)}}{\text{Maximum Hour Demand (AF/Day)}}$$

$$\text{Maximum Hour} = \frac{\text{Maximum Hour Demand} - \text{Maximum Day Demand (AF/Day)}}{\text{Maximum Hour Demand (AF/Day)}}$$

<b>Table 23 - Base-extra Capacity Method Peaking Factors</b>				
	Average Day Demand AF (Annual production/days per year)	Max Day Demand (AF)	Max Hour (PHD) (MDD/24 x 1.78) (AF)	Max Hour AF per Day
	(A)	(B)	( C)	(D)
2016	66.20	118.10	8.76	210.22
Peaking Factors				
<u>Allocated between Base and Maximum Day Demand*</u>				
	Base	Maximum Day		
	(A)/(B)	(B-A)/(B)		
	56%	44%		
<u>Allocated between Base, Maximum Day and Maximum Hour Demand*</u>				
	Base	Maximum Day	Maximum Hour	
	(A)/(D)	(B-A)/(D)	(D-B)/(D)	
	31%	25%	44%	

\*Fire Protection Services represent 5% of the total services. Cost that were allocated to Fire Protection were adjusted accordingly.

<b>Table 24 – Allocation of Functional Costs to Appropriate Cost Components</b>							
	Total	Base	Extra Capacity		Supply Costs	Customer Costs	Direct Fire Protection Service
			Maximum Day	Maximum Hour			
Total Labor Expense	3,112,650	930,886	523,840	921,950		735,973	0
Source of Supply	10,550,697	0	0	0	10,550,697	0	0
Total Operations Expenses	1,405,768	292,846	236,180	415,670		436,176	24,896
Total Maintenance Expenses	1,653,210	525,564	367,720	647,180		69,606	43,140
Total A & G Expenses	4,153,455	2,076,727	0	0		2,076,727	0
Total Operating Expenses	20,875,780	3,826,023	1,127,740	1,984,800	10,550,697	3,318,482	68,036
Debt Service	6,524,580	2,373,520	585,180	1,886,260		1,449,690	229,930
Capital Projects	1,942,000	706,460	174,180	561,430		431,490	68,440
Cash Used to Fund Reserves	943,770	343,320	84,650	272,840	0	209,700	33,260
Less Miscellaneous Revenues	(401,585)	(96,124)	(26,145)	(62,391)	(139,899)	(71,727)	(5,299)
Net Water Sales Revenue Requirement	29,884,544	7,153,198	1,945,605	4,642,939	10,410,798	5,337,635	394,366

<b>Table 25 Allocation of Plant Investment by Component</b>						
Rate Base Component	Total	Base	Max Day	Peak Hour	Customers	Direct Fire
Total Non-Depreciable Plant	100%	58%	6%	19%	15%	2%
DEPRECIABLE PLANT						
Source of Supply	100%	95%	0%	0%	0%	5%
Pumping	100%	53%	42%	0%	0%	5%
Water Treatment	100%	53%	42%	0%	0%	5%
Transmission and Distribution	100%	25%	13%	38%	20%	4%
General Plant	100%	58%	6%	19%	15%	2%
Total Depreciable Plant	100%	34%	14%	34%	15%	4%
Construction Work in Progress	100%	30%	24%	0%	0%	5%
Materials and Supplies	100%	58%	6%	19%	15%	2%
Less						
Contributions and Advances	100%	30%	24%	42%	0%	5%
Utility Funded Rate Base	100%	36%	9%	29%	22%	4%

Develop units of service by customer class for each cost component.

Historically Valencia Water has divided its General Metered customers into three classes 1) Single Family Residential (“SFR”), 2) Non- Single Family Residential (“Non-SFR”) which includes, Multi-Family Residential (master metered apartment and condominium complexes), Commercial, Industrial and 3) Irrigation and Recycled Water. With the exception of Recycled Water customers, all of Valencia Water Company’s customers receive potable water through common interconnected distribution lines and treatments facilities.

### Base Units

Base units are the annual water usage in Ccf for each customer class and the average Ccf per day, (annual usage divided 365 days).

