ITEM NO.
6.2

Ratepayer Advocate Report

Review of 2021 Retail Water Rate Cost Analysis and Rate Design

April 16, 2021

SCV WATER

SANTA CLARITA VALLEY WATER AGENCY

Ratepayer Advocate Report

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RDN Project Number 281

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EXECUTIVE SUMMARY

Study Objective

The purpose of this study is to review the proposed revenue adjustments and rates; and ensure that they align with standard rate design practice and that they represent the best possible rates for customers. Santa Clarita Valley Water Agency (SCV Water) was created to improve water system efficiency in the Santa Clarita Valley through the merger of three smaller water agencies which are now known as divisions; Newhall Water Division (NWD), Santa Clarita Water Division (SCWD), and Valencia Water Division (VWD). SCV Water seeks to unify three disparate rate structures into a single equitable rate structure that complies with California law and statute. The Board of Directors retained the Ratepayer Advocate to represent SCV Water ratepayer interests in the rate design process, and to ensure that customers have a qualified and objective voice in how their proposed revenue adjustments are determined and rates are created.

According to the American Water Works Association's Manual 1 (AWWA M1), water rates should:

- **Ensure Revenue Sufficiency**: Rates should recover the annual cost of service and provide revenue stability,
- **Minimize Rate Impact**: While rates are calculated to generate sufficient revenue to cover operating and capital costs, they should be designed to minimize the impacts on customers,
- **Be Equitable**: Rates should be fairly allocated among all customers based on their estimated demand characteristics, and
- **Be Practical**: Rates should be simple in form; therefore, adaptable to changing conditions, easy to administer, and easy to understand.

Summary of Recommendations

The primary objectives of this review are to determine if the proposed rate adjustments are supported by appropriate plans, regulatory requirements and policy objectives, and that the associated revenue requirements are appropriately allocated among the Agency's customers commensurate with their service requirements while maintaining ratepayer affordability.

Review of Current Rates

Currently, each division has a different set of rates; therefore customers may pay a different amount for the same volume of water they use depending on where they reside. Having three different sets of rates under one utility system leads to an unequitable cost recovery. The Ratepayer Advocate agrees that the Agency should unify rates to eliminate any existing inequity under the current rates. The new rates should recover costs commensurate with service requirements based on ratepayer's usage and meter size; however, customers should pay the same amount regardless of the division they reside in for identical requirements.

Key Assumptions

SCV Water staff projected water demand over the five-year study period and offset the demand increase by the Agency's conservation goals. The Ratepayer Advocate found this forecasting approach to be reasonable. The Ratepayer Advocate proposed allowing the growth rates to vary across meter sizes, given the historical deviation

in growth rates by meter size. SCV Water chose to proceed with the growth rates defined by the Agency engineering team, which uses a uniform growth rate for all meter sizes. The Ratepayer Advocate compared the two methodologies and determined that the Agency's usage projections fall within a reasonable range of probable water demand.

The Ratepayer Advocate supported Agency staff in determining escalation factors for operating and maintenance expense which are reasonable and based on the best available data. Sources include California Department of Finance projections, US Bureau of Labor Statistics indices, Engineering News-Record's Construction Cost Index, and Los Angeles County property tax records, among others. Agency specific revenues and expenses are escalated using its historical change found in its financial records. The Ratepayer Advocate confirmed the projections and agreed that they represent industry standard categories. The Ratepayer Advocate recommends updating these escalation factors periodically as they fluctuate year-over-year.

Financial Planning/Revenue Requirements

O&M expense, CIP expense, and debt service payments were forecasted over five year period using escalation factors, and other operating revenue and non-operating revenue were used to offset the total cost to determine "rate revenue requirements" (revenue needed to be generated from customer rates) for each year of the study period. The largest cost driver is the PFAS (per- and polyfluoroalkyl substances) related treatment and operation costs, which amount to $22 million over the next five years, and this expense will continue to incur beyond the study period. The Agency's current cost breakdown between fixed and variable costs are approximately 72 percent and 28 percent, respectively.

The Agency will be able to maintain healthy cash reserves of approximately $126 million over the next five years without additional contributions from customer rates. The Agency considers a successful financial planning for this period is to ensure that sufficient amount of cash is secured for PAYGO (pay-as-you-go; capital project costs paid by cash) after all expenses are paid. The Agency determined that the minimum amount of PAYGO cash they need to secure for the study period is an annual average of $19 million or $96 million over the five year study period. To achieve this financial goal, the Ratepayer Advocate recommended no revenue adjustment for the first year and a 6.5 percent of annual adjustment for the subsequent four years. The Board of Directors selected this financial option on February 16th, 2021 and new proposed rates created based on this plan will be proposed to customers via Proposition 218 notices.

Cost of Service Analysis

The Ratepayer Advocate reviewed the Agency's COS analysis to ensure that costs were allocated among customers commensurate with their service requirements. SCV Water selected the "base-extra capacity" cost-of-service method promulgated in AWWA's M1 to allocate costs to individual functions, which are typical industry standard activities, then the costs of each function were distributed to appropriate cost causative components, which are defined by the cost driving elements. The Ratepayer Advocate determined that the results of the COS form a reasonable and equitable basis for designing rates. The COS analysis indicated that the share of the total revenue requirements for NWD, SCWD, and VWD should be 13 percent, 44 percent, and 42 percent respectively when costs were recovered equitably. The remaining share of approximately one percent should be recovered from public fire protection service accounts. Recycled water service costs were computed separately from the potable water cost of services.

Agency staff and the Ratepayer Advocate collaboratively tested a different scenario by setting a test year in FY 2025-26 as part of effort to mitigate bill impacts on customers; however, concerns regarding equity among all customers in the three divisions overweighed the affordability for some customers. Consequently, the test year was set to be FY 2021-22 to achieve equity among all customers from the very start of the study period.

Rate Setting

The Ratepayer Advocate conducted an extensive review of proposed rates and validated that the rates meet all conditions set forth by the AWWA M1. The revenue requirements for the test year (FY 2021-22) will be kept at the same level as the current year's to mitigate bill impacts on the customers. Legacy Debt obligations and revenues collected to pay for the debt were excluded from the rate calculation and treated as direct pass-through charges for SCWD and VWD. The proposed rates will collect 71 percent of revenue from variable charge and 29 percent from fixed monthly service charges.

Bill Impacts

the Ratepayer Advocate's performed extensive bill impact analyses throughout the rate setting process to find the minimum rate impact across all customers given the revenue requirements determined via financial planning and COS analysis. The final rates recommended by SCV Water staff incorporated this analysis and reflect the best possible rate design with the lowest overall customer bill impact. The median bill impacts on NWD, SCWD, and VWD customers for the first year (FY 2021-22) are estimated at -16 percent, -1 percent, and 6 percent respectively.

Recommendations for Future Improvements

While the proposed rates adhere to all California law and represent the lowest impact on current customers, future rate studies can implement additional improvements to the overall rate structure and process. Outlined below are the improvements recommended by the Ratepayer Advocate.

- **Implementation of tiers** – the Agency currently receives 50 percent of water from the State Water Project and pumps the remaining water from local wells (groundwater). The costs of these two water sources are significantly different. The Ratepayer Advocate recommends the Agency to consider building a rate structure that reflects the difference in the costs of the two water sources by incorporating tiers into the structure. For example, setting tier 1 rate to include the cost of groundwater and setting tier 2 rate to include the costs associated with the State Water Project water. This will also promote conservation and distribute costs equitably between large users (who put a greater strain on the system) and small users (often lower income, smaller households). SCV Water currently needs a 4/5ths Board vote in order to implement tiered rates because of language contained in Senate Bill 634; however, by the next rate study, this stipulation will have ended and the Board of Directors will be able to pass a tiered rate structure with a majority vote.
- **Development of customer class specific rates** – the Agency currently identifies various customer classes by grouping customers in the similar service requirements. The Ratepayer Advocate recommends developing rates that are specific to each of these customer classes to reflect their unique service requirements. A COS analysis will capture the differences in demand characteristics and will allow the Agency to allocate costs more equitably. The purpose of the current rate study was to unify the rates of the three divisions to improve customer equity. In the next rate study, SCV Water can further improve equity by developing individual rate structures for each customer class so that the costs which should be borne by commercial or industrial customers will not be passed onto residential customers, or vice-versa.

- **Projection of demand and customer growth based on individualized meter and customer class** – revenue projections are a key input to the rate design process. In order to produce the most accurate customer growth and usage projections during the next rate study, the Ratepayer Advocate recommends that the Agency accounts for individualized meter growth rates as well as growth rates by customer class based on historical trends and other foreseeable factors.

1. INTRODUCTION

Agency Overview

The former Castaic Lake Water Agency was originally formed as a wholesale water agency to acquire, treat, and deliver State Water Project water supply throughout the Santa Clarita Valley to its retailers, which included Newhall County Water District (NCWD), Santa Clarita Water Division (SCWD), Valencia Water Company (VWC), and Los Angeles County Waterworks District (LACWD) #36. SCV Water was formed in January 2018 through a merger, by an act of the State Legislature Senate Bill (SB) 634, converging the three agencies (NCWD, SCWD, and VWC) into one new retail provider. Expected economies of scale created by this merger is approximately $14 million in the first ten years. The Agency seeks to establish sustainable and modernized water resource management and create one unified water rates for all customers in the valley. The Agency serves a population of approximately 273,000 through 72,000 water service connections, and its service area encompasses over 195 square miles.

The Agency's water supply comes from two sources: local groundwater pumped from the Alluvium Aquifer and the Saugus Formation and State Water Project water imported from Northern California. Recycled water is currently only available for VWD customers, however, the Agency is proposing to expand the use of recycled water to offset future potable water demand. The Agency is currently preparing the 2020 Urban Water Management Plan (UWMP) Update. The plan will direct water supply long-term planning to ensure adequate water supplies are available for existing and future customers of the Agency. The Agency makes an assumption for water demand over the next five years which ranges between 58,636 Acre Feet per Year (AFY) and 60,545 AFY for this study.

Legal Framework

Article XIII C (Proposition 26), Article XIII D, Section 6 (Proposition 218) and Article X, Section 2 of the California Constitution govern the principles applicable to this rate study. Additionally, SCV Water must abide by SB-634 as a condition of its creation.

California Constitution-Article XIII C (Proposition 26)

The application of Proposition 26 in the structuring of water rates is presently undetermined. The San Juan decision briefly touched upon one aspect of the Article XIII C provisions enacted by Proposition 26, finding that tiered water charges would not appropriately be characterized as penalties. Other aspects of the application of Proposition 26 to tiered rate structures may be addressed in future judicial decisions and legislative enactments.

The voters in the State approved Proposition 26 on November 2, 2010. Proposition 26 amended Article XIII C of the State Constitution to expand the definition of "tax" to include "any levy, charge, or exaction of any kind imposed by a local government" with listed exceptions. By means of these exceptions, Article XIII C classifies several types of charges, in addition to property-related charges, that are not taxes, such as charges for specific services or benefits, regulatory charges and penalties.

Article XIII C's definition of "tax" lists the following exceptions: (1) a charge imposed for a specific benefit conferred or privilege granted directly to the payer that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of conferring the benefit or granting the privilege; (2) a charge imposed for a specific government service or product provided directly to the payer that is not provided to those

not charged, and which does not exceed the reasonable costs to the local government of providing the service or product; (3) a charge imposed for the reasonable regulatory costs to a local government for issuing licenses and permits, performing investigations, inspections, and audits, enforcing agricultural marketing orders, and the administrative enforcement and adjudication thereof; (4) a charge imposed for entrance to or use of local government property, or the purchase, rental, or lease of local government property; (5) a fine, penalty, or other monetary charge imposed by the judicial branch of government or a local government, as a result of a violation of law; (6) a charge imposed as a condition of property development; and (7) assessments and property-related fees imposed in accordance with the provisions of Article XIII D.

Proposition 26 also provides that the local government bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payer bear a fair or reasonable relationship to the payer's burdens on, or benefits received from, the governmental activity. Like the proportionality requirements of Article XIII D, assessment of rates under these requirements, if applicable, would be supported by the cost of service approach.

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

In November 1996, California voters passed Proposition 218, the "Right to Vote on Taxes Act." This constitutional amendment protects taxpayers by limiting the methods by which local governments can create or increase taxes, fees and charges without taxpayer consent. Between 2002 and 2017, California courts have ruled that fees associated with providing water services are "property-related" and thus under the jurisdiction of Prop 218. The principal requirements for fairness of the fees, as they relate to public water service, are as follows:

1. Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
2. Revenues derived by the fee or charge shall not be used for any other purpose other than that for which the charge was imposed.
3. The amount of the fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. 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.

The rates developed in this Report use a methodology to establish an equitable system of charges that recover the cost of providing service and fairly apportion costs to each customer as required by Proposition 218.

California Constitution - Article X, Section 2

Article X, Section 2 of the California Constitution (established in 1976) provides as follows:

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

As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage efficiency which this Study achieves.

Senate Bill–SB 634

Senate Bill 634 provided for the creation of SCV Water and an independent Ratepayers Advocate and was approved by the Governor of California October 15, 2017.

Section 2. The Santa Clarita Valley Water Agency is hereby created, organized, and incorporated. The agency shall be managed as expressly provided in this act and the agency may exercise the powers in this act that are expressly granted or necessarily implied. The agency may include contiguous or noncontiguous parcels of both unincorporated and incorporated territory and territory included in any public district having similar powers. As used in this act and unless otherwise indicated by its context, "agency" means the Santa Clarita Valley Water Agency.

Sec. 2.5. The purpose of the agency is to unify and modernize water resource management within the Santa Clarita Valley through the efficient, sustainable, and affordable provision, sale, management, and delivery of surface water, groundwater, and recycled water for municipal, industrial, domestic, and other purposes at retail and wholesale within the territory of the agency and to do so in a manner that promotes the sustainable stewardship of natural resources in the Santa Clarita Valley.

Sec. 4.(h) The indebtedness of the Newhall County Water District and the Santa Clarita Water Division, a retail division of the Castaic Lake Water Agency, that exists as of December 31, 2017, including acquisition costs, tax obligations, and debt financing of capital improvement projects, shall be borne by retail divisions of the agency that correspond with the Newhall County Water District and Santa Clarita Water Division areas, respectively, and paid for from the revenues of the corresponding retail divisions. Any indebtedness incurred by the agency shall not be limited by this subdivision.

(l) The agency may treat the retail divisions as a single unit for purposes of operations and expenses to the extent that it is economically beneficial for the operations of the agency as a whole, but as long as any preexisting indebtedness of a retail division remains outstanding, that indebtedness shall continue to be allocated to that retail division and paid from that retail division's rates and charges. When all such preexisting indebtedness has been retired, the agency shall dispense with the retail divisions for all purposes as soon as feasible.

Sec. 14(b) On or before January 1, 2019, the agency shall develop a rate setting process that includes an independent ratepayer advocate to advise the board of directors and provide information to the public before the adoption of new wholesale and retail water service rates and charges. The ratepayer advocate shall be selected by and report directly to the board of directors and shall be independent from agency staff. The ratepayer advocate shall advocate on behalf of customers within the agency's boundaries to the board of directors. The ratepayer advocate shall have access to all pertinent agency documents and information to independently advise the board of directors and inform the public. The board of directors shall develop and adopt any necessary rules and procedures to further define the role of the ratepayer advocate. The board of directors shall not eliminate the ratepayer advocate role before January 1, 2023. On and after January 1, 2023, the board of directors may eliminate the ratepayer advocate role with an affirmative vote of four-fifths of its membership.

Sec. 21. The agency may impose and collect capacity charges and connection fees pursuant to Section 66013 of the Government Code.

