

Ventura Water

2021 Water and Wastewater Cost of Service and Rate Design Study

Final Report / March 16, 2021



March 16, 2021

Ms. Susan Rungren
General Manager
Ventura Water
336 Sanjon Road
Ventura, CA 93002

Subject: 2021 Water and Wastewater Cost of Service and Rate Design Study

Dear Ms. Rungren,

Raftelis is pleased to provide this 2021 Water and Wastewater Cost of Service and Rate Design Study Report to Ventura Water. The overall purpose of the study was to develop a proposed five-year schedule of water and wastewater rates for Fiscal Year (FY) 2021/22 through FY 2025/26 that is fair, equitable, and in compliance with Proposition 218 requirements.

The major goals of the study were to:

- » Develop a ten-year financial plan for the City's Water and Wastewater Enterprises to ensure financial sufficiency, meet operating costs, fund long-term capital needs including VenturaWaterPure, and maintain prudent reserves.
- » Conduct water and wastewater cost of service analyses to ensure a strong nexus between proposed rates and the cost to provide services to customers.
- » Develop five years of water and wastewater rates in compliance with Proposition 218 requirements.

This report details results and recommendations related to the development of the proposed financial plans, cost of service analyses, and proposed rate calculations. It has been a pleasure working with you and we thank you and other Ventura Water staff for the support provided to Raftelis during this study.

Sincerely,



Sanjay Gaur
Project Director



Kevin Kostiuk
Project Manager



Charles Diamond
Lead Analyst

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List of Abbreviations

ADA: Average Daily Attendance

AF: Acre-feet

AFY: Acre-feet per year

AWWA: American Water Works Association

AWPF: Advance Water Purification Facility

BOD: Biological Oxygen Demand

Casitas MWD: Casitas Municipal Water District

CIP: Capital Improvement Plan

City: City of San Buenaventura

COS: Cost of Service

CPI: Consumer Price Index

FY: Fiscal year

GPCD: Gallons per capita per day

GPM: Gallons per minute

GW: Groundwater

HCF: One hundred cubic feet

K: Thousand

Lbs: Pounds

M: Million

Manual M1: American Water Works Association's *Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices - M1 Seventh Edition*

Max Day: Maximum day water demand

Max Hour: Maximum hour water demand

MG: One million gallons

Mg/L: Milligrams per Liter

MGD: One million gallons per day

NPDES Permit: National Pollutant Discharge Elimination System Permit

O&M: Operations and maintenance

PPM: Parts per million

R&R: Repair and replacement

RCLD: Replacement cost less depreciation

SCADA: Supervisory control and data acquisition

SRF Loan: Clean Water State Revolving Fund Loan

SS: Suspended Solids

Study Period: the rate-setting period of this study which extends through fiscal year 2025-26

Ventura Water: The City of San Buenaventura's water and wastewater department

VWP: VenturaWaterPure

VWRF: Ventura Water Reclamation Facility

WEF: Water Environment Federation

WIFIA: Water Infrastructure Finance and Innovation Act

WWTP: Wastewater treatment plant

Fund Structure

Water Enterprise

Fund 52: Water
Operations Fund

Fund 72: Water
Capital Fund

Wastewater Enterprise

Fund 51: Wastewater
Operations Fund

Fund 71: Wastewater
Capital Fund

Fund 75: Estuary
Protection Fund

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1. Executive Summary

1.1. Study Overview

Public water and wastewater utilities in California typically perform a cost of service analysis every five to ten years to ensure that customers are appropriately charged for service commensurate with the cost to provide service. Ventura Water last conducted a water and wastewater cost of service study in 2014, which established proposed rates over a four-year period through Fiscal Year (FY) 2017-18. No rate increases have been implemented since the last year of adopted rates went into effect in July 2017. Ventura Water engaged Raftelis to conduct a water and wastewater cost of service study to establish a proposed five-year schedule of water and wastewater rates through FY 2025-26. Note that proposed rates cannot be implemented until formally adopted by City Council after a public hearing, absent a majority protest by parcels served by the City. Proposition 218 requires that Ventura Water customers be mailed a public hearing notice detailing proposed rate changes no fewer than 45 days before the public hearing.