Customer Class	Base Units (Ccf)	
	Annual Use	Average Usage
Residential	5,044,067	13,819
Non-residential	2,626,736	7,197
Irrigation	3,066,840	8,402
Sub-total	10,737,643	29,418
Recycled (84% of Non-Residential)	223,546	612
Total Sales	10,961,189	30,031

### Maximum Day Units - Extra Capacity

The Maximum-day peaking factors are applied to average-day rates of flow to develop total maximum-day capacity by class. The Maximum-day extra capacity is defined as the difference between total maximum-day capacity and the average day rate of use. (Fire protection service is considered to require negligible flow on an average annual basis)<sup>27</sup>.

Customer Class	Base Units		Maximum-Day Units		
	Annual Use, Ccf	Average Usage, Ccf	Peaking Factor, %	Total Capacity, Ccf	Extra Capacity Ccf
Residential	5,044,067	13,819	1.61	22,205	8,385
Non-residential	2,626,736	7,197	1.62	11,693	4,497
Irrigation	3,066,840	8,402	2.11	17,751	9,348
Total	10,737,643	29,418		51,648	22,230

### Maximum Hour Extra - Capacity Units

Maximum-hour extra peaking factors for each customer class are applied to average day rates of flow, the maximum-hour extra capacity units are defined as the difference in the total maximum-hour capacity and the maximum-day capacity.<sup>28</sup>

<sup>27</sup> AWWA M-1 at p 77

<sup>28</sup> AWWA M-1 at p 77-78

Customer Class	Base Units		Maximum-Hour Units		
	Annual Use, Ccf	Average Usage, Ccf	Peaking Factor, %	Total Capacity, Ccf	Extra Capacity Ccf
Residential	5,044,067	13,819	2.52	34,889	12,685
Non-residential	2,626,736	7,197	2.55	18,373	6,680
Irrigation	3,066,840	8,402	3.32	27,891	10,140
<b>Total</b>	<b>10,737,643</b>	<b>29,418</b>		<b>81,153</b>	<b>29,505</b>

Equivalent Meters and Services

Historically Valencia Water has derived its equivalent meters and services by applying a meter ratio proportionate to the upper limits of normal test flows,<sup>29</sup> - equivalent meter factor ratios, to the number of meters of each size by class.

Meter Size	Number of Meters	Meter Ratio	Equivalent Meters
5/8 x 3/4	659	1.0	659.0
3/4	25,392	1.5	38,088.0
1	1,373	2.5	3,432.5
1-1/2	433	5.0	2,165.0
2	2,053	8.0	16,424.0
3	142	15.0	2,130.0
4	51	25.0	1,275.0
6	20	50.0	1,000.0
8	9	80.0	720.0
10	7	115.0	805.0
<b>Total</b>	<b>30,139</b>		<b>66,698.5</b>

Fire services are allocated based on the total inches of diameter of all private fire services.

<sup>29</sup> CPUC Standard Practice U-7-W page 5.

Service Size	Number of Connections	Total Inches of Diameter
2	104	208
4	170	680
6	879	5,274
8	287	2,296
10	39	390
12	7	84
Total Monthly		8,932
Total Annual		107,184

Develop unit costs of service by dividing the total costs for each cost component by the respective total system units of service.

**UNIT COSTS**

*Unit costs of service are based on total costs previously allocated to each of the cost components and divided by the total number of applicable units of service for the test year. Unit costs are determined simply by dividing the test-year O&M and capital cost components by the respective total system units of service for the test year. (AWWA M-1 page 78)*

The Table 31 shows the allocation of the Revenue Requirement components - O&M Expenses, CIP, Reserve Funds net on of Miscellaneous Income – between Base, Maximum Day, Maximum Hour, Supply Costs, Customer Meters and Services, and Direct Fire Protection Water based on the units of service discussed above.

Unit Cost Component	Total	Base	Extra Capacity		Supply Costs	Customer Meters & Services	Direct Fire Protection Service
			Maximum Day	Maximum Hour			
Units of Service		Equiv Meters	Ccf	Ccf	Ccf	Equiv Meters	Cost per Inch
		66,701	22,230	29,505	10,961,189	66,701	107,184
O&M Expense	20,875,780	3,826,023	1,127,740	1,984,800	10,550,697	3,318,482	68,036
		57.36	50.73	67.27	0.96	49.75	0.63
Total Debt Service	6,524,580	2,373,520	585,180	1,886,260	0	1,449,690	229,930
		35.58	26.32	63.93	-	21.73	2.15
CIP Expenditures	1,942,000	706,460	174,180	561,430	0	431,490	68,440
		10.59	7.84	19.03	-	6.47	0.64
Cash Used to Fund Reserves	943,770	343,320	84,650	272,840	0	209,700	33,260
		5.15	3.81	9.25	-	3.14	0.31
Miscellaneous Service Revenues	(401,585)	(96,124)	(26,145)	(62,391)	(139,899)	(71,727)	(5,299)
		(1.44)	(1.18)	(2.11)	(0.01)	(1.08)	(0.05)
Net Revenue Requirement	29,884,544	7,153,198	1,945,605	4,642,939	10,410,798	5,337,635	394,366