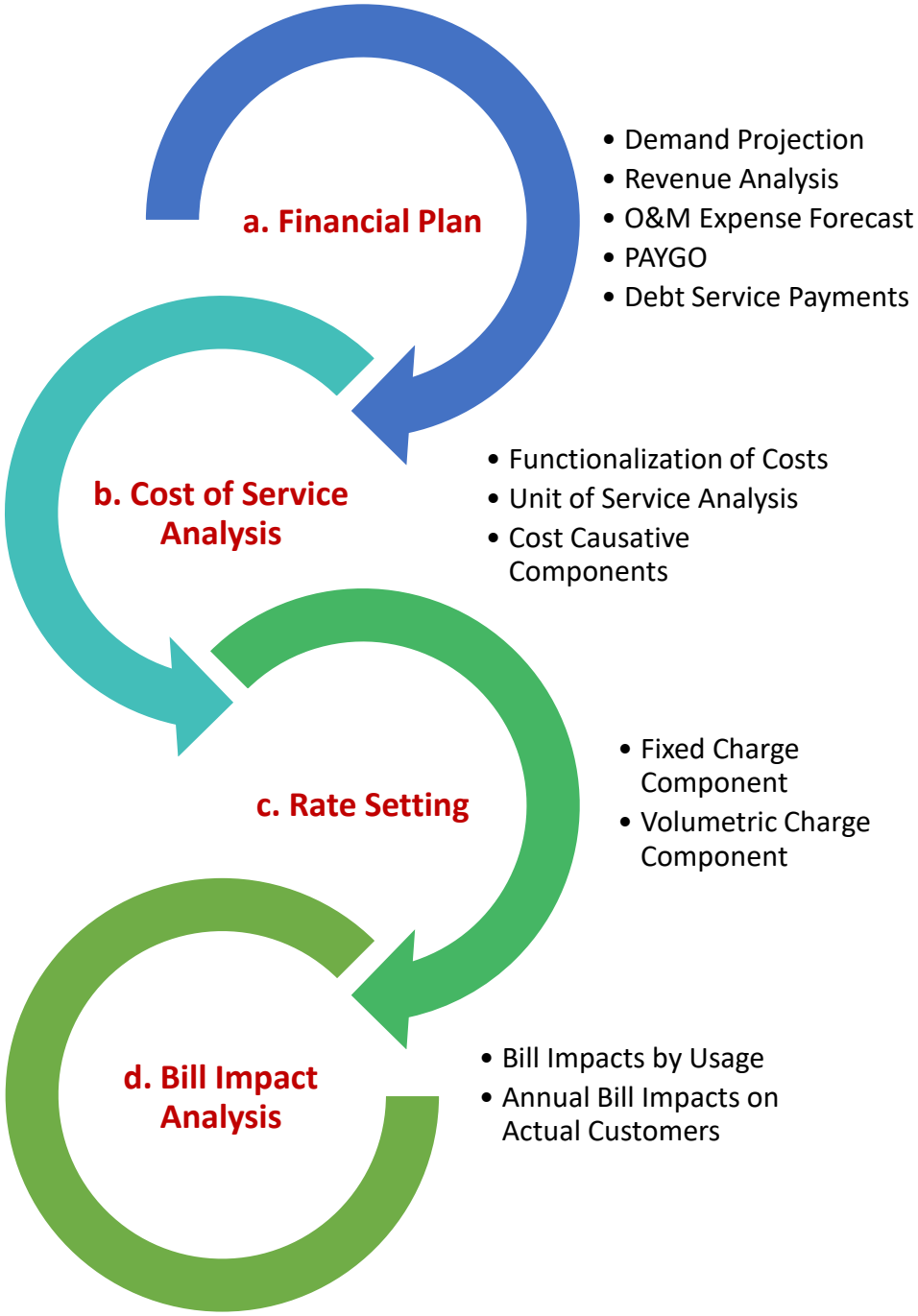
Methodology

SCV Water developed rates using principles set forth by the American Water Works Association (AWWA) Principles of Water Rates, Fees, and Charges - Manual of Water Supply Practices (M1). Cost of service principles endeavor to distribute costs to customers commensurate with the service requirements each places on the water system. SCV Water used the base-extra capacity method, described in the AWWA M1. This method conforms to Proposition 218 requirements and industry standards while meeting the other goals and objectives outlined in this report.

Figure 1 presents a typical process of multi-level analyses used to complete a rate study. Between each step outlined, the Ratepayer Advocate reviewed the work undertaken by SCV Water to ensure that the methods used properly accounted for ratepayer concerns.

The role of Ratepayer Advocate goes beyond what is usually required under California Law (except that it is an outlined requirement under SB 634 and provided as part of the basis for SCV Water's inception). The tasks undertaken by the Ratepayer Advocate included working with, but independently of SCV Water staff. During the initial stage of the rate setting process, the Ratepayer Advocate provided the Agency staff a rate model to utilize in building a rate case. This allowed the Ratepayer Advocate to conduct thorough review on all assumptions and inputs because of its familiarities to the model. The Ratepayer Advocate also conducted dozens of extensive bill impact analyses to find the lowest possible rates for its customers and provided expertise as a rate consultant to support Agency staff throughout the process.

Figure 1. Road Map of the Rate Study Process



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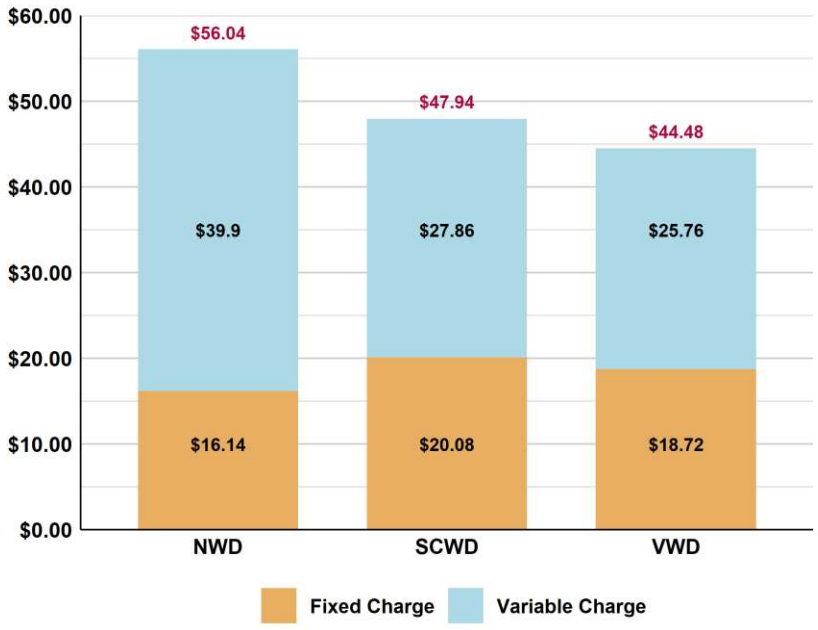
2. REVIEW OF RATE STUDY

Current Rates

SCV Water serves customers who represent customers of three previously separate water agencies. Prior to the merger, each agency had separate administrative structures as well as financial plans. Some of the differences in the current rates are because of administrative paradigms, which were unique to each agency. For example, investor-owned utilities are allowed to make a profit on their water service, whereas municipal ones are not. Furthermore, customer rates can be affected by outside funding sources such as property taxes and grants. Finally, the rate structure itself may influence which types of users pay a proportion of costs.

The current fixed monthly service charges range from $16.14 to $30.28 per month and the variable charges range from $1.84 per ccf to $2.85 per ccf depending on the rate structures each division uses. If a ratepayer with a ¾ inch meter in the NWD service area uses 14 hcf of water monthly, the ratepayer pays $56.04 while SCWD and VWD customers would pay $58.14 and $50.98 monthly; however the SCWD and VWD rates include Legacy Debt payments per Senate Bill (SB) 634 that requires the payments to be collected from the retail divisions who owed the debt prior to the merger. The amount of the debt payment for a ¾ inch meter service was estimated at $10.20 and $6.50 per month for SCWD and VWD respectively. To find the true differences in the cost of services collected from customers in three separate divisions, Figure 2 compares the rates excluding the Legacy Debt payments. SCWD and VWD customers currently pay $47.94 and $44.48 per month while NWD customers pay $56.04 for 14 hcf of water use when excluding the Legacy Debt payments. The amount of bill should be identical for all customers of all three divisions with a ¾ inch meter when the same volume of water is used.

Figure 2. Current Rates at 14 hcf of Water Use (3/4") by Division Excluding Legacy Debt Payments



Note: the estimated legacy debt charges are excluded from SCWD and NWD fixed service charges

SCV Water's current rates are shown in Table 1 by division. Note that the SCWD and VWD fixed monthly service charges in this table include the Legacy Debt payments.

Table 1. Current Rates

Fixed Monthly Service Charges			
Meter Size	**NWD**	**SCWD**	**VWD**
5/8 in	-	$22.32	$16.81
3/4 in	$16.14	$30.28	$25.22
1 in	$26.96	$46.16	$42.03
1 1/2 in	$53.75	$85.90	$84.06
2 in	$86.04	$133.56	$134.50
2 1/2 in	$129.13	-	-
3 in	$161.42	$260.72	$252.19
4 in	$269.08	$403.74	$420.31
6 in	$538.00	$801.04	$840.63
8 in	$860.84	$1,277.81	$1,345.00
10 in	$1,237.58	-	$1,933.44
12 in	$2,313.40	-	$2,774.07
Variable Charges			
Uniform Rate	**NWD**	**SCWD**	**VWD**
Per CCF	$2.85	$1.99	$1.84

Note: SCWD and VWD fixed monthly service charges include Legacy Debt payments

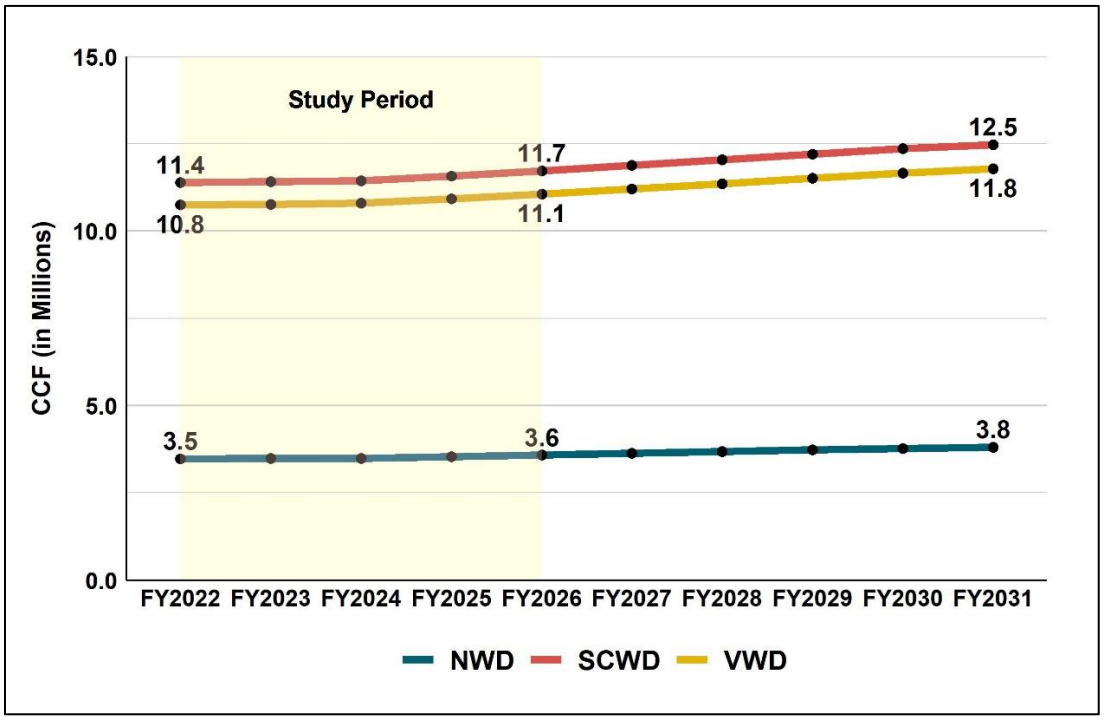
Key Assumptions

FY 2021-22 was selected as the test year for which costs are to be analyzed and rates to be established for this study. The financial plan was built for the next five years, FY 2021-22 through FY 2025-26 with a detailed revenue adjustment plan. The Agency's fiscal year starts on July 1 and ends on June 30.

Demand Projections

Accurately forecasting customer demand has key implications for revenue sufficiency. The Ratepayer Advocate reviewed SCV Water's internally created demand projections. The Agency independently forecasted usage and meters basing on population increase forecasts from the Maddaus Water Management, Inc. 2014 study. Forecasts for demand and account growth are shown in Figure 3 and Figure 4. Over the five year study period, SCV Water's forecasted increase in consumption was offset by the Agency's conservation goals. The Ratepayer Advocate found this forecasting approach to be reasonable.

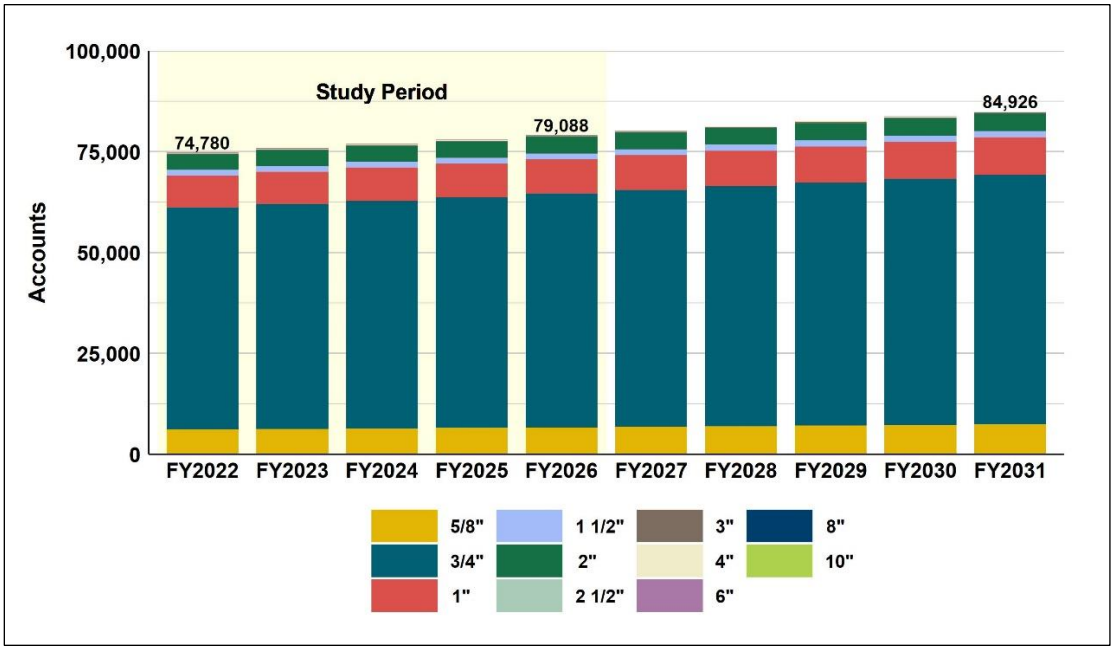
Figure 3. Consumption Forecast by SCV Water, FY 2021-22 – FY 2030-31



Note: FY2022 indicates FY 2021-22

To forecast customer account growth, the Agency relied on the growth rate defined by Agency engineers, which is a constant rate for all meters.