The major objectives of this study are to:

- » Develop a ten-year financial plan that sufficiently funds Ventura Water’s water and wastewater operations and maintenance (O&M) expenses, debt service payments, and capital expenditures while adequately funding reserves and achieving debt coverage requirements.
- » Conduct cost of service analyses that establishes a clear nexus between the cost to serve water and wastewater customers and the rates charged to customers, per Proposition 218 and industry standards.
- » Review Ventura Water’s existing water and wastewater rate structures and recommend changes as necessary to ensure that proposed rates achieve the financial and policy objectives of the agency.
- » Develop a five-year schedule of water and wastewater rates that are fair, equitable, and compliant with Proposition 218.
- » Develop a five-year schedule of water shortage rates that consider the City’s Water Shortage Event Contingency Plan.

1.2. Rate Study Process

This study was conducted using industry-standard principles outlined by the American Water Works Association’s *Manual M1* and the Water Environment Federation’s *Financing and Charges for Wastewater Systems*. The overall process outlined below applies to the development of both water and wastewater rates.

1. **Financial Plan:** Develop cash flow projections for the Water and Wastewater Enterprise to determine the amount of revenue required from water and wastewater rates.
2. **Cost of Service Analysis:** Allocate costs to system components and then to various customer classes based on user characteristics.
3. **Rate Design:** Develop rates that generate sufficient revenues based on the results of the financial plan and cost of service analyses and communicate the policy preferences of the agency.
4. **Administrative Record Preparation:** Develop an administrative record (this Study report) to document the results of the rate study.
5. **Rate Adoption:** Proposed rates may be adopted by City Council only after holding a public hearing in accordance with Proposition 218 requirements.

1.3. Proposed Water Financial Plan

Raftelis conducted a status quo cash flow analysis to evaluate whether existing water rates adequately fund the Water Enterprise’s various expenses over the five-year study period. Annual projections of revenues, O&M expenses, debt service payments, and capital expenditures through FY 2025-26 were developed with Ventura Water, Public Works, and Finance staff. Projected operating and capital costs resulting from VenturaWaterPure (VWP) are accounted for in the financial plan. Raftelis projects that with no rate increases over the five-year study period, the Water Enterprise’s reserves will fall below the target reserve policy by FY 2024-25 and fail to meet minimum debt coverage in all years beginning in FY 2021-22. This demonstrates a clear need for revenue adjustments (i.e. gross water rate revenue increases relative to existing rate revenues). Raftelis worked with Ventura Water staff and the Water Commission to develop the following proposed revenue adjustments over the five-year study period (see **Table 1-1**).

Table 1-1: Proposed Water Revenue Adjustments

Description	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Effective Date	July 1, 2021	July 1, 2022	July 1, 2023	July 1, 2024	July 1, 2025
Revenue Adjustment	7.0%	7.0%	7.0%	7.0%	7.0%

Key factors influencing the need for proposed revenue adjustments include:

- » **Cost inflation:** Operating costs continue to increase year over year due to inflationary pressures.
- » **Reduction in baseline water demand:** Water sales are significantly lower relative to pre-drought years, resulting in lower baseline variable water rate revenues.
- » **Planned capital expenditures:** CIP project expenditures through FY 2025-26, including substantial repair and replacement (R&R) capital projects as well as VenturaWaterPure, the State Water Interconnection Project, and the Eastside to Westside Waterline Interconnection Projects, total approximately \$34.5 million (M) per year on average.

Figure 1-1 shows the proposed CIP financing plan over the study period. All CIP exclusive of VenturaWaterPure is assumed to be funded by cash reserves. VenturaWaterPure CIP is assumed to be funded by a mix of low interest State and Federal government loans, revenue bonds, grants, and cash reserves.