Distribute costs to customer classes based on the unit costs of service and each class's units of service for each cost component

The coincident peaking factors used to allocate costs between Base, Maximum Day and Maximum hours were developed as described in Appendix A - Development of Peaking Factors by Customer Class of AWWA M-1.

*The estimation procedure involves imputation of class peaking factors based on the ratio of each respective class's monthly usage in the month of the system-wide coincident peak to the annual average monthly usage for each class and the system peak to system maximum-month demands. (AWWA M-1 page 379)*

**Maximum-Day Peaking Factor**

The formula for the maximum-day peaking factor is:

$$\frac{\text{Class Consumption During System MM}^*}{\text{Annual Average Month for Class}} \times \frac{\text{System Peak-Day Rate of Flow}}{\text{System MM Rate of Flow}}$$

**Maximum-Hour Peaking Factor**

The formula for the maximum-hour peaking factor is:

$$\frac{\text{Class Consumption During System MM}}{\text{Average Month for Class}} \times \frac{\text{System Peak-Hour Rate of Flow}}{\text{System MM Rate of Flow}}$$

\*MM = Maximum Month

<b>Table 32 - 2016 Coincident Peaking Factors</b>						
<b>Maximum-Day Peaking Factor</b>						
	Class Max Month	Class Avg Month	System Peak Day	System Max Month	Peaking Factors	Max Month Peaking Factor
Residential	574,847	405,293	1,543,331	1,362,342	1.61	1.42
Non-residential	316,246	220,493	1,543,331	1,362,342	1.62	1.43
Irrigation	417,891	224,087	1,543,331	1,362,342	2.11	1.86
<b>Maximum-Hour Peaking Factor</b>						
	Class Max Month	Class Avg Month	System Peak Hour	System Max Month	Peaking Factors	
Residential	574,847	405,293	2,424,969	1,362,342	2.52	
Non-residential	316,246	220,493	2,424,969	1,362,342	2.55	
Irrigation	417,891	224,087	2,424,969	1,362,342	3.32	

Table 33 - Cost distribution to customer classes —Base-extra capacity method (test year)							
Unit Cost Component	Total	Base	Extra Capacity		Supply Costs	Customer	Direct Fire
			Maximum Day	Maximum Hour		Meters & Services	Protection Service
		Equiv Meters	Ccf	Ccf	Ccf	Equiv Meters	Cost per Inch
Unit Costs of Service \$/Unit		\$ 107.24	\$ 87.52	\$ 157.36	\$ 0.95	\$ 80.02	\$ 3.68
Residential	15,441,464	42,297	8,385	12,685	5,044,067	42,297	
		4,535,993	733,886	1,996,088	4,790,791	3,384,706	
Non-residential	6,859,803	14,461	4,497	6,680	2,850,282	14,461	
		1,550,784	393,536	1,051,145	2,707,161	1,157,177	
Irrigation	7,188,908	9,944	9,348	10,140	3,066,840	9,944	
		1,066,422	818,183	1,595,706	2,912,845	795,752	
Fire Protection	394,366						107,184
Total Revenue Requirement	29,884,541	7,153,198	1,945,605	4,642,939	10,410,798	5,337,635	394,366

Given that, the Residential (SFR) and Non-residential peaking factors are all within 1% of each other (Maximum Month, 1.42 and 1.43 respectively, Maximum Day 1.61 and 1.62 respectively and Maximum Hour 2.52 and 2.55 respectively) indicates they are putting equally proportionate demands on the system.<sup>30</sup> There is no need or benefit to trying to distribute costs between SFR and Non-SFR customers.

Though the Irrigation class has significantly higher peaking factors, these factors are skewed and misleading.

The majority of all customers use water both inside for domestic use (heath and safety needs) and outside for irrigation as indicated by the peaking factors during the summer months. A small percent, 4%, of Valencia Water’s customers have dedicated irrigation services while the balance of the customers’ irrigation usage flows through their general-purpose meter. Most customers who have dedicated irrigation meters also have a separate meter for indoor use. (The indoor usage that flows through these meters are recorded under either the SFR or Non-SFR classification and are included the respective base and peaking calculations.)