Figure 4. Customer Growth Projections by SCV Water, FY 2021-22 – FY 2030-31



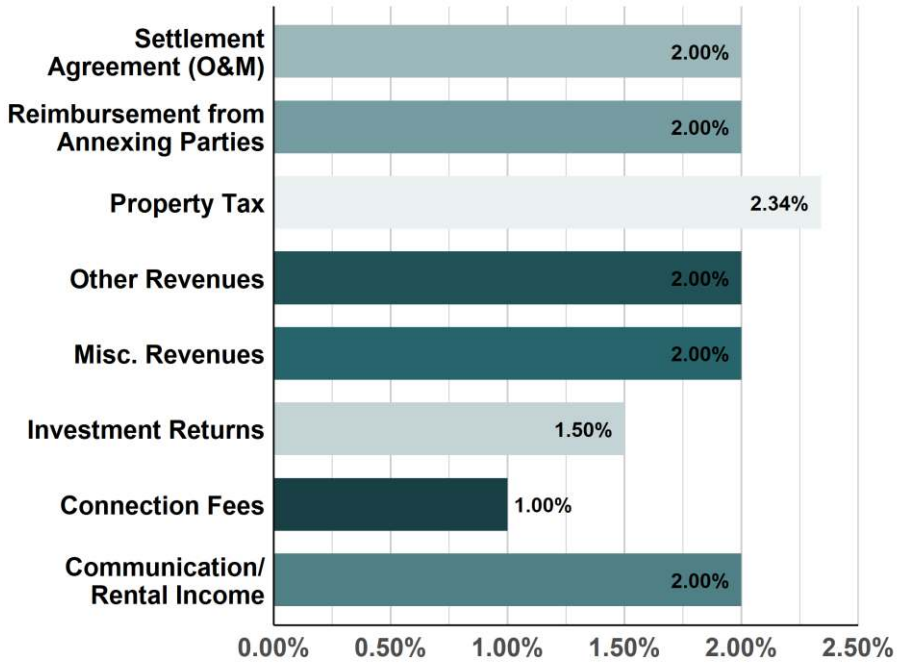
Note: FY2022 indicates FY 2021-22

The Ratepayer Advocate proposed allowing the growth rates to vary across meter sizes based on the historical deviation in growth rates by meter size present in the Agency's historical data. SCV Water determined that this would have minimal impacts on overall revenue projections. The usage and customer billing records obtained from the Agency had some inconsistencies since they combined the databases of three previously separate agencies. The Ratepayer Advocate recommends that SCV Water considers incorporating the heterogeneous growth trends across customer types (meters and customer classes) to project demand for the next rate study. The Ratepayer Advocate believes that accounting for growth rate trends by meter size and customer class will increase the accuracy of future demand projections.

Escalation Factors

Costs were based on recent financial data and operating budgets. Projections were developed using escalation factors specific to each type of cost incurred (Figure 5 and Figure 6). The Ratepayer Advocate supported Agency staff to find escalation factors which are reasonable and based on the best available data. Sources include California Department of Finance projections, US Bureau of Labor Statistics indices, Engineering News-Record's Construction Cost Index, and Los Angeles County property tax records, among others. Agency specific expenses are escalated using the historical changes found in the financial records. Itemized revenues are escalated using Agency specific factor derived from its historical financial data. Table 2 shows the relevant source for each expense escalation factor used in the financial model. The Ratepayer Advocate confirmed the projections and agree that they represent industry standard categories.

Figure 5. Revenue Escalation Factors, FY 2021-22 – FY 2025-26



Note: All revenue escalation factors were sourced internally at SCV Water based on historical data

Figure 6. Expense Escalation Factors, FY 2021-22 – FY 2025-26

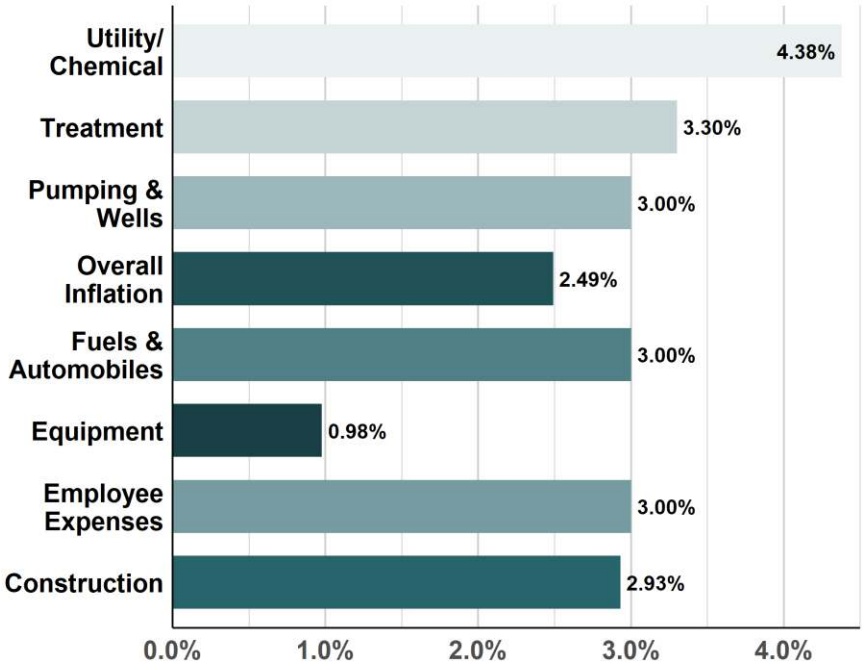


Table 2. Data Sources for Expense Escalation Factors, FY 2021-22 – FY 2025-26

Escalation Factor	Source
Utility/Chemical	CA Department of Finance/BLS
Treatment	Agency Historical Data
Pumping & Wells	Agency Historical Data
Employee Expenses	Agency Historical Data
Fuels & Automobiles	Agency Historical Data
Construction	LA ENR Index
Overall Inflation	CA Department of Finance/BLS
Equipment	Construction Equip. and Machinery PPI

Additionally, particular attention was paid to those costs which vary with the volume of water sold – such as power, chemicals, and related consumables (variable costs) – and those costs which, over the five-year forecast period, do not vary with the volume of sales – such as capital costs, debt service, general administrative overhead, or fixed contractual purchase obligations (fixed costs). Agency policies regarding debt service coverage ratio targets also have an impact on its revenue requirements and, therefore, cost of service (COS) analysis and rates.

Equivalent Meter Size

When designing a fixed monthly service charge, the potential demand or capacity requirements placed on the water system can be measured by the size of installed meters to receive services from the system. The safe operating flow (or capacity) of a particular size of meter is essentially the limiting factor in terms of the demand

that can be exerted on the water system through the meter. The ratio of the safe operating capacity of various sizes of meters relative to the capacity of a base meter may be used to determine appropriate charges for the larger meter sizes. Table 3 shows the equivalent meter ratios and capacity for each size meter used in the rate study.

Table 3. AWWA Equivalent Meter Ratios

Meter Size	Equivalent Meter Ratios	Required Capacity
5/8-in	0.67	20
3/4-in	1.00	30
1-in	1.67	50
1 1/2-in	3.33	100
2-in	5.33	160
2 1/2-in	6.33	190
3-in	10.00	300
4-in	16.67	500
6-in	33.33	1,000
8-in	53.33	1,600
10-in	76.67	2,300
12-in	143.33	4,300

Note: Required capacity is in gallons per minute (gpm)

Financial Plan

In collaboration with the Ratepayer advocate, SCV Water staff built a five-year financial model using key assumptions described in the previous section. Using the plan, the Agency is set to meet the proposed financial goals of generating $19 million on average for CIP projects funded by customers' rates during the study period.

Operating and Maintenance (O&M) Expense

The itemized O&M expenses were carefully reviewed and forecasted for the study period using escalation factors. Table 4 shows SCV Water's O&M Expenses by function for the study period.

Table 4. O&M Expenses by Category

	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Source of Supply	$7,501,112	$7,710,628	$8,626,229	$8,938,773	$9,262,754
Pumping & Wells	$15,785,709	$17,181,005	$18,860,421	$19,993,793	$24,353,573
Water Quality & Treatment	$6,964,324	$7,197,978	$7,439,835	$7,705,639	$7,981,842
Transmission, Distribution & Maintenance	$12,345,787	$12,849,208	$13,217,447	$13,597,604	$13,988,855
Engineering	$3,320,355	$3,415,334	$3,513,046	$3,612,713	$3,715,233
Customer Accounts	$2,793,157	$2,876,376	$2,962,076	$3,050,272	$3,141,096
Administrative and General	$20,941,865	$22,093,741	$22,106,315	$23,310,668	$23,319,033
Water Resources	$7,769,713	$8,371,328	$8,194,026	$8,746,919	$9,187,875
Total	**$77,422,023**	**$81,695,597**	**$84,919,394**	**$88,956,379**	**$94,950,263**
Annual % Change	**2.3%**	**5.5%**	**3.9%**	**4.8%**	**6.7%**

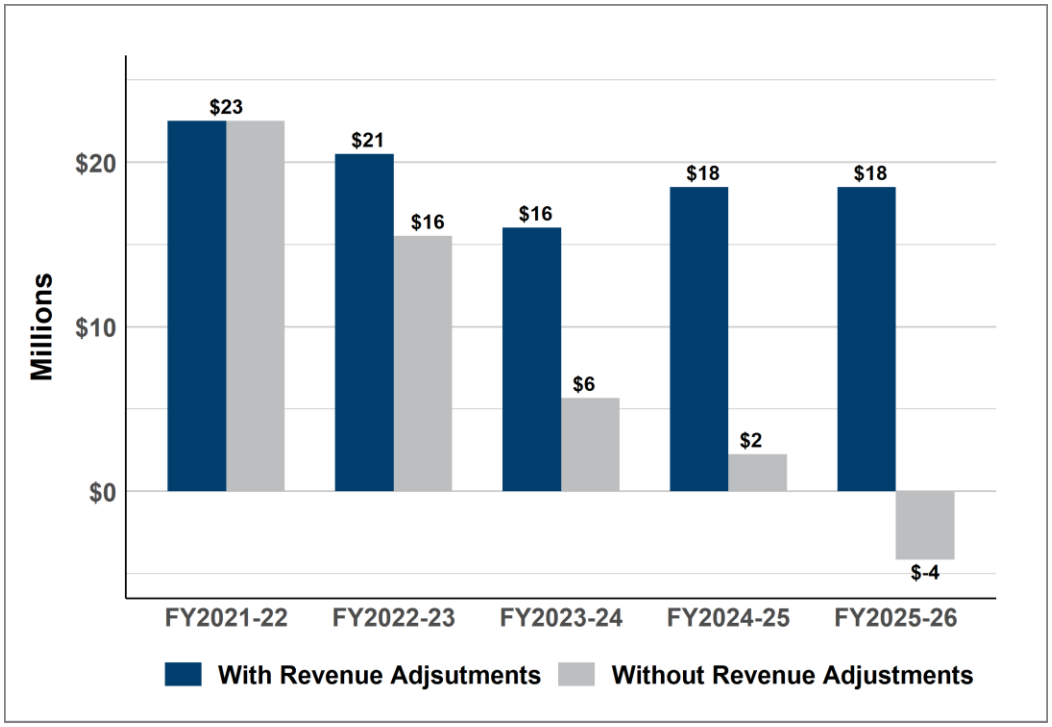
The Ratepayer Advocate reviewed the detailed O&M expense list provided in the rate model and discussed possible adjustments to these values with Agency staff. Expected annual cost increases vary year to year, ranging from 2.3 percent to 6.7 percent. Fluctuations in the increase of yearly expenses are due to anticipated cost increases associated with treatment of PFAS. PFAS are a group of man-made chemicals that includes perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), GenX, and many other chemicals. They are very persistent in the environment and in the human body, and can accumulate over time leading to adverse human health effects such as infant birth weights, immune system, cancer, and thyroid hormone disruption. February 22, 2021 the U.S. Environmental Protection Agency (EPA) announced that EPA will propose the Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) to collect new data on PFAS in drinking water and issue final regulatory determinations for PFOA and PFOS under the Safe Drinking Water Act (SDWA).

Through the financial planning process, the Ratepayer Advocate determined that the current O&M levels represent necessary system expenses. SCV Water makes every attempt to promote operational efficiency. Additionally, the merging of the three agencies has increased the economies of scale for customers. Operational efficiency will continue to increase as the Agency integrates further.

PAYGO

SCV Water estimates on average $19 million per year as a minimum requirement for PAYGO cash; the rate funded capital projects, during the study period. If the proposed rate adjustments are not undertaken during the study period, SCV Water will not be able to complete the essential PAYGO capital projects by the third year, FY 2023-24, as the fund will start exhausting for the remaining years. Figure 7 shows funding available for PAYGO capital expenses with and without revenue adjustments.

Figure 7. Cash Available for PAYGO with and without Revenue Adjustments



Reducing the total CIP expenses will have negative impact on the reliability of the water system in the long-term. Proper levels of outlays to repair or replace current system infrastructure insures the smooth day-to-day operation of the water system and could reduce overall costs in the long-run, as it prevents catastrophic and emergency system failures, which would most likely require greater expense. After reviewing the proposed plan, the Ratepayer Advocate believes that the capital plan represents the best value to current customers, and agrees with the funding levels developed for the rate study.

Debt Service

Consistent with the Facility Capacity Fee Study published in 2020, the Agency carefully separated the debt service obligations into two categories based on the use of the proceeds: repairs and replacements or future expansion project costs. The debt service obligations that are currently allocated to the existing customers and included in this rate study are shown in Table 5. The percentages of allocation shown in the table represent the portion of the debt service obligations allocated to the current customers.

Table 5. Current Debt Obligations

Current Debt Service	Total Outstanding Principal	% Allocated to Current Customers	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1999A CAB Series	$23,408,500	22.60%	$2,355,347	$2,355,348	$2,355,348	$2,355,348	$2,355,348
Tax-Exempt Refunding Series 2010 A	$30,130,000	12.30%	$177,520	$465,340	$408,606	$415,786	$136,530
Taxable Refunding Series 2015 A	$63,880,000	37.30%	$4,304,206	$3,425,440	$3,591,631	$3,574,905	$4,410,167
Taxable Refunding Series 2016 A	$60,245,000	41.50%	$414,465	$414,465	$414,465	$414,465	$414,465
Tax-Exempt Series 2020 A	$30,130,000	76.00%	$1,528,838	$1,528,838	$1,528,838	$1,528,838	$1,528,838
Total Current Debt Service	**$207,793,500**		**$8,780,376**	**$8,189,430**	**$8,298,887**	**$8,289,342**	**$8,845,347**

The Agency plans to issue additional loans to pay for major infrastructure projects during the study period. SCV Water determined that a portion of the CIP plan should be funded by debt issuance. It is often prudent rate setting practice to develop debt issuances that can spread the costs of capital expenses among current and future customers who will all benefit from the facility. According to the AWWA M1 "An advantage of using long-term debt to fund major capital expenditures is that it results in a better matching of customers' charges with the use of the facilities so that existing customers will not be paying 100 percent of the initial cost of facilities that will be used for many years." Additional debt issuances for the study period are presented in Table 6.

Table 6. Future Debt Obligation

Future Debt Service	Total Loan Amount	% Allocated to Current Customers	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
PFAS Bank Note	$19,615,000	100.00%	$49,038	$196,150	$196,150	$0	$0
SRF Loan	$34,744,729	100.00%	$0	$0	$0	$1,498,532	$1,498,532
Bond 2023	$50,000,000	70.00%	$0	$0	$3,401,558	$3,401,558	$3,401,558
Bond 2025	$75,000,000	70.00%	$0	$0	$0	$0	$1,701,337
Total Future Debt Service	**179,359,729**		**$49,038**	**$196,150**	**$3,597,708**	**$4,900,089**	**$6,601,427**

The interest expense projection was estimated using historical data published by the US Department of Treasury[1] and the Federal Reserve[2]. Annual projected payments (including principal and interest) for the proposed 2023 Bond are $4.9 million and annual payments for the 2025 bond total $2.4 million. The Ratepayer Advocate supported the Agency staff to project bond expense and concurred that these are a reasonable assumption based on the currently available data. The Ratepayer Advocate also determined that the proposed debt issuances benefit the current customers as they disburse the cost of capital expenses through time and that the future customers who benefit from these facilities will contribute over time as they join the system. This is consistent with AWWA recommendations.