Figure 1-1: Water Enterprise Capital Improvement Plan

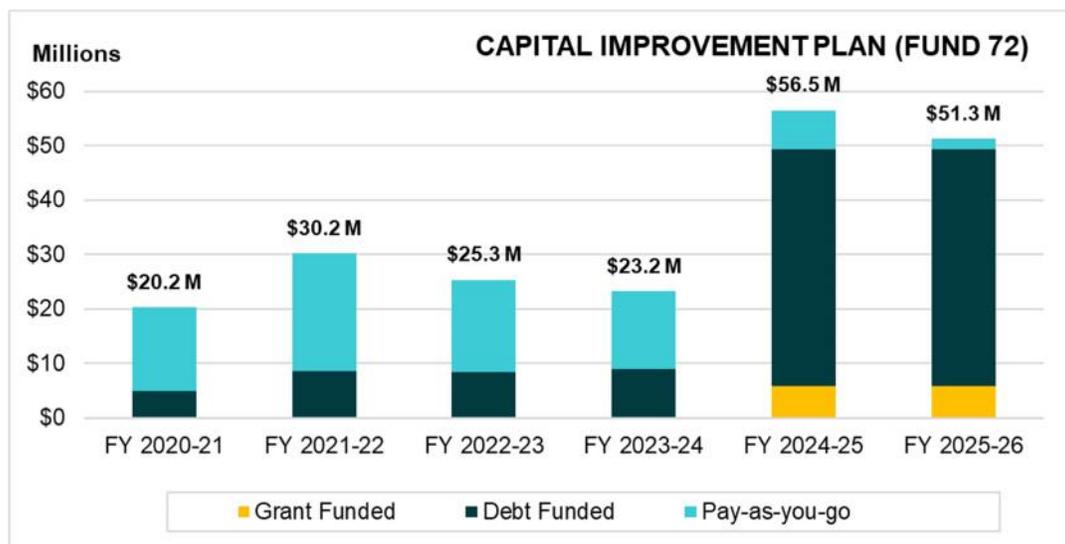


Figure 1-2 shows the proposed versus status quo Water Enterprise operating financial plan. Revenues under the proposed financial plan and status quo financial plan are represented by the dark blue and red dashed lines, respectively. Revenue requirements including O&M expenses, debt service, and reserve funding for CIP/other purposes are represented by the various stacked bars. Revenue adjustments are required to generate additional revenue to recover O&M expenses and debt service payments over the study period.

Figure 1-2: Proposed vs. Status Quo Water Financial Plan

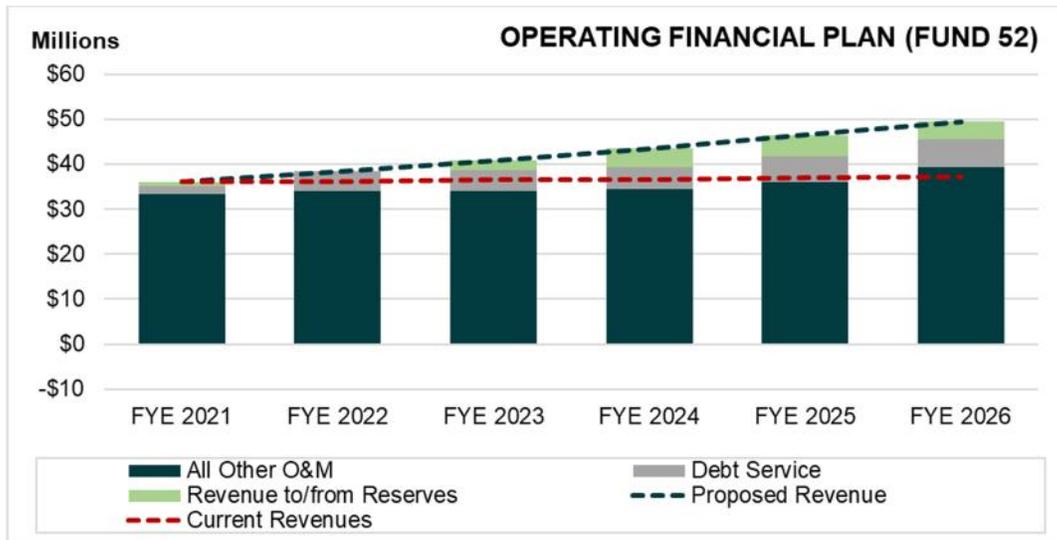


Figure 1-3 shows the Water Enterprise’s projected fiscal year-end balance under the proposed financial plan. The light blue bars indicate the ending balance on June 30 of each year. The total reserve target is represented by the red dashed line. The Water Enterprise is projected to continue to draw down its reserves through FY 2024-25 to fund substantial repair and replacement (R&R) capital projects exclusive of VenturaWaterPure (VWP). At the end of the rate-setting period, the Water Enterprise’s reserves are projected to remain above the target amount with the proposed rate increases. Maintaining reserves above the target amount is necessary as additional drawdown of reserves beyond FY 2025-26 is anticipated to fund substantial R&R and VWP CIP from FY 2026-27 through FY 2029-30.