As would be expected, the summer peaking factors for irrigation services are higher than general-purpose services BUT this is, in part, because the peaking factors for irrigation services are skewed. Peaking factors measure the increase in usage in maximum month, maximum day and maximum hour (which logically occurs during summer months when outside irrigation is at its highest) over “base” or average usage which includes indoor use. Since irrigation services do not have indoor use, the base or average use, which includes months when irrigation usage is relatively low or nonexistent, is understated and artificially low<sup>31</sup>. Dividing an artificially high peaking period by an artificially low base results in skewed the irrigation peaking factors.

<sup>30</sup> Based on the allocation of costs between classes in Table 33 and respective usage, both SFR and Non-SFR customers have the same SQR.

<sup>31</sup> This is further exacerbated by the fact that indoor use for customers with irrigation services are included in the base usage for general-purposes customers diluting the peaking factors for these class of customers.

Because the peaking factors are skewed, they should not be used to set rates for a separate irrigation class of customers. It would be inappropriate and punitive to charge customers with dedicated irrigation services a higher rate for water used for irrigation than is being charged to SFR and Non-SFR customers who purchase their irrigation water through their single general-purpose meter. Instead, they should be viewed as though they were being billed through their SFR and Non-SFR general-purpose meters and charged the same rate as other SFR and Non-SFR customers.

Having dedicated irrigation services is beneficial to both the customers and Valencia Water in monitoring irrigation usage and conserving resources especially during drought periods. These customers are also identified as potential recycled water customers when recycled water becomes available in their area.

Because, as discussed above, the peaking factors for SFR and Non-SFR customers are virtually the same and it would be inappropriate and punitive to charge one class of customers (dedicated irrigation customers) a higher rate for irrigation usage than another it is recommended that Valencia Water develop a common single quantity rate structure for all classes of customers.

## Rate Design

### AWWA M-1 Guidelines

*The “art” of rate-making tends to be seen through the development of structures of rates and charges that provide for adequate revenue recovery and best meet competing pricing objectives. The technological innovations and changing perspectives previously noted both affect the balancing of objectives and afford new opportunities to send more effective price signals to customers. (AWWA M-1 page 95)*

*A utility is presented with a major challenge when it sets out to select a rate structure that is responsive to the philosophy and objectives of both the utility and its community. Rates and rate structures are subject to legal requirements and typically consider various other criteria . . . It is important for the utility and its customers to select the appropriate rate structure because the majority of the utility’s revenues are collected through water rates and because pricing policies may support a community’s social, economic, political, and environmental concerns. (AWWA M-1 page 103)*

*In general, a utility should determine how its rate structure can support its goals and objectives, which might include the following:*

- *Yielding total revenue in a stable and predictable manner*
- *Minimizing unexpected changes to customers*
- *Discouraging wasteful use and promoting efficient use*
- *Promoting fairness and equity*
- *Avoiding unjust discrimination*
- *Maintaining simplicity, certainty, convenience, feasibility, and freedom from controversy*
- *Complying with all applicable laws*

*(AWWA M-1 page 108)*

## Background

Valencia Water provides Water Service in the Santa Clarita Valley alongside two other Water Purveyors, Newhall County Water District and Santa Clarita Water Division, a Division of the Castaic Lake Water Agency.<sup>32</sup> Together they serve over 98%<sup>33</sup> of the Valley.

Currently Valencia Water bills its SFR and Irrigation customers using water budgets<sup>34</sup>. The Non-SFR customers are billed using a single quantity rate. All customers are also billed a monthly service charge based on the size of the meter serving the customer's property.

Newhall County Water District bills its customers using a common single quantity rate for all customers and a monthly service charge based on the size of the meter serving the customer's property.

Santa Clarita Water Division bills its customers using a three-tier system for its SFR customers and a single quantity rate for all other classes. All customers are also billed a monthly service charge based on the size of the meter serving the customer's property.

During the recent drought, all three purveyors were able to meet or exceed the State imposed water usage reductions indicating that none of the rate structures were superior over the others.

Santa Clarita Water Division is proposing to switch to a common single quantity rate, similar to the way Newhall County Water District bills its customers, effective January 1, 2018. It is recommended that Valencia Water do the same.