Additionally, the customers of SCWD and VWD have a series of Legacy Debt payments which cannot be funded through general rates. These balances constitute the basis of a non-rate component which will be billed to customers of the respective agency until those debts are paid off. **Legacy Debt payments will be made by revenue generated from pass-through charges by directly applying to the scheduled payments. This debt must be paid by those customers to whom it corresponds, and will be tracked separately from the proposed financial plan and revenue adjustments**. Table 7 shows the Legacy Debt payments scheduled for the study period.

[1] High Quality Market Corporate Bond Yield Curve. Monthly Average Pare Yields, Percent (from 1984)
[2] Selected Average Majority Prime Rate Charged by Banks on Short-Term Loans to Business (from 2000)

Table 7. Legacy Debt Obligations for SCWD and VWD

	FY2021-22	FY2022-23	FY2023-24	FY2024-25	FY2025-26
SCWD Legacy Debt					
Taxable Refunding Series 2017	$5,498,842	$5,620,149	$5,743,865	$5,878,507	$6,008,323
Total Legacy Debt for SCWD	**$5,498,842**	**$5,620,149**	**$5,743,865**	**$5,878,507**	**$6,008,323**
VWD Legacy Debt					
2018 Interfund Loan	$976,975	$976,975	$1,618,038	$1,614,541	$1,614,706
VWD Acquisition Interfund Loan	$2,217,595	$2,217,595	$2,217,595	$2,217,595	$2,217,595
Total Legacy Debt for VWD	**$3,194,570**	**$3,194,570**	**$3,835,633**	**$3,832,136**	**$3,832,301**

Reserves

Prudent fiscal management requires that the Agency maintains reserve balances to meet working capital requirements, meet unexpected increases in costs and provide for emergencies. Currently, SCV Water maintains five reserve funds; Capital Reserve, Emergency/Disaster Reserve, Operating Reserve, Revenue Rate Stabilization Reserve, and Water Supply Reliability Reserve. Capital Reserve is where the PAYGO cash is kept and the primary financial goal of the Agency for this study is to maintain the available cash balance of $19 million per year on average.

- Capital Reserve – sufficient PAYGO cash
- Emergency/Disaster Reserve – 120 days of operating expenses
- Operating Reserve – 120 days of operating expenses and 120 days of debt service payments
- Revenue Rate Stabilization Reserve – 20 percent of annual operating revenue
- Water Supply Reliability Reserve – total costs of 1 year of water extraction

The total reserve target is $126 million and the Agency currently meets this target. When evaluating the reserve targets set by SCV Water staff, the Ratepayer Advocate relied on guidance contained within the AWWA white paper *Cash Reserve Policy Guidelines*[3], which does not espouse a "one size fits all" approach to reserve design, "but instead identifies and provides guidance on the key considerations for utilities to assist in the development of appropriate reserve policies for their unique systems." The Ratepayer Advocate determined that the reserve policies adopted by SCV Water are carefully crafted and align with the guidance provided by the AWWA; therefore represent an acceptable target reserve level. Ratepayers benefit from these reserves because they reduce the risk of discontinued services at the time of catastrophic events. The Agency will be able to maintain the balance during the study period without additional contributions made from rates.

Revenue Analysis

Revenues were calculated for the next five years using the current rates and projected demand discussed in the Demand Projections section. There were three distinct types of revenues identified in the rate study process; rate

[3] 2018. AWWA Rates & Charges Committee

revenue, other operating revenue, and non-operating revenue. Other operating revenue and non-operating revenue are generally used to offset the total revenue requirements, resulting in a lower rate revenue requirement (the amount of revenues that need to be collected from customer rates).

- **Rate revenues**: revenues from variable charges and revenues from fixed charges
- **Other operating revenues**: miscellaneous revenues such as late fees, disconnection charges, and service connection fees
- **Non-operating revenues**: one-percent tax revenues, communication and rental income, investment revenues, settlement agreement revenues, grants and reimbursements, reimbursement from annexing parties, one-time water sakes, use of capacity

Table 8 displays the projected revenues by type for the study period. SCV Water projected a decline in non-operating revenues which includes a complete cessation of revenues from the settlement agreement in FY 2022-23 and an end to grants and reimbursements in FY 2023-24. The Ratepayer Advocate reviewed all of the assumptions made to arrive at the values presented in the rate model and found them to be based on a sound understanding of water system revenues. The amounts shown in this table are not yet adjusted with the proposed revenue increases. The purpose of the revenue analysis is to find revenue deficiency, thus the projected revenues are estimated based on the status quo financial condition.

Table 8. Projected Revenues by Type

	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Revenues from Rates					
Fixed Service Charge Revenue	$23,850,110	$24,163,340	$24,483,224	$24,808,448	$25,140,078
Variable Charge Revenue	$52,362,773	$52,478,858	$52,596,976	$53,248,242	$53,908,498
Rate Revenue Total	**$76,212,883**	**$76,642,198**	**$77,080,200**	**$78,056,689**	**$79,048,576**
Other Operating Revenue	**$3,999,700**	**$4,049,697**	**$4,100,394**	**$4,151,802**	**$4,203,932**
Non-Operating Revenues					
1% Property Tax Revenues	$16,417,976	$16,647,957	$17,597,295	$18,411,491	$19,125,930
Miscellaneous Revenue	$12,141,255	$8,264,722	$3,720,933	$3,786,708	$3,853,668
Total Non-Operating Revenue	**$28,559,231**	**$24,912,679**	**$21,318,227**	**$22,198,199**	**$22,979,598**
Total	**$108,771,814**	**$105,604,574**	**$102,498,821**	**$104,406,690**	**$106,232,107**

Use of one-percent property tax revenues

The Agency collects a one-percent property tax annually and uses part of the revenue to offset revenue deficiencies in the facility capacity charge revenues. Agency staff estimated between six and seven million dollars per year will be collected from facility capacity charges while the debt service payments for the new developments and expansions are estimated to be approximately $18 million per year. Property tax revenue is also used to pay for public fire protection service expenses to the amount of approximately $0.2 million per year. After facility capacity fee and public fire protection service shortfalls were calculated, the remaining property tax revenues

total $16 to $19 million for the projected years. The available tax revenue will be used to offset the total revenue requirements. Table 9 shows the use of one percent property tax.

Table 9. Use of 1 Percent Property Tax Revenues

Description	FY2021-22	FY2022-23	FY2023-24	FY2024-25	FY2025-26
1% Property Tax Revenues	$27,934,798	$28,588,472	$29,257,443	$29,942,067	$30,642,711
FCF Revenues	$6,300,000	$6,457,500	$6,618,938	$6,784,411	$6,954,021
Debt Service Allocated to Future Users	($17,656,361)	($18,231,366)	($18,106,210)	($18,129,290)	($18,271,362)
Public Fire Protection Service	($160,462)	($166,650)	($172,875)	($185,696)	($199,441)
Available 1% Prop Tax Revenues	**$16,417,976**	**$16,647,957**	**$17,597,295**	**$18,411,491**	**$19,125,930**

Revenue Requirements

Figure 8 shows how revenue adjustments are determined in the rate setting process. Most water agencies achieve their financial target by the final year of the study period instead of making all necessary adjustments in the first year which lessens the initial rate impact on customers.

Figure 8. Revenue Adjustments Calculation Method

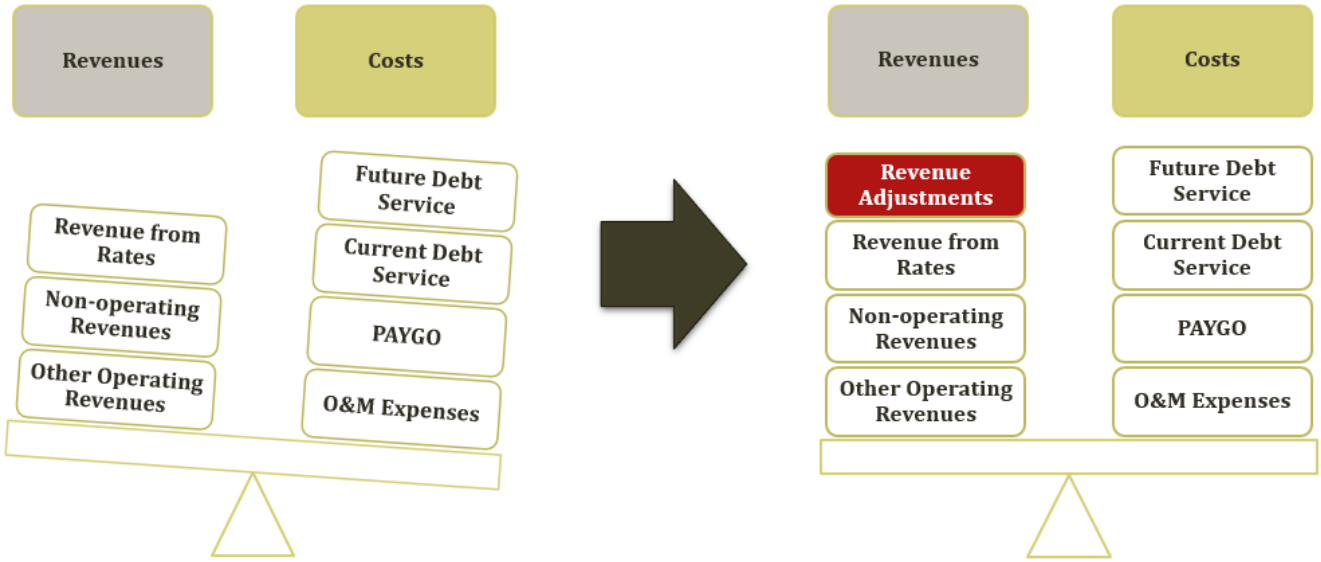


Table 10 shows additional revenues needed to generate from water sales to meet Agency's financial target by FY 2025-26. The Ratepayer Advocate proposed no revenue adjustments for the test year since all three agencies will need to restructure their rates for unification and some customers are expected to have considerable rate impact from that change. To mitigate overall rate impact on customers, the revenue adjustments will not be made for the test year, but followed by 6.5 percent annual adjustments starting FY 2022-23 and continue through the remaining study period. The adjustments presented in Table 10 represent caps of increases (the maximum adjustments the Agency can make over the course of the five-year study period). The Ratepayer Advocate recommends the Agency to review and reevaluate annually and determine an appropriate rate adjustment for each year based on the revised revenue adjustments.

Table 10. Proposed Revenue Adjustments by Year

Description	FY2021-22	FY2022-23	FY2023-24	FY2024-25	FY2025-26
Water Sales - Existing	$76,212,883	$76,642,198	$77,080,200	$78,056,689	$79,048,576
Year 1 - 0 %	$0	$0	$0	$0	$0
Year 2 - 6.5 %		$4,981,743	$5,010,213	$5,073,685	$5,138,157
Year 3 - 6.5 %			$5,335,877	$5,403,474	$5,472,138
Year 4 - 6.5 %				$5,754,700	$5,827,827
Year 5 - 6.5 %					$6,206,635
Water Sales	**$76,212,883**	**$81,623,940**	**$87,426,290**	**$94,288,549**	**$101,693,334**

Table 11 shows the rate revenue requirements calculation based on the proposed revenue adjustments. Rate revenue requirements should match with the proposed water sales in Table 10.

Table 11. Financial Plan and Rate Revenue Requirements for FY 2021-22 – FY 2025-26

Line	Description	FY2021-22	FY2022-23	FY2023-24	FY2024-25	FY2025-26
A	O&M Expenses	$77,422,023	$81,695,597	$84,919,394	$88,956,379	$94,950,263
B	Debt Service	$8,829,414	$8,385,580	$11,896,595	$13,189,431	$15,446,774
C	Capital PAYGO	$22,520,377	$20,505,140	$16,028,922	$18,492,738	$18,479,826
D	Other Operating Revenues	($3,999,700)	($4,049,697)	($4,100,394)	($4,151,802)	($4,203,932)
E	Non-operating Revenues	($28,559,231)	($24,912,679)	($21,318,227)	($22,198,199)	($22,979,598)
F	**Revenue Requirements**	**$76,212,883**	**$81,623,940**	**$87,426,290**	**$94,288,549**	**$101,693,334**

The formula to calculate revenue requirements is as follows:

$$(A+B+C) – (D+E) = F$$

The proposed financial plan was determined to provide the highest level of service for customers while minimizing the rate impact. This result was achieved by efficient O&M and capital planning which included the use of reserves, tax revenues, and bond issuances to mitigate financial impact on customers. The Ratepayer Advocate reviewed all assumptions and worked with SCV Water staff to produce accurate and economically rigorous revenue and expense projections. Ultimately, this financial plan will continue the high level of service that SCV Water is known for as well as increase the opportunities for costs savings in the long-run through increased customer integration.

Cost of Service Analysis

The purpose of a Cost of Service (COS) analysis is to allocate costs among customers commensurate with their service requirements. SCV Water employed the "base-extra capacity" cost-of-service method promulgated in AWWA's M1, whereby costs are first allocated to individual functions, which are typical industry standard activities, then the costs of each functions are distributed to appropriate cost causative components, which are defined by the cost driving elements. The results of the COS form a reasonable, equitable, basis for designing rates. Figure 9 displays a typical flow of a process for the COS analysis.

Figure 9. A typical Flow for Cost of Service Analysis Process

Operating costs were functionalized based on input from Agency staff with expertise on the system and utility industry knowledge. Total capital expense for the study period, which includes PAYGO and debt funded capital projects, was utilized in the analysis as opposed to capital project expense for the test year since a single year of capital spending may not capture accurate distribution of the necessary CIP costs to repair/rehabilitate system assets. The Ratepayer Advocate reviewed the functional categories and ensured that they met AWWA guidelines. The functions of the system for both operating and capital expenses include:

- **Source of Supply** – costs associated with water supply such as chemicals, power, water purchase costs
- **Pumping and Wells** – costs associated with general pumping, maintenance and repair of wells, and energy use
- **Water Quality and Treatment** – costs associated with treatment of water
- **Transmission, Distribution, and Maintenance** – costs associated with transmitting and distributing water to customers
- **Engineering** – costs associated with engineering and inspection labor
- **Customer Accounts** – costs associated with customer related functions
- **Administrative and General** – costs associated with administrative and general functions
- **Water Resources** – costs associated with public outreach, water acquisition, and reporting

Table 12 shows the test year O&M expenses distributed into the system functions.

Table 12. Functionalization of Operating & Maintenance Costs FY 2021-22 (Test year)

O&M Function	FY 2021-22
Source of Supply	$7,501,112
Pumping & Wells	$15,785,709
Water Quality & Treatment	$6,964,324
Transmission, Distribution & Maintenance	$12,345,787
Engineering	$3,320,355
Customer Accounts	$2,793,157
Administrative and General	$20,941,865
Water Resources	$7,769,713
Total	**$77,422,023**

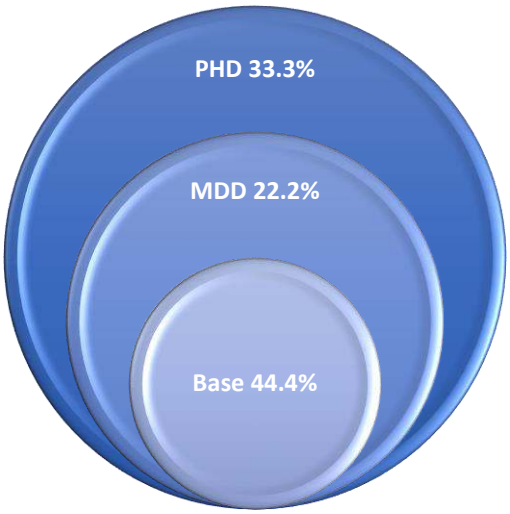
According to the AWWA, for a water system to provide adequate service to its customers at all times, it must be capable of meeting not only the annual volume requirements, but also the peak demand - the maximum rate at which water is consumed. Therefore, the capacities of the various facilities must meet the maximum coincidental demand of all customers. Following cost allocation into the functional categories listed above, each functional cost was then distributed amongst cost causative components based on the designed capacity of each facility. Seven cost causation factors commonly used in COS analysis were used by SCV Water:

- Water Supply – water purchase costs, chemicals, pumping costs
- Base – delivering water to customers under average demand conditions
- Maximum Day Demand (MDD) – the costs of delivering water to customers on the day with the highest demand
- Peak Hourly Demand (PHD) – the costs of delivering water to customers in the hour with the highest demand on the highest day
- Meters - the costs of servicing meters
- Customer Service – billing and other customer service-related costs
- Fire Protection – the costs of providing water service for public and private fire protection services

Each water service facility designed solely to meet average daily demand (Base) should have 100 percent of its cost assigned to the base cost component. Facilities designed to meet the extra demand requirements should be assigned to MDD and PHD. Depending on the basis of infrastructural design and type of services the functionalized costs should be distributed to applicable cost components.