Figure 1-3: Proposed Water Financial Plan – Projected Ending Balances

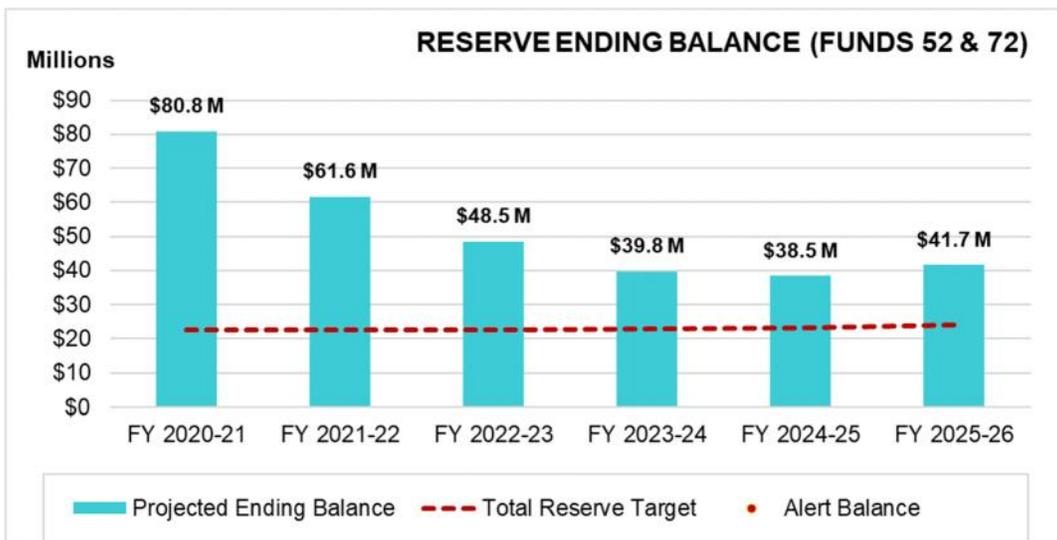
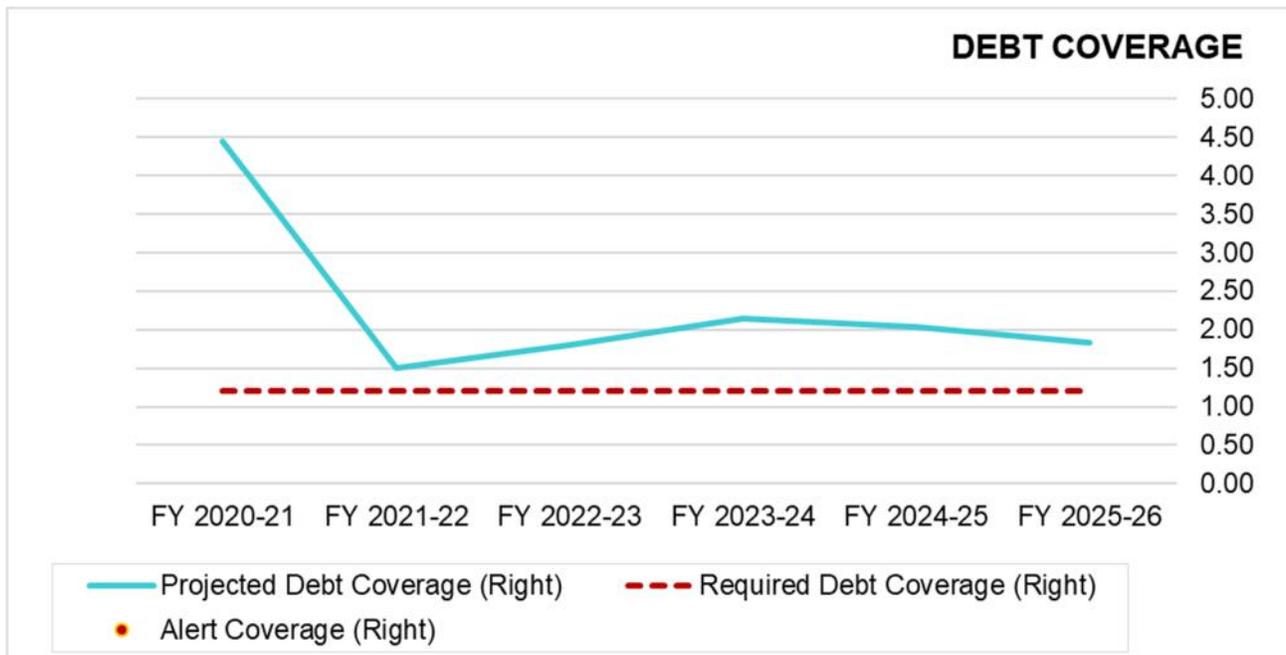