## Proposed Rate Structure

It is recommended that Valencia Water design rates around a common single quantity rate for all classes of customers and a monthly service charge based on the size of the meter serving each customer's property.

- A single quantity rate for all customer classes would be consistent with the other two water purveyors in the area
- As noted above the peaking factors for SFR and Non-SFR customers are virtually the same and
- Because the peaking factors for irrigation customers are skewed it would be inappropriate and punitive to charge this class of customers a different/higher rate for irrigation usage than the other customers.

Valencia Water Company is also concerned with the legal complexities associated with developing conservation oriented tiered rates that meet all the requirements of Proposition 218. The courts have ruled tiered rates are legal under Proposition 218 "so long as conservation is attained in a manner that shall not exceed the proportional cost of the service attributable to the parcel and there is adequate support for the inequality between tiers, depending on the category of user."

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<sup>32</sup> A small percent of the customers in the Castaic area are served by Los County Water Works District 36

<sup>33</sup> 2015 Urban Water Management Plan for Santa Clarita Valley

<sup>34</sup> Water budgets are based on characteristics unique to the property being served such as lot size but also factors unrelated to the parcel such as size of household and percent of property landscaped, as well as real-time weather. As currently designed, these water budgets may not be compliant with Proposition 218.

Capistrano Tax Payers Association v. City of San Juan Capistrano California  
Court of Appeal 4th Appellate District, Division 3 Case No. G048969

The City of San Juan Capistrano tiered rates were not in compliance with Proposition 218. However

Tiered water rates are constitutional as long as they (1) satisfy the proportionality and revenue-neutrality provisions of Proposition 218, (2) relate to a service that is immediately available, and (3) have been disclosed to the public prior to implementation. Allocation-based conservation pricing consistent with California Constitution, article X, section 2, and Water Code section 372, is not at odds with Proposition 218 so long as conservation is attained in a manner that shall not exceed the proportional cost of the service attributable to the parcel and there is adequate support for the inequality between tiers, depending on the category of user.

Also as shown during the recent drought, properly designed single quantity rates along with customer education and increased conservation efforts can result in needed reductions in water usage.

Therefore, it is recommended that Valencia Water charge a common single quantity rate for all its customers.

A common single quantity rate structure for all classes of customers along with a monthly service charge, especially when charged by all water purveyors in the Santa Clarita Valley, can achieve the utilities' ratemaking goals.

- Yielding total revenue in a stable and predictable manner
- Minimizing unexpected changes to customers
- Discouraging wasteful use and promoting efficient use
- Promoting fairness and equity
- Avoiding unjust discrimination
- Maintaining simplicity, certainty, convenience, feasibility, and freedom from controversy
- Complying with all applicable laws

### Rate Calculations

As discussed above Valencia Water charges its customers a monthly service charge based on the size of the meter serving the customer's property and a quantity rate for water used. Historically, based on the PUC methodology, 50% of fixed costs were recovered through the service charge. This equated to 32% of Valencia Water's revenues being collected through the service charge.

Based on the Cost of Service Study, Valencia Water's proposed rates are designed to recover Base Costs and Customer Meters & Services costs through the service charge and Supply Costs and Peaking Costs through the quantity rate. Recovering Base Costs and Customer Meters & Services costs through the service charge will result in Valencia Water recovering 42% of its revenues through the service charge. In order to avoid rate shock, Valencia Water is proposing to phase this change in over the three years period designing rates to recover 32% of its revenues through the service charge in 2018, 36% of its revenues through service charge in 2019 and 42% of its revenues through the service charge in 2020.

### Service Charge Rates

Base costs, excluding supply are costs, are "O&M expenses and capital costs associated with service to customers under average load conditions, without the elements of cost incurred to meet water-use variations and resulting peaks in demand."

Customer Meters & Services costs “are those expenses associated with serving customers, irrespective of the amount or rate of water use. They include, but are not limited to, meter reading, billing, customer accounting, customer service, and collecting expense, as well as maintenance and capital costs related to meters and services.”

Base costs, excluding supply costs, and customer meters and services are viewed as fixed costs and appropriately should be recovered through the monthly service charge.

As discussed above, this will result in Valencia Water recovering 42% of its revenues through its service charge versus 31% that is currently recovered through the service charge. This change is proposed to be phased in over the three-year period.

#### Direct Fire Protection

Direct fire protection costs are those expenses that apply solely to the private fire protection function. These costs are recovered through a monthly service charge, charged only to private fire customers based on the size of the fire service.