Since daily production data was not available, the methodology approved by the AWWA for calculating the MDD is used; maximum month demand divided by days in the month. PHD was calculated by multiplying MDD by a peaking factor of 1.5 (the lowest factor recommended by the State Board's Division of Drinking Water). Accordingly, the costs associated with a function which requires extra capacity service requirements (typically distribution systems and storages) were distributed to the base, MDD, and PHD cost components for 44.4%, 22.2%, and 33.3%, respectively.

Figure 10. Base, MDD, PHD Calculation



The number of bills in one year (the number of accounts multiplied by 12) serves as the basis for distributing billing and customer service costs such as meter reading, customer billing, and other customer service related costs. The number of equivalent meters is used to measure meter related service costs.

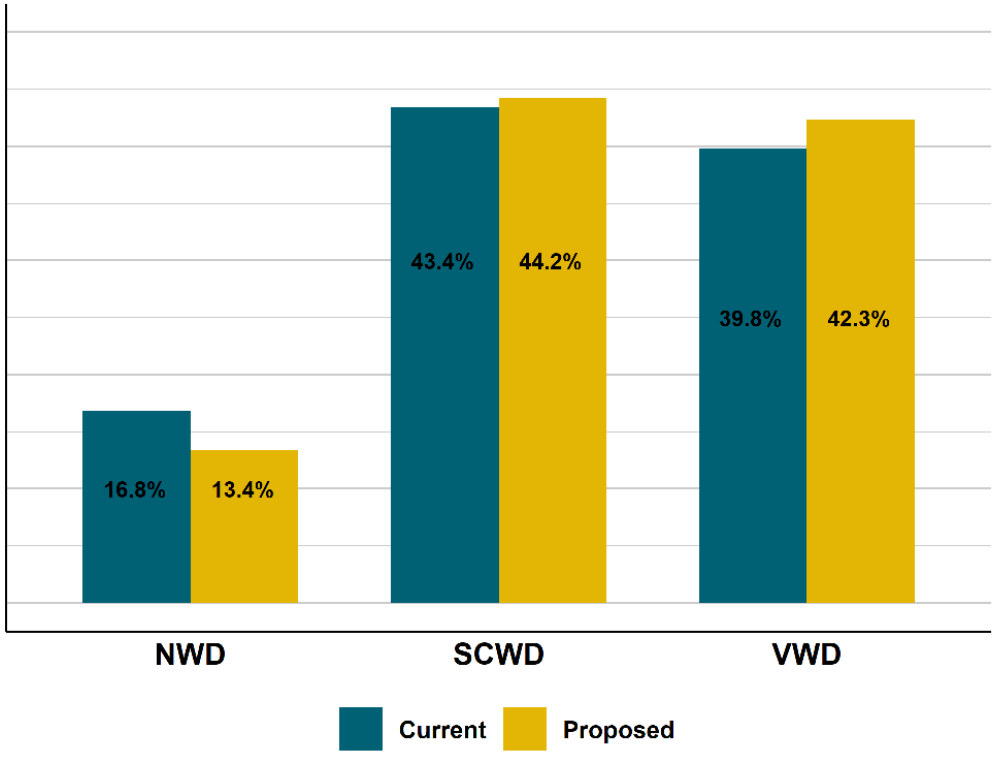
After the O&M expense and capital costs were allocated by cost causation factors and the nature of the costs had been identified (fixed or variable). The results show that 72 percent of test year costs are fixed and the remaining 28 percent are variable costs.

Table 13. Cost Allocation by Cost Causative Components, and by Fixed vs. Variable

		Fixed							Variable			
Cost Allocation Summary	**Cost of Service**	**Source of Supply**	**Base**	**MDD**	**PHD**	**Meters**	**Customer Service**	**Fire Protection**	**Source of Supply**	**Delivery**	**MDD**	**PHD**
Source of Supply	$32,941,760	$11,759,992	-	-	-	-	-	-	$21,181,768	-	-	-
Base	$35,316,536	-	$35,168,670	-	-	-	-	-	-	$147,865	-	-
Max Day	$13,947,490	-	-	$13,880,658	-	-	-	-	-		$66,832	-
Max Hour	$13,996,206	-	-	-	$13,996,206	-	-	-	-	-	-	$0
Meters	$4,724,906	-	-	-	-	$4,724,906		-	-	-	-	-
Customer Service	$7,722,306	-	-	-	-	-	$7,722,306	-	-	-	-	-
Fire Protection Service	$122,612	-	-	-	-	-	-	$122,612	-	-	-	-
Total Revenue Requirements	$108,771,814	$11,759,992	$35,168,670	$13,880,658	$13,996,206	$4,724,906	$7,722,306	$122,612	$21,181,768	$147,865	$66,832	$0
% Distribution		11%	32%	13%	13%	4%	7%	0%	19%	0%	0%	0%
Net Balance Adjustment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Operating Revenues	($3,999,700)	($1,701,805)	($1,151,708)	($520,544)	($406,379)	($28,266)	($186,410)	($4,588)	$0	$0	$0	$0
Non-operating Revenues	($28,559,231)	$0	($11,863,757)	($3,526,736)	($5,584,295)	($3,805,885)	($3,747,772)	($30,787)				
Revenue Requirements for Rates	$76,212,883	$10,058,187	$22,153,206	$9,833,378	$8,005,532	$890,755	$3,788,124	$87,237	$21,181,768	$147,865	$66,832	$0
Unit of Service (Fixed and Variable Combined)		25,617,472	25,617,472	35,713	56,077	108,417	913,743	-	25,617,472	25,617,472	35,713	56,077
Unit Cost		$0.39	$0.86	$275.34	$142.76	$8.22	$4.15	$87,236.72	$0.83	$0.01	$1.87	$0.00

The results of the COS analysis also indicated that the current share of revenue recovery from each of the three divisions need to be adjusted to achieve equity. Figure 11 displays the share of revenue recovery under the current rates vs. proposed rates by division. For example, the revenue generated from the Newhall customers' current rates represents 16.8 percent of total revenue; however, the result of the new COS analysis suggests that 13.4 percent of total revenue should be collected from Newhall customers to ensure equitability across all divisions.

Figure 11. Share of Revenue Recovery by Division, Current vs. Proposed



The Ratepayer Advocate reviewed all COS assumptions used in the rate analysis and determined that the methods were consistent with rate setting practice as outlined by the AWWA M1 manual. The proposed COS analysis will improve customer equity by distributing costs fairly among all customers via unified rates.

Rate Design

The final step of a rate study is designing rates. Rates must be designed to equitably recover the rate revenue requirements from each customer given the projected customer demand identified as a result of the COS analysis. In reviewing the Agency's proposed water rates, the Ratepayer Advocate used the following criteria:

1) Ensure revenue sufficiency: rates should recover the costs of services to ensure that the Agency continues to provide safe and quality services to their customers
2) Minimize rate impacts: while rates are calculated to generate sufficient revenue to cover all costs, they should be designed to minimize, as much as possible, financial impacts on all customers across the board
3) Be equitable: rates should be proportionally allocated among all customers based on their demand characteristics and service requirements
4) Be practical: rates should be simple in form and, therefore, adaptable to changing conditions, easy to administer, and easy to understand.

SCV Water uses a uniform variable rate, which is a constant unit price for all metered volumetric units of water used. The AWWA M1 addresses some concerns about applicability of designing a uniform rate to all water

customers since potential cost of service differentials are harder to recognize unless each customer class has its own uniform rate that reflects their service requirements. AWWA M1 states that utilities might consider a uniform rate for all customers when:

- customer groups or service classes exhibit similarities in usage (demand) characteristics,
- varying rates by customer or service classification are undesirable from equitability or other perspectives,
- simplicity and customer understanding of the rate structure are valued highly,
- rate uniformity adequately addresses economic efficiency and conservation concerns,
- rate structures that vary charges by usage block or other means are not justifiable, or
- cost and usage data by customer or service classifications are not available or too costly to develop[4]

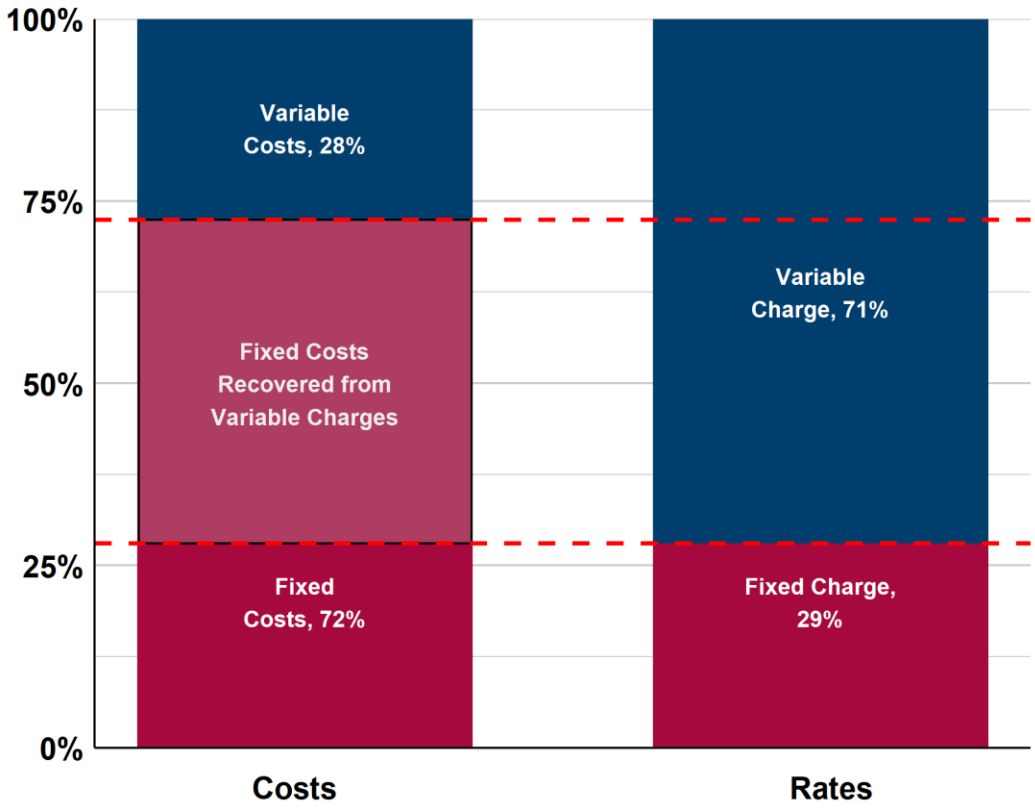
The Ratepayer Advocate recommends the Agency to consider designing rates that reflect unique service requirements specific to each customer class in the future rate study to further improve equity among all customers.

Fixed Charge vs. Variable Charge

A fixed monthly service charge is the minimum bill a customer will be charged regardless of the volume of water use. One of the most common practices in the rate making to maintain financial stability is to increase the portion of revenues recovered by fixed charges when designing rates. Variable charges are the portion of rates that vary based on the amount of water use. Higher variable charges discourage wasteful use by sending customers a price signal. Generally speaking, a higher fixed charge indicates a higher bill for small users and a lower fixed charge indicates a higher bill for larger users. SCV Water's current fixed costs represent 72 percent of total costs. Although it promotes revenue stability to collect all fixed costs from fixed charges, higher fixed charges are deemed to create unreasonable financial burden on some customers. It is a common rate making practice to collect portion of fixed costs from variable charges in order to mitigate rate impacts and promote conservation. Figure 12 shows the current distribution of fixed verses variable costs and proportion of revenue recovery from variable verses fixed charges. It shows that proportion of revenue recovery from variable and fixed charges is almost reversed from the distribution between fixed and variable costs. The current rates collect 69 percent of total rate revenue from variable charges and 31 percent from fixed service charges. The proposed rates will collect slightly more from the variable charge (71 percent) and slightly less from the fixed charges (29 percent).

[4] American Water Works Association, *Principles of Water Rates, Fees and Charges* (Seventh Edition, 2017), Chapter IV.2, 109

Figure 12. Distribution of Fixed vs. Variable Costs and Revenue Recovery by Fixed vs. Variable Charges



Proposed Rates

In the first year of the rate study all customers will move to a single set of rates; one uniform variable rate and a fixed monthly service charge that varies based on the meter size. A pass-through fixed Legacy Debt charge will be included in the bills of SCWD and VWD customers to comply with the terms of Senate Bill 634. NWD did not carry over any debt from pre-merger system; therefore there is no additional Legacy Debt charges for these customers.

There is no revenue requirements increase planned for the first year in the analysis. The rate adjustments are proposed to collect an additional 6.5% of revenues year-over-year for the subsequent four years. The proposed potable water rates, Legacy Debt charges, recycled water rates, and private fire protection charges for the study period are shown in Table 14 through Table 17 respectively.

Potable Water Rates

Table 14. Proposed Potable Water Rates

Fixed Monthly Service Charges					
Meter Size	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
3/4 in	$18.38	$19.58	$20.85	$22.21	$23.65
1 in	$27.87	$29.69	$31.62	$33.67	$35.86
1 1/2 in	$51.60	$54.96	$58.53	$62.33	$66.39
2 in	$80.08	$85.28	$90.83	$96.73	$103.02
2 1/2 in	$94.32	$100.45	$106.97	$113.93	$121.33
3 in	$146.52	$156.04	$166.18	$176.99	$188.49
4 in	$241.43	$257.13	$273.84	$291.64	$310.60
6 in	$478.72	$509.84	$542.98	$578.27	$615.86
8 in	$763.47	$813.09	$865.94	$922.23	$982.17
10 in	$1,095.67	$1,166.89	$1,242.74	$1,323.51	$1,409.54
12 in	$2,044.82	$2,177.74	$2,319.29	$2,470.04	$2,630.59
Variable Charge					
Per CCF	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
Potable Water	$2.09	$2.22	$2.37	$2.52	$2.68

Legacy Debt

A fixed legacy debt charge was included in the bills of SCWD and VWD because of stipulations included in SB 634. NWD did not carry over any legacy debt from prior operations. The Ratepayer Advocate recommended that those fixed charges and associated revenues should be considered as "a pass-through" since the charge does not apply to all customers, and the revenue collected from the charges is only used to pay off specific debts. A component of the monthly fixed service charge designed to pay for the Legacy Debt was estimated, and revenues generated from the component of the rates were removed from the revenue analysis calculation. To counterbalance this revenue, the scheduled Legacy Debt payments were excluded from the rate revenue requirements.