#### Quantity Rates

Supply costs are directly proportionate to the amount of water used by customers.

Extra capacity costs, peaking costs “are expenses associated with meeting peak-demand rate-of-use requirements in excess of average (base) use and include O&M expenses and capital costs for system capacity beyond that required for average rate of use.”

Supply costs and peaking costs increase and decrease proportionate to customers’ water usage and appropriately should be recovered through a commodity or quantity charge.

<b>Table 34 - Fixed and Variable Cost Components-extra capacity method (test year)</b>					
		Fixed Costs		Variable Costs	
	Total Revenue Requirement	Equivalent Meter Charge	Private Fire	Supply Costs	Peaking
Base Capacity	7,153,198	7,153,198			
Maximum Day Peaking	1,945,605				1,945,605
Maximum Hour Peaking	4,642,939				4,642,939
Supply Costs	10,410,798			10,410,798	
Customer Meters & Services	5,337,635	5,337,635			
Direct Fire Protection Service	394,366		394,366		
	29,884,541	12,490,834	394,366	10,410,798	6,588,544

When allocating these costs by customer class, Base Capacity Costs<sup>35</sup> (excluding supply costs) and Customer Meters & Services are allocated using meter equivalent charge, direct fire services are

<sup>35</sup> Base costs are expenses that tend to vary with the total quantity of water used plus those O&M expenses and capital costs associated with service to customers under average load conditions, without the elements of cost incurred to meet water-use variations and resulting peaks in demand. Base costs

allocated based on the inch of diameter of pipe serving the property while supply costs are allocated by usage and peaking costs are allocated using weighted usage peaking factors.

Weighted usage peaking factors are the Annual Usage by the Maximum Month Peaking Factor.

	Annual Usage (Ccf)	Max Month Peaking Factor	Weighted Peaking Usage	Percentage of Peaking Costs
Residential	5,044,067	1.42	7,154,254	42.31%
Non-residential (plus 84% of Recycled)	2,814,514	1.43	4,036,773	23.87%
Irrigation	3,066,840	1.86	5,719,229	33.82%

Using the above factors fixed and variable costs are allocated between customer classes as follows.

	Total Revenue Requirement	Equivalent Meter Charge	Private Fire	Supply Costs	Peaking
		Equivalent Meters	Cost per Inch	Ccf	Weighted Peaking Usage
Residential	15,498,918	7,920,699		4,790,791	2,787,428
Non-residential	6,987,923	2,707,961		2,707,161	1,572,800
Irrigation	7,003,335	1,862,174		2,912,845	2,228,316
Fire Protection	394,366		394,366		
Total Revenue Requirement	29,884,541	12,490,834	394,366	10,410,798	6,588,544

Valencia Water is proposing to increase its revenue requirement by 6.3% per year over the next three years, create a single quantity rate for all customer classes and increasing the percentage of revenues collected through the service charge from 32% in 2018 to 41% in 2020. Tables 37, 38 and 39 reflect the current and proposed rates.

		Current Rates	2018	2019	2020
Potable	SQR	1.635	1.744	1.762	1.637
	Tier 1	1.373			
	Tier 2	1.635			
	Tier 3	2.044			
	Tier 4	2.657			
	Tier 5	3.454			
Recycled		1.373	1.465	1.480	1.375

include a portion of O&M expenses of supply, treatment, pumping, and distribution facilities. While supply costs vary directly proportionate to usage, O&M costs tend to be fixed.

<b>Table 38 - Proposed Monthly General Metered Service Charge</b>				
Meter Size	Current Rates	2018	2019	2020
5/8X3/4	10.70	11.46	13.26	16.81
3/4	16.00	17.19	19.89	25.22
1	26.70	28.66	33.15	42.03
1-1/2	53.40	57.31	66.30	84.06
2	85.40	91.70	106.08	134.50
3	160.10	171.94	198.90	252.19
4	266.90	286.56	331.50	420.31
6	533.70	573.13	663.00	840.63
8	854.00	917.00	1,060.80	1,345.00
10	1,227.60	1,318.19	1,524.90	1,933.44
12	1,761.30	1,891.31	2,187.90	2,774.07
14	2,401.80	2,579.06	2,983.50	3,782.82

<b>Table 39 - Proposed Monthly Fire Service Charge</b>				
Connection Size	Current Rates	2018	2019	2020
2	22.30	7.06	7.52	8.36
4	32.30	14.12	15.04	16.72
6	46.10	21.18	22.56	25.08
8	61.50	28.24	30.08	33.44
10	126.90	35.30	37.60	41.80
12	183.80	42.36	45.12	50.16
14	249.90	49.42	52.64	58.52



<b>Table 40 - Bill Comparison at Proposed Rates</b>				
	2018 at Current Rates	2018 at Proposed Rates	2019 at Proposed Rates	2020 at Proposed Rates
17 Ccf				
Service Charge	16.00	17.19	19.89	25.22
Qty. Charge	25.44	29.65	29.95	27.83
Pass Through Surcharge*	-	0.85	0.85	0.85
Revenue Adj. Surcharge	<u>7.00</u>	<u>7.00</u>	<u>-</u>	<u>-</u>
Total	48.44	54.69	50.69	53.90
Bill at Current Rates		<u>48.44</u>	<u>54.69</u>	<u>50.69</u>
\$ Increase		6.25	(4.00)	3.21
<b>% Increase</b>		<b>12.9%</b>	<b>-7.3%</b>	<b>6.3%</b>
*2019 and 2020 Bills do not include potential increase in Pass Through Surcharge				

## CONCLUSION

Valencia Water's rates were last updated in 2015. Based on current rates and the increase in operating costs, Valencia Water will not remain financially viable, and will not be able to fund its capital projects and meet its financial obligations in 2018, 2019 and 2020.

It is recommended that Valencia Water establish four reserve funds, an Operating Reserve Fund, Rate Stabilization Fund, Capital Reserve Fund and Emergency Reserve Fund. These funds would be funded over a ten-year period. In order to ensure its ability to continue providing a safe and reliable source of water to its customers, meet its financial obligations and fund its reserves, Valencia Water should increase its revenues by 6.3% annually in 2018, 2019 and 2020.

The increase in revenues should include an increase its returned payment fee and the creation of a termination notice fee and late fee.

In addition to these increases, it is recommended that the Valencia Water create a pass-through surcharge to recover incremental increases in purchased water and power costs that are not covered in rates. This would result in a pass-through surcharge of \$0.050 Ccf in 2018 and would need to be adjusted annually.

Lastly, Valencia Water maintains a Revenue Stabilization Account (RSA) to track any discrepancies between Valencia Water's projected revenue and actual revenue attributable to certain conservation programs. Valencia Water should continue the RSA. Valencia Water has a Revenue Adjustment Surcharge in place to recover drought-related and other revenue shortfalls in order to meet expenses and assists with funding water conservation programs mandated by state law. This surcharge was not reviewed as part of this study but it is recommended that Valencia Water keep this surcharge in effect as long as needed to recover the revenue shortfall in order to help maintain its financial stability and allow Valencia Water Company to continue to maintain a reliable and high-quality water delivery system. (See Appendix A) It is estimated that the revenue shortfall will be fully recovered the end of 2018. At that time the surcharge should be discontinued.

## Attachment 1 - QUALIFICATIONS

Kenneth J. Petersen, P.E.

Kenneth J. Petersen's business address is 24631 Avenue Rockefeller, Valencia, California. Mr. Petersen joined Valencia Water Company in October 2015. His current position is General Manager of the Company.

Mr. Petersen graduated from the California State University, Long Beach in 1971 with a Bachelor of Science degree in Civil Engineering. Also, he holds a Master of Science degree in Civil Engineering from California State University, Long Beach and he is a registered Professional Engineer in Civil Engineering in the State of California.

His career has spanned a broad range of management, engineering and construction activities. He has been a General Manager for a California Regulated Water Utility, two California Water Districts, a Joint Powers Agency, and Engineering and Operations Manager for a California State Water Contractor. He has provided managerial leadership in public water agency operations and maintenance programs, capital asset programs, design, and construction projects ensuring compliance with environmental requirements, established standards, specifications and public policy.

As the General Manager, his direct responsibilities include the managerial oversight of Valencia Water Company. The position is also responsible for the oversight of customer service, community relations, utility business development, water systems operations and maintenance, development of operations and maintenance budgets and long term planning for the Company.

Beverly Johnson, CPA

Beverly Johnson's business address is 24631 Avenue Rockefeller, Valencia, California. Ms. Johnson joined Valencia Water Company in 1993. She currently holds the position of Vice President / Controller. Prior to being promoted to Vice President / Controller she served as Controller from 2001-2013, Assistant Controller from 1997 to 2001, and Rate Analyst from 1993 to 1997 for the Company.