Table 15. Legacy Debt for SCWD and VWD, FY 2021-22 – FY 2025-26

Legacy Debt		
Meter Size	VWD	SCWD
5/8-in	$4.34	$6.80
3/4-in	$6.50	$10.20
1-in	$10.84	$17.01
1 1/2-in	$21.68	$34.02
2-in	$34.69	$54.42
2 1/2-in	$41.20	$64.63
3-in	$65.05	$102.05
4-in	$108.41	$170.08
6-in	$216.83	$340.15
8-in	$346.92	$544.24
10-in	$498.70	$782.35
12-in	$932.36	$1,462.65

Recycled Water Rates

Recycled water rates were computed by isolating the O&M expense and PAYGO cash requirements specific to the recycled water system. The monthly fixed service charges are identical to the potable water service; however variable charge was calculated to include following expenses for the test year:

- Recycled water system base operation costs: $103,000
- Purchased water costs: $100,790
- PAYGO for recycled water distribution system: $223,030

Total revenue requirements for the recycled water variable charge is $426,820. The unit of service for the test year is forecasted at 255,278 ccf. Calculation of the recycled water variable charge for the test year is as follows:

$$\$426{,}820\ (Reycled\ Water\ Revenue\ Requirements) \div 255{,}278\ ccf\ (Unit\ of\ Service) = \$1.67\ /ccf$$

The revenue requirements for the recycled water will be adjusted by 6.5 percent annually starting FY 2022-23.

Table 16. Recycled Water Sales forecast, cost of service, and variable rate charge

Fixed Monthly Service Charges					
Meter Size	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
3/4 in	$18.38	$19.58	$20.85	$22.21	$23.65
1 in	$27.87	$29.69	$31.62	$33.67	$35.86
1 1/2 in	$51.60	$54.96	$58.53	$62.33	$66.39
2 in	$80.08	$85.28	$90.83	$96.73	$103.02
2 1/2 in	$94.32	$100.45	$106.97	$113.93	$121.33
3 in	$146.52	$156.04	$166.18	$176.99	$188.49
4 in	$241.43	$257.13	$273.84	$291.64	$310.60
6 in	$478.72	$509.84	$542.98	$578.27	$615.86
8 in	$763.47	$813.09	$865.94	$922.23	$982.17
10 in	$1,095.67	$1,166.89	$1,242.74	$1,323.51	$1,409.54
12 in	$2,044.82	$2,177.74	$2,319.29	$2,470.04	$2,630.59
Variable Charges					
Per CCF	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
Recycled Water	$1.67	$1.78	$1.90	$2.02	$2.14

Fire Protection Service

Private fire protection service accounts are charged a fixed monthly charge based on its meter size. The costs allocated to these accounts include peaking costs calculated based on the fire service requirements (normally much greater than the peaking costs for regular water service) and customer/billing costs. In order to assess peaking costs that are required for fire services, the unit of service was calculated as follows:

- Fire service flow requirements: 2,000 gallons per minute (gpm)
- Fire service Max Day Demand (MDD): 2,000 x 60 minutes x 3 hours = 360,000 gpd (481 ccf)
- Fire Service Peak Hourly Demand (PHD): 2,000 x 60 minutes x 24 hours = 2,880,000 gpd (3,850 ccf)

Using the unit of service computed for the fire services, MDD cost and PHD cost are calculated at $133,416 and $480,952 respectively. These costs apply to both public fire (hydrants) and private fire protection services, thus the costs are allocated to each service using their equivalent meter counts. Other direct fire service costs are assumed mostly for the hydrant maintenance costs; therefore the costs are allocated to the public fire services. Meter and billing costs only apply to the private fire protection accounts; therefore, allocated only to those accounts.

The total fire service related cost amounted to $780,745 of which $620,283 was allocated to the private fire service accounts, representing 81 percent of total fire service costs. The remaining costs (19 percent) were allocated to the public fire protection service, and the Agency's one percent property tax revenue will be used to pay for the costs. Table 17 displays private fire service meter charges by meter size for all divisions.

Table 17. Private Fire Protection Charges

Private Fire Protection Charges					
Meter Size	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
3/4 in	$5.71	$6.08	$6.47	$6.90	$7.34
1 in	$6.29	$6.70	$7.14	$7.60	$8.10
1 1/2 in	$7.76	$8.26	$8.80	$9.37	$9.98
2 in	$9.51	$10.13	$10.79	$11.49	$12.24
2 1/2 in	$10.39	$11.07	$11.79	$12.55	$13.37
3 in	$13.61	$14.50	$15.44	$16.44	$17.51
4 in	$19.47	$20.73	$22.08	$23.52	$25.04
6 in	$34.10	$36.32	$38.68	$41.20	$43.87
8 in	$51.67	$55.03	$58.60	$62.41	$66.47
10 in	$72.16	$76.85	$81.85	$87.17	$92.83
12 in	$130.71	$139.21	$148.25	$157.89	$168.15
14 in	$192.19	$204.68	$217.98	$232.15	$247.24
16 in	$272.98	$290.73	$309.63	$329.75	$351.18
18 in	$433.70	$461.89	$491.91	$523.89	$557.94
20 in	$546.41	$581.92	$619.75	$660.03	$702.93

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3. BILL IMPACTS

Bill Impact analysis was one of the most critical technical jobs tasked to the Ratepayer Advocate by the Board members. The Ratepayer Advocate undertook the task to find the lowest possible rates using a data analytics approach. The rates we find will also generate sufficient revenue to cover all costs necessary for the Agency to continue providing safe and reliable services to its customers.

Bill Impact on Hypothetical Customers

The Ratepayer Advocate first performed a bill impact analysis for a hypothetical customer in the NWD's service area. The NWD's current variable charge is relatively high compared to that of other two divisions while fixed component of the monthly service charge is lower. The figure below reflects the change in the structure of proposed rates; showing the weight of revenues collected from variable charge is shifted to the fixed component of charge. The gap between the current and proposed rates in the monthly bill will become wider as the usage level goes up. For example NWD customers with a ¾ inch meter experience a slight increase in their bills up to 3 ccf of water use per month since the fixed charge has increased by $2.24 monthly for a ¾ inch meter. The proposed variable charge decreases by $0.77 per ccf, thus customers who use more than 4 ccf of water per month will see a decrease in their bill. All NWD customers with a 2 inch meter will see reduction in their bills regardless of their usage. The fixed charge for 2 inch meter will decrease by $5.96 under the proposed rates. Figure 13 and Figure 14 show the bill impacts on a hypothetical customer with ¾ inch and 2 inch meter by usage.

Figure 13. Bill Impact on NWD ¾" Meter Customers by Usage

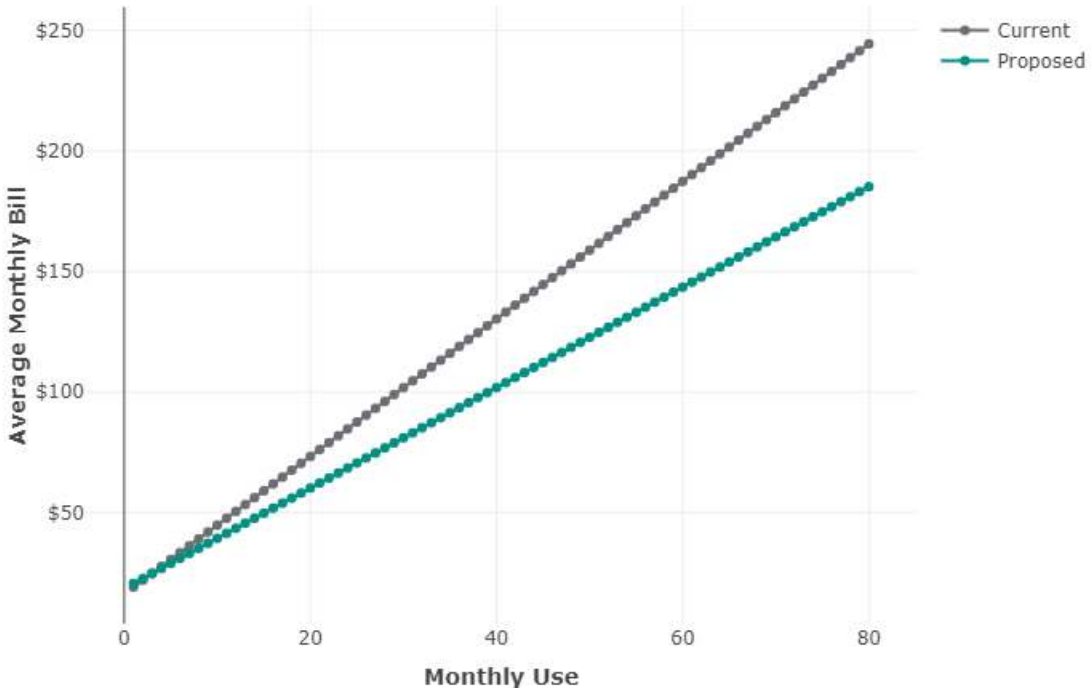
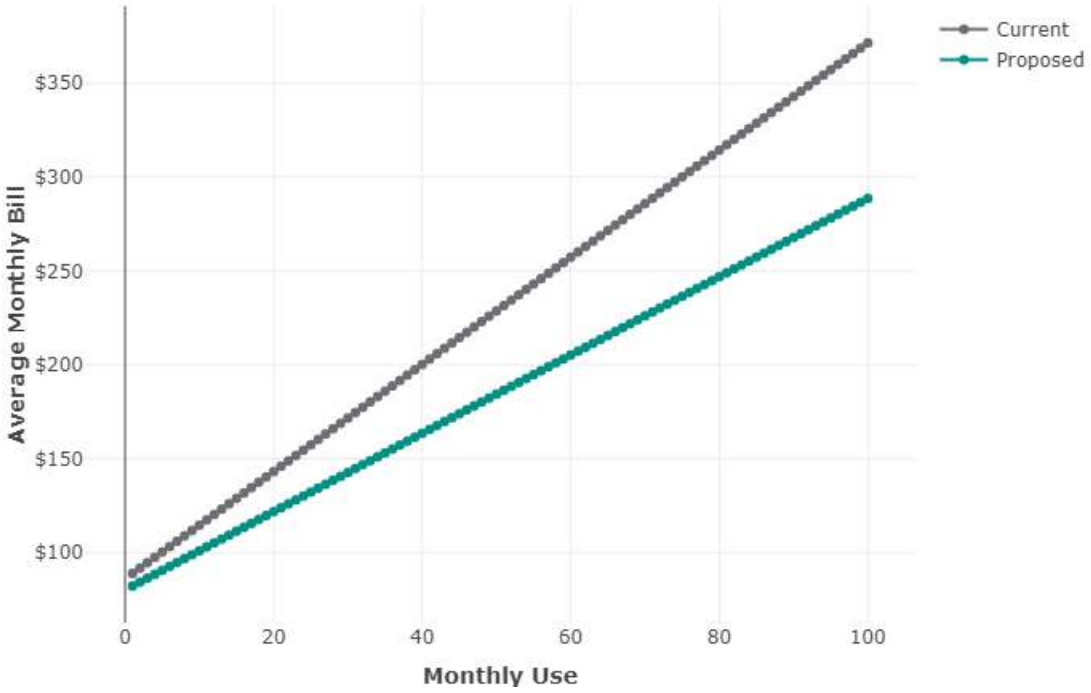


Figure 14. Bill Impact on NWD 2" Meter Customers by Usage



A hypothetical customer's bill impact analysis for SCWD customers is also performed comparing the current and proposed bills with a ¾ inch and a 2 inch meter. A customer with a ¾ inch meter will experience between -7.2 percent and 4.3 percent of bill impact in the first year. Customers who use up to 18 hcf per month will see a slight decrease in their bills while customers who use over 19 ccf and above will see a slight increase. The proposed fixed charge was reduced by $1.70 monthly for ¾ inch meter while 2 inch meter fixed service charge was raised by $0.94. The proposed variable charge increases by $0.10 per ccf for all SCWD customers. Figure 15 and Figure 16 show the bill impact on a hypothetical customer with a ¾ inch and 2 inch meter by usage. SCWD customers overall bill impacts are relatively small; 90 percent of total SCWD customers experience less than 2 percent or less bill impact in the first year.

Figure 15. Bill Impact on SCWD ¾" Meter Customers by Usage

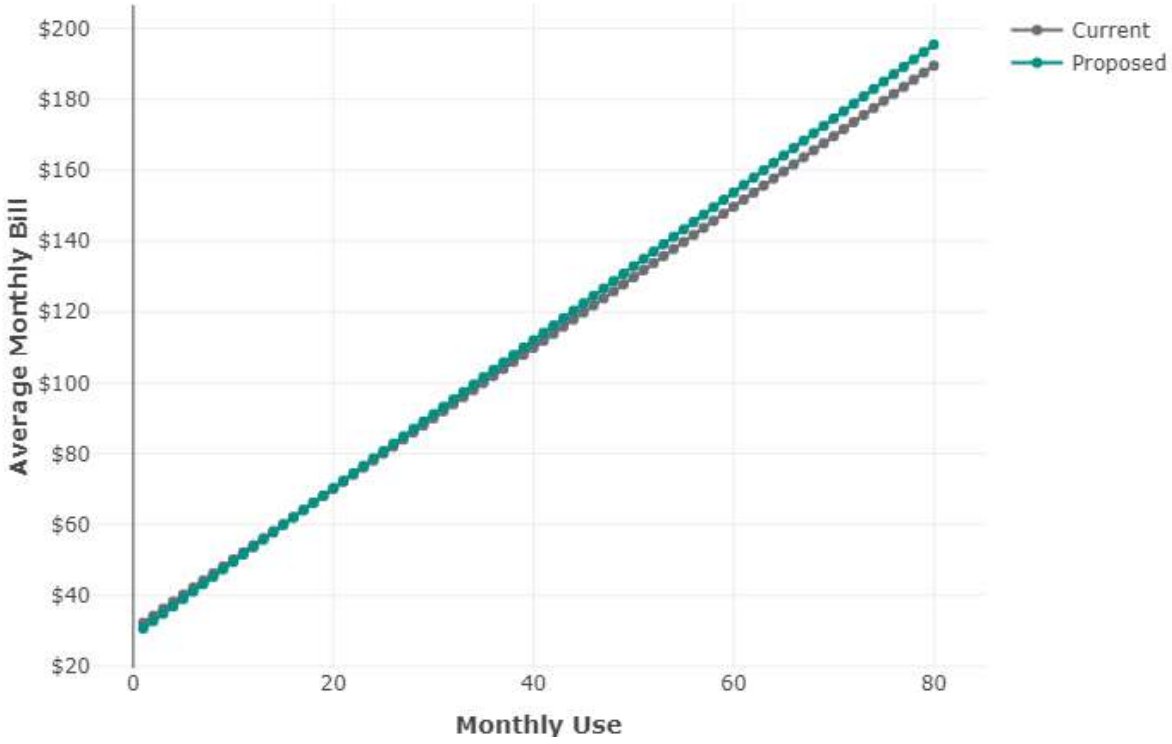
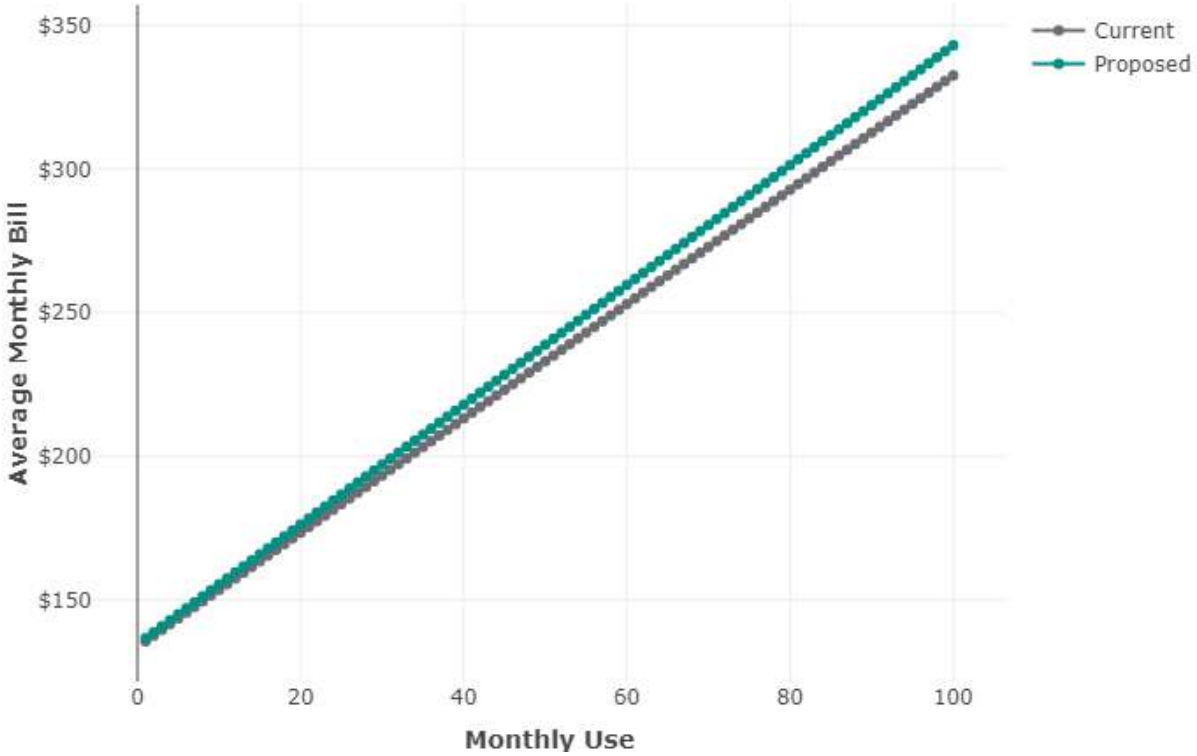


Figure 16. Bill Impact on SCWD 2" Meter Customers by Usage



A bill impact analysis for a hypothetical customer in the VWD's service area is also analyzed. The VWD's variable charge will increase by $0.25 per ccf while its fixed monthly service charge will decrease by $0.34 for a ¾ inch meter and $19.73 for a 2 inch meter. Overall bill impact on VWD customers is the greatest of all three divisions showing the median bill impact of 4.9 percent for the first year of the rate study. Figure 17 and Figure 18 show the bill impact on a hypothetical customer with a ¾ inch and 2 inch meter by usage.

Figure 17. Bill Impact on VWD ¾" Meter Customers by Usage

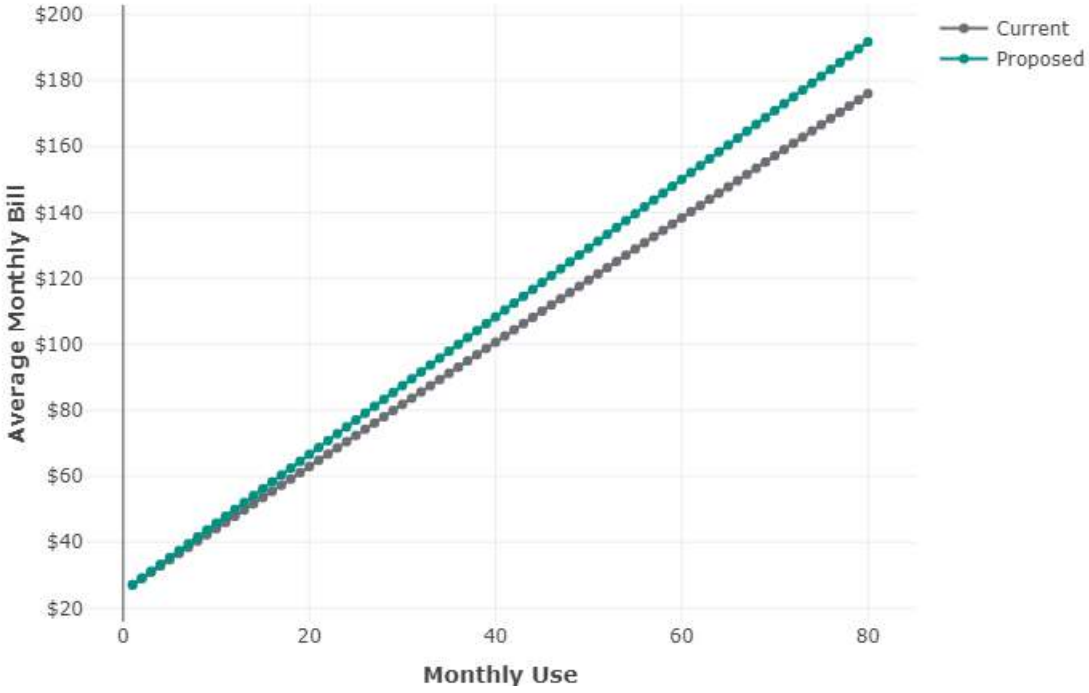
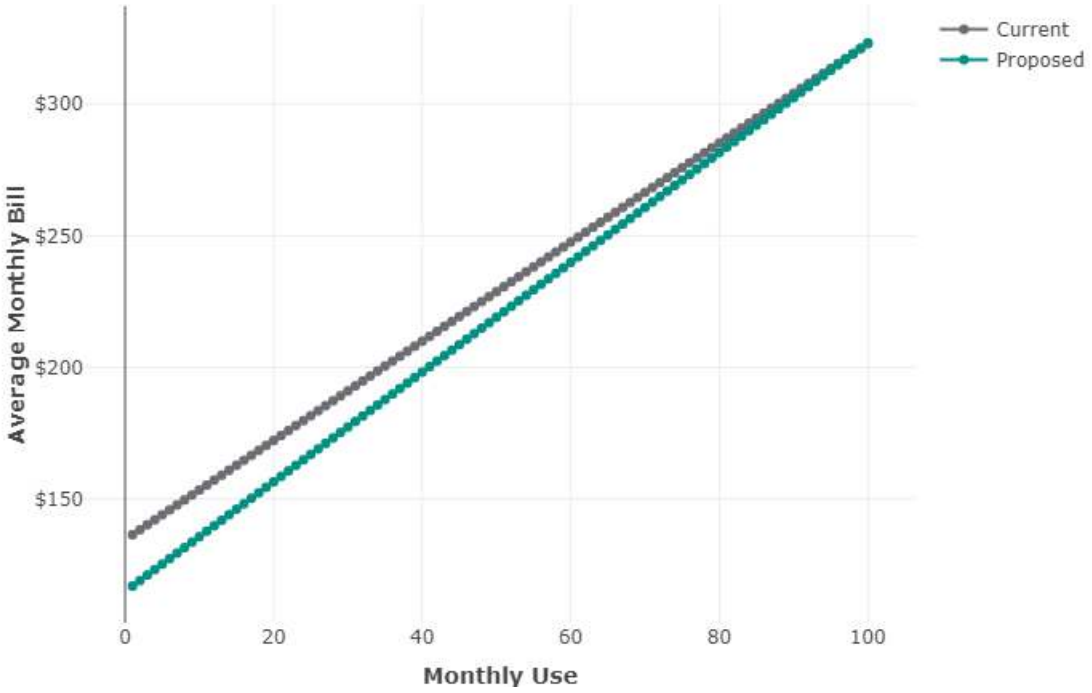


Figure 18. Bill Impact on VWD 2" Meter Customers by Usage



Annual Bill Impact on Actual Customers

Figure 19 and Figure 20 present annual bill impact on all customers of all three divisions with a ¾ inch meter. The majority of customers who experience over 10 percent rate increases are NWD customers with no usage or very small usage. This is due to the increase in the fixed charge for a ¾ inch meter. The actual dollar amount of the largest bill increase for NWD customers is $2.24 monthly.

Figure 19. Annual Bill Change – ¾" Meter – All Divisions

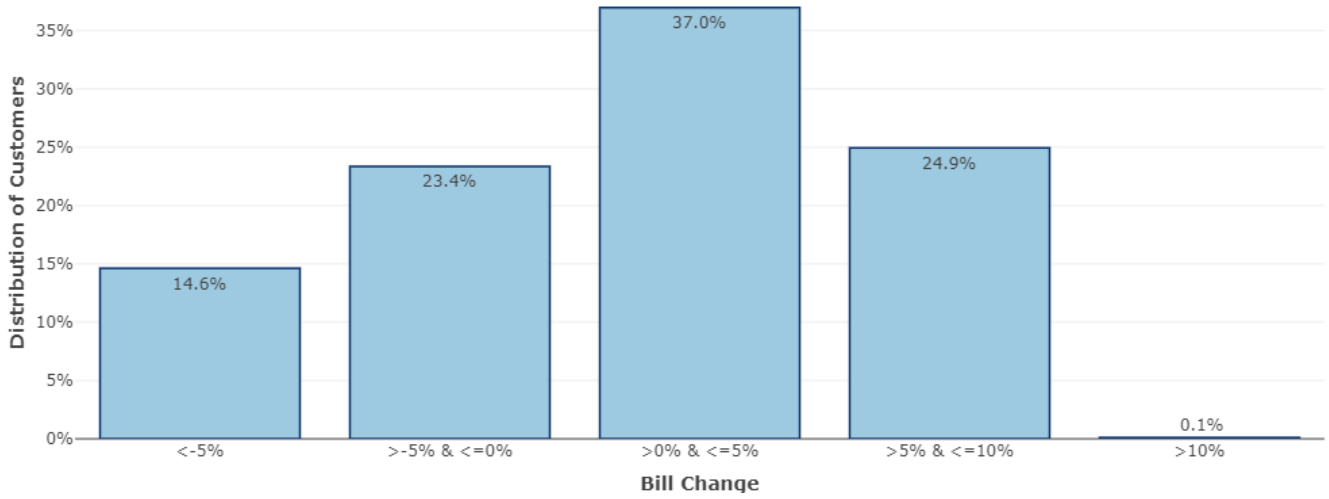


Figure 20. Annual Bill Change – ¾" Meter Customers – All Divisions

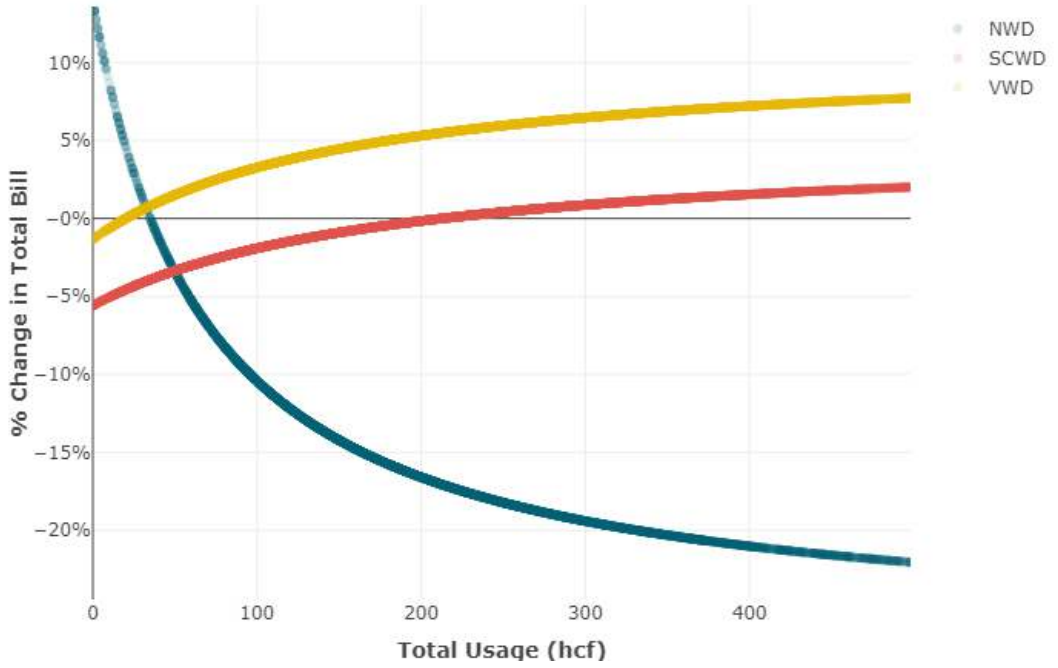


Figure 21 plots annual bill change displaying the range of bill impacts by division. Bill impacts on NWD customers with a ¾ inch meter range from -26.4 percent to 13.9 percent and the median bill impact is -16.6 percent. SCWD customer bill impacts range from -5.6 percent to 4.2 percent and the median impact is -0.3 percent. VWD customer bill impacts are between -1.3 percent and 10.5 percent; the median being 5.1 percent.

Figure 21. Annual Bill Change – ¾" Meter – All Divisions

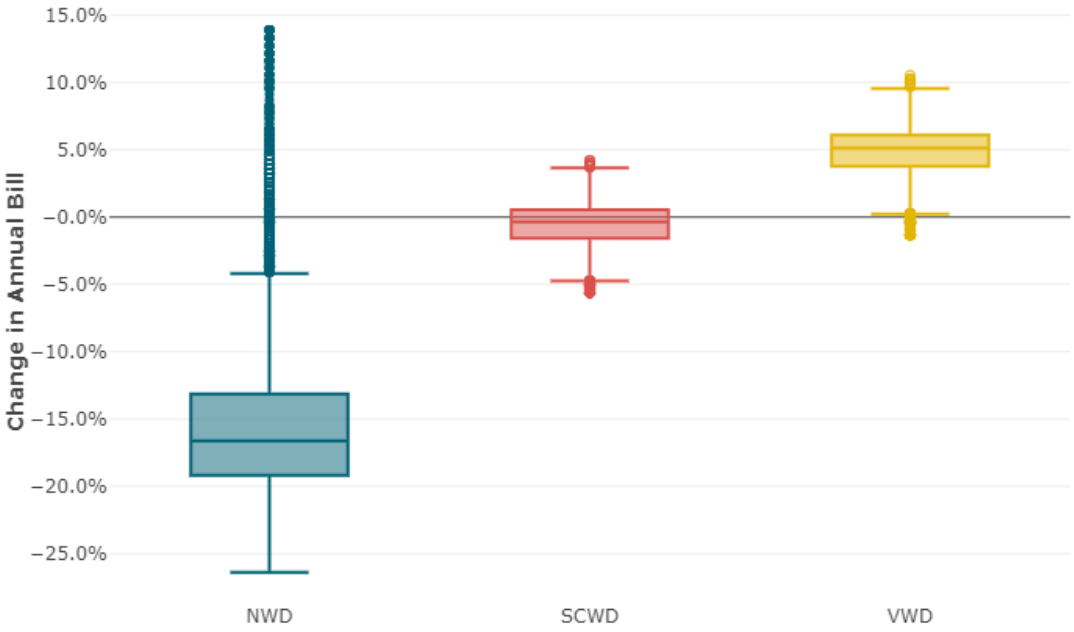


Figure 22 and Figure 23 present annual bill impact on all customers in all divisions with a 2 inch meter. Majority of customers with a 2 inch meter experience 5 percent or less bill impact. SCWD and NWD customers will most likely see a reduction in their bill while VWD customers will experience moderate increases on their bills.