In these positions, she was responsible for the perpetration and submission of General Rate Cases before the California Public Utilities Commission and/or the Company's board of directors (five rate case proceedings). Her responsibilities included testifying before the Commission and negotiating settlements with Commission staff. In addition, she is responsible for the preparation of Valencia Water

## Attachment 1

Company's financial statements. Ms. Johnson oversees all activities related to accounting, finance and customer service.

Prior to joining Valencia, she worked for KPMG Peat Marwick as a Senior Auditor where she audited the financial statements of a broad client base in the Los Angeles area.

Ms. Johnson holds a B.S. degree in Accounting from California State University Northridge. She is a Certified Public Accountant in the State of California.

### John Garon, Consultant

Mr. Garon is a retired water executive. He resides in Valencia California. Prior to retiring in April 2017, Mr. Garon most recently held the position of Director of Regulatory Affairs for a publically traded California water company regulated by the Public Utilities Commission. His responsibilities included participating in all levels of the General Rate Case process and participation in Special Proceedings before the California Public Utilities Commission.

Mr. Garon graduated from California State University, Northridge, in January of 1976 with a Bachelor of Science Degree in Business Administration with an Accounting Option.

He joined his previous employer in April 2007 as a Regulatory Affairs Manager. He was promoted to Director of Regulatory Affairs. Prior to joining his previous employer, he was the Vice President/Chief Financial Officer and then Assistant Retail Manager of Santa Clarita Water where he started his water career in July 1987. Santa Clarita Water was a Class A Water Utility regulated by the California Public Utilities Commission until September 1999, at which time it was purchased by the Castaic Lake Water Agency. His responsibilities included preparing the Company's financial reports, budgeting and ratemaking. In addition, he has sponsored and presented expert testimony before the California Public Utilities Commission.

## Appendix A - REVENUE ADJUSTMENT SURCHARGE

The Revenue Adjustment Surcharge (RAS) was implemented 2011, and provides financial stability to VWC when revenue is insufficient to meet expenses due to unforeseen revenue shortfalls. The existing RAS was calculated to account for unforeseen revenue shortfalls caused by water use reductions mandated by the State of California, delays in the implementation of VWC's last General Metered Rate increase caused by VWC's changed status with the CPUC, and greater-than-expected impacts on the Low-Income Ratepayer Assistance Program. The RAS is necessary to ensure VWC maintains the funding needed to continue providing safe and reliable water service.

VWC maintains a Revenue Stabilization Account (RSA)<sup>36</sup> to track any discrepancies between VWC's projected revenue and actual revenue attributable to certain conservation programs. The RSA is also used to track changes in variable costs associated with revenue fluctuations. This ensures that VWC maintains the funding necessary to continue to provide high-quality water service and to implement conservation and incentive programs for ratepayers, even if the latter results in an unforeseen revenue shortfall. Notably, conservation often causes a revenue shortfall, but not a corresponding decrease in all variable costs nor any decrease in fixed costs. Consequently, the RSA is a crucial aspect of Valencia's WaterSMART conservation program. Any unanticipated additional funds in the account beyond those needed to make up for unforeseen revenue shortfalls will be used to offset VWC customers' rates in the next rate assessment. Any charge associated with the account is paid by all VWC customers.

The majority of the costs to maintain the infrastructure and water facilities are fixed and do not decrease when sales decline. While customers do pay a fixed monthly service charge, the largest portion of revenues are generated by water consumption. Simply stated, the reduced water consumption mandated by the state due to the drought reduced revenues available to cover the fixed costs of operation. Additionally, the higher than normal rainfall which occurred in 2016-17 resulted in lower than projected water sales, further exacerbating the revenue shortfall. In October 2016, VWC projected that the RAS would remain in place for approximately one year in order to recover the revenue shortfall. However, due to lower than expected water sales, the RAS will remain in place until the revenue shortfall in the RSA has been fully recovered. VWC will continue to monitor the activity in the RSA on a monthly basis to ensure that the goal of recovering the accumulated revenue shortfall is being accomplished, and to ensure that the account does not become over-collected due to increased sales and/or water cost savings.

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<sup>36</sup> Formerly known as "Water Revenue Adjustment Mechanism" in previous rate cases.