Figure 22. Annual Bill Change – 2" Meter – All Divisions

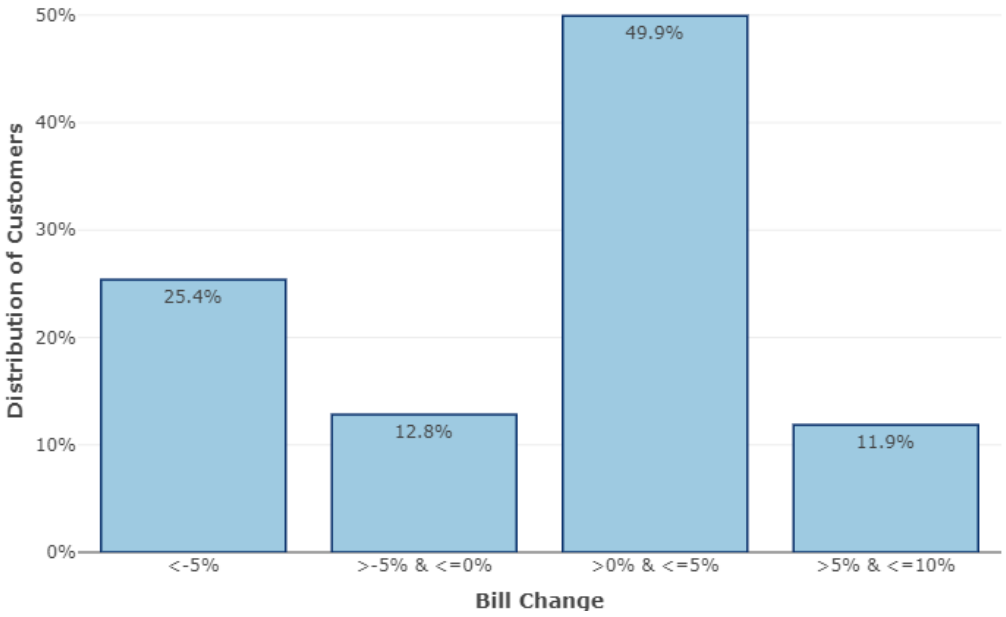


Figure 23. Annual Bill Change – 2" Meter Customers – All Divisions

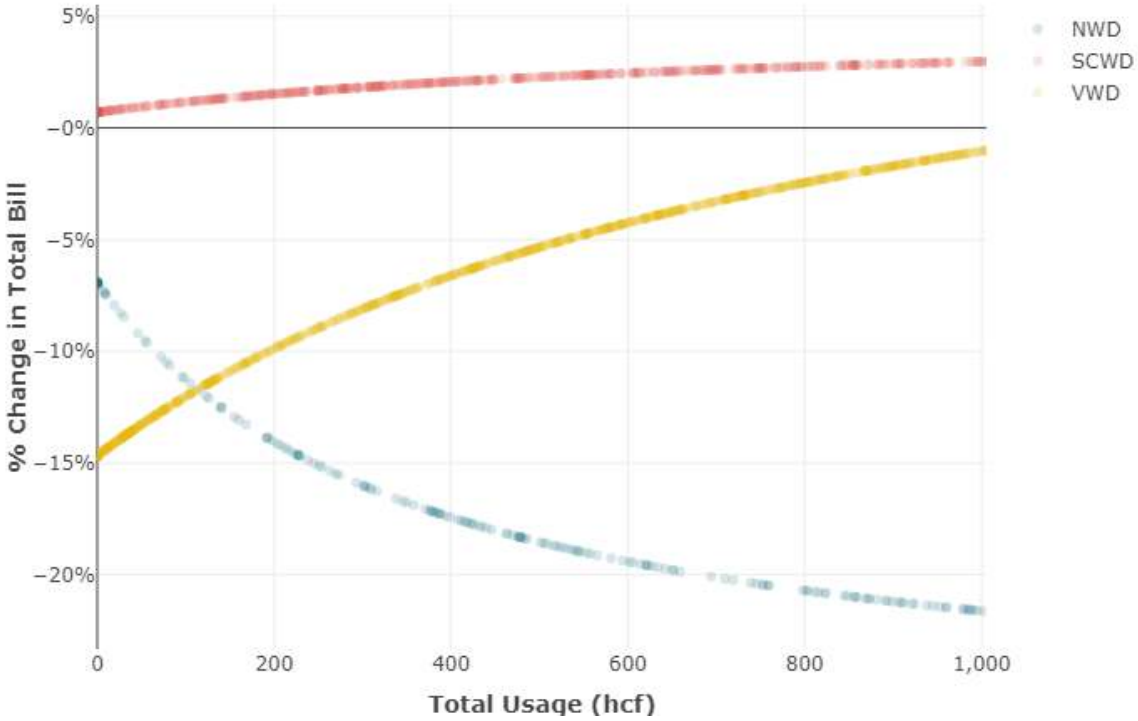
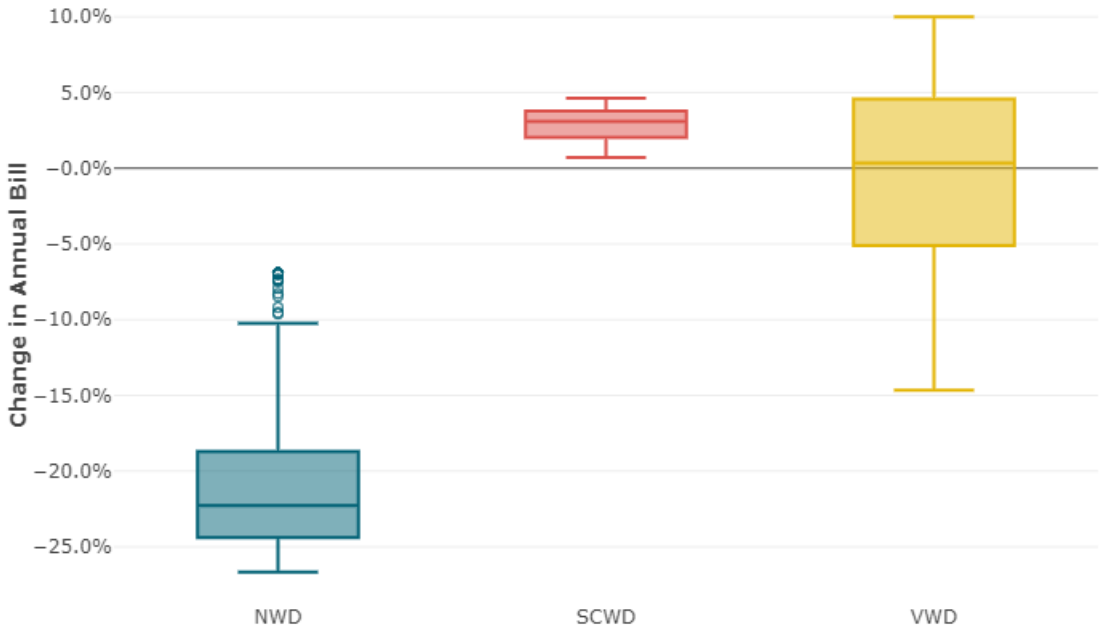


Figure 24 plots annual bill change displaying the range of bill impacts by division. Bill impacts on NWD customers with a 2 inch meter range from -26.7 percent to -6.9 percent and the median bill impact is estimated at -22.3 percent. SCWD customers bill impacts range from 0.7 percent to 4.6 percent while the median impact is 3.1 percent. VWD customers' bill impacts are between -14.7 percent and 10 percent, the median being 0.3 percent.

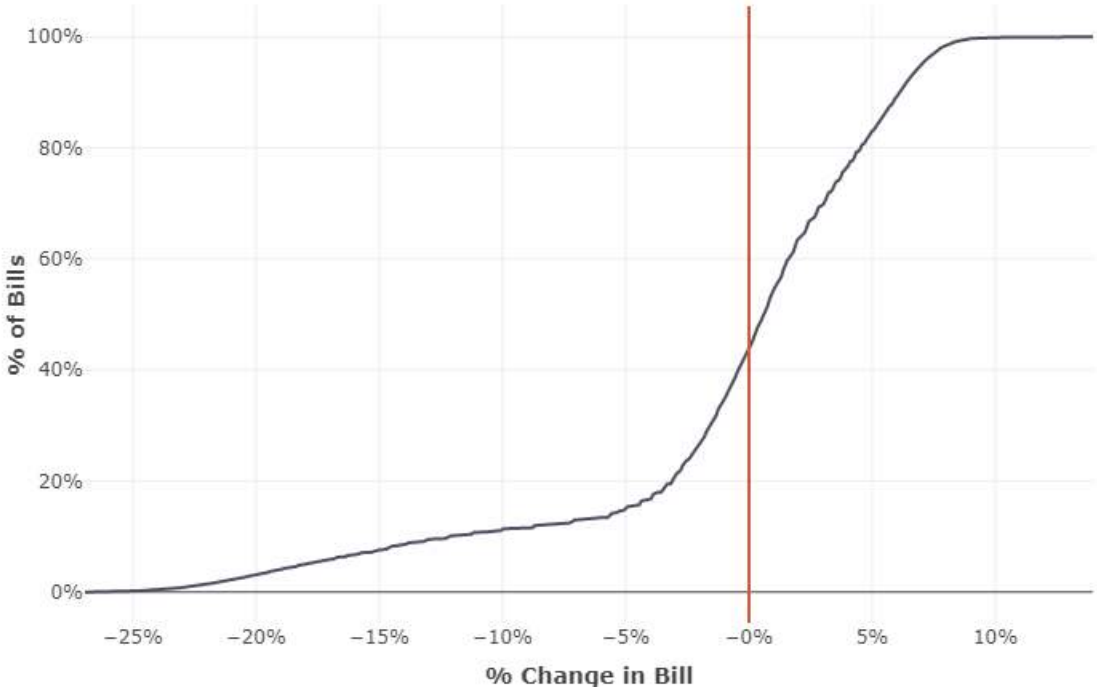
Figure 24. Annual Bill Change – 2" Meter – All Divisions



Bill Impact on All Actual Bills

Figure 25 plots impacts on all bills of all divisions using Empirical Cumulative Distribution Function (ECDF) based on the FY 2019-20 usage data. Approximately 44.0 percent of total annual bills will see a decrease in their bills, 80.0 percent will see up to a 4.5 percent of increase, and 95.0 percent of total bills will see up to a 6.9 percent of increase compared to the current bills.

Figure 25. Bill Impact on All Bills



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FREQUENTLY ASKED QUESTIONS (FAQS)

As a conclusion to this technical report, we will attempt to address potential customer questions that may arise from its reading in an FAQ format. This FAQ represents the Ratepayer Advocate's earnest attempt to address ratepayer concerns in a clear, non-technical, language. Additional questions regarding the proposed rates should be directed to Ichiko Kido, Senior Financial Analyst and Ratepayer Advocate.

Q 1. Why are my rates changing?

A. SCV Water is endeavoring to consolidate customers from three different water agencies. Since they have already combined the administrative functions of these agencies, the customers' rates should be unified as well because the assumptions inherent in the current rates no longer apply. It is California state law that customers should only pay their individual cost to be served. The proposed rates will account for the new cost structure of SCV Water as a whole.

Q2. Who decides what to charge?

A. The proposed rates are based on detailed Cost of Service principles. The costs associated with different functions are allocated to customers based on their service requirements. Additionally, fixed and variable costs are allocated to fixed and variable rates based on industry standards for revenue recovery. Not all fixed costs can be recovered from fixed charges since this will create a huge financial burden on small users. Each customer's water rates are based on a mathematical formula that finds the optimal rate (lowest- financial impact on customers) while the amount of revenue necessary to keep SCV Water working.

Q3. Do I have any say in the ratemaking process?

A. SCV Water contracted a third-party, objective, Ratepayer Advocate to represent the concerns of customers. Additionally, customers can make their opinion known at any Board meeting, workshop, or hearing. Before new rate schedule is passed, customers have a chance to protest any increases using the Proposition 218 process, which is mandated under California Law. Customers with any concerns should reach out to the Ratepayer Advocate and share their concerns throughout the process.

Q4. What happens if proposed revenue adjustments are not implemented?

A. If the proposed rates are not adopted it is very likely that SCV Water will see revenue deficits in the coming years. At first, this will mean spending reserves to pay for daily operations, but as time goes on, necessary maintenance will be postponed, which will lead to a reduction in service and could possibly lead to catastrophic failures of the water system. All of the expenses which need to be recovered through rates are necessary expenses needed to maintain the water system to provide safe services to their customers. The Ratepayer Advocate reviewed all their expenses and ensured that no unreasonable expenses are included in the rate calculation.

Q5. What do my rates pay for?

A. Your rates pay for the day to day operation of the water system which includes: pumping, treatment, testing, and billing, as well as needed replacement and repairs of system infrastructure. Additionally, water rates pay for customer service costs, public outreach, and conservation programs.

Q6. Will my rates go up?

A. Operating cost increases along with projected customer conservation have or will cause a revenue shortfall for SCV Water in the long term. In order to continue serving their customers at the same level, SCV Water must increase rates to bridge the difference between income and expense. Customer rates reflect the actual cost of service, so if costs increase, so will rates. However, for this rate case, 44 percent of customers will see a reduction in their bill during the first year. This is due to the unification of the rates and SCV Water is not increasing the revenue requirements to mitigate the impact on customers. Starting the second year all customers' bills are scheduled to go up as much as 6.5 percent annually.

Q7. How did you decide what needs to be repaired or replaced?

A. SCV Water has detailed master plans and CIP plans which were developed by engineering experts with an extensive knowledge of the water and recycled infrastructure. The system components have service lifespan estimates that have been developed through years of trial and error and engineering experience. SCV Water uses these lifespan estimates to predict which parts of the system will need to be replaced at what time, or if the infrastructure is better off being repaired.

Q8. Why are you taking out loans, isn't that more expensive?

A. Financing capital projects allows the costs to be spread between current customers and future customers. Without loans, current customers would have to pay for all CIP up front with cash which would lead to significant rate increases. Additionally, in order to build up enough cash to pay for larger projects, replacements would likely need to be differed far longer than is advisable.

Q9. Why do I have to pay for infrastructure that only new customers benefit from?

A. Infrastructure that benefits new customers is actually paid for by Facility Capacity Charges (FCFs) and Regional Capacity Charges; one time fees that developers pay when they build a new community. FCFs are calculated to collect enough revenue to pay for all new system development, so that current customers don't share the burden. The capital budget included in the rates are only for projects that benefit current customers.

Q10. If I use less water, will I pay less?

A. Yes. A portion of every water bill is based on metered water use. If you use less water, this portion of your bill will decrease. Because of the limited supply and tendency for drought, it is in the best interest of everyone to use less water. This is one case is where doing the right thing will put more money in your pocket.

Q11. How did you decide what should be fixed vs. variable charge?

A. Fixed costs are costs that don't change based on the amount of water customer uses; whereas, variable costs fluctuate based on water use. Examples of fixed charges include administrative costs, billing costs, wages, supply costs, and maintenance. Examples of variable costs include pumping power, PFAS treatment, chemicals, and purchased water. A perfect rate structure would have all fixed costs, which represent 72 percent of all costs, recovered by fixed charges; however, this design would reduce conservation signals in the rates and would have a huge impact on customers that use small amount of water. It is therefore necessary to have a balance between fixed and variable charges which rewards a customer for saving water and recovers enough revenue to fund operations.

Q12. How often will my rates increase?

A. If the current rate study is adopted, it allows for one rate adjustment per year for the next five years. During the current year, no water rate increases are planned so that customers can adjust to the new rate structure. If rate increases end up not being needed (more revenue than expected was collected or expenses don't increase as quickly as projected), the Board of Directors can decide to not increase rates or introduce lower rate increases during a particular year. Customers can also lower the overall impact of rate increases during this period by reducing water use.

Q13. Who approves the rates?

A. The Board of Directors must vote on the proposed rates and rates can only be adopted after a public hearing. If more than 50 percent of all customers protest the rates, then no rate changes can be adopted.

Q14. What were the considerations used in the rate design?

A. When setting rates, four most important elements of rate setting practices should be considered; **Revenue Sufficiency**: Rates should recover the annual cost of service and provide revenue stability. **Rate Impact**: While rates are calculated to generate sufficient revenue to cover operating and capital costs, they should be designed to minimize the impacts on customers. **Equitability**: Rates should be fairly allocated among all customers based on their estimated demand characteristics. **Practicality**: Rates should be simple in form and, therefore, adaptable to changing conditions, easy to administer, and easy to understand.

Q15. What does SCV Water do to keep water rates as low as possible?

A. SCV Water has significantly cut expenses through economies of scale. Individual expenses are now spread among more customers due to the merger. Additionally, there were three redundant administrative structures before the merger, now there is just one. In order to maintain service at the current, optimal level, SCV Water must continue to diligently monitor its water supply. Testing and treatment make up a considerable expense as does the pumping, which maintains water pressure. Keeping up with repairs and replacements is another way to save money in the long-run.


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