Figure 1-4 shows projected debt coverage (blue line) relative to the debt coverage requirement (red line) over the study period. Debt coverage is expected to drop sharply in FY 2021-22 due to new debt issuances to finance a portion of VenturaWaterPure CIP project costs. This demonstrates the need for revenue adjustments early on in the study period to ensure sufficient debt capacity to finance VenturaWaterPure. Failure to meet debt service coverage results in a technical default, which without foreseeable remedial action such as implementing rate increases, could result in a downgrade of credit rating, higher costs in future debt issuance, or even denial of credit.

Figure 1-4: Proposed Water Financial Plan - Debt Coverage



1.4. Proposed Water Rates

Ventura Water’s existing water rate structure consists of fixed Water Service Charges (based on meter size), fixed Fire Line Service Charges (based on fire line size), and variable Water Volume Rates (per hundred cubic feet [HCF] of water delivered). Raftelis worked closely with Ventura Water staff and the Water Commission to evaluate potential changes to the existing water rate structure. The following changes are proposed:

- » **Adjust Rate Schedule to Reflect Monthly Billing Basis:** Ventura Water plans to transition from billing on a bimonthly basis (every two months) to a monthly basis beginning in July 2021.
- » **Customer Class Consolidation:** Raftelis recommends that the Institutional/Interruptible customer class and Non-Residential Irrigation customer classes are consolidated into a single Non-Residential Irrigation customer class.
- » **Eliminate Outside City Limits Surcharge.**
- » **Refinement to Fire Line Service Charges:** Private fire lines associated with single family residential accounts do not receive a separate bill for the Fire Line Service Charge. Therefore, Raftelis recommends that single family residential customers with U-branch fire lines are charged a unique rate to properly offset billing costs already paid by those customers via the Water Service Charge.
- » **Update Residential Tier Allotments:** Raftelis recommends that the rate structure for residential Water Volume Rates be consolidated from four tiers down to three tiers for both base rates and water shortage

rates. Current and proposed residential monthly tier allotments are shown below in **Table 1-2**. Current bimonthly allotments are shown in monthly terms to relate to proposed billing frequency changes. The current monthly allotment tier structure reflects the City’s existing four-tier water shortage rate structure, which has been in effect since 2015.

Table 1-2: Proposed Changes to Residential Tier Allotments

Description	Current Monthly Allotment (per Dwelling Unit)	Proposed Monthly Allotment (per Dwelling Unit)
Single Family Residential		
Tier 1	0-3 HCF	0-6 HCF
Tier 2	4-7 HCF	7-12 HCF
Tier 3	8-15 HCF	>12 HCF
Tier 4	>15 HCF	N/A
Multiple Family Residential		
Tier 1	0-3 HCF	0-5 HCF
Tier 2	4-5 HCF	6-10 HCF
Tier 3	6-8 HCF	>10 HCF
Tier 4	>8 HCF	N/A

Table 1-3 shows proposed Water Service Charges, Fire Line Service Charges, and Water Volume Rates through FY 2025-26. All fixed charges and tier allotments are shown on a monthly basis, as Ventura Water plans to transition to monthly billing beginning in July 2021. Current fixed charges are shown on a monthly basis. Current Water Volume Rates are Water Shortage Stage 2 rates. Proposed rates reflect non-shortage / new baseline supply and demand conditions.

Table 1-3: Proposed Five-Year Water Rate Schedule – Base Rates Only

Description	Current	Proposed July 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Monthly Water Service Charge						
3/4-inch water meter	\$16.85	\$18.50	\$19.79	\$21.18	\$22.66	\$24.25
1-inch water meter	\$25.52	\$27.16	\$29.06	\$31.09	\$33.27	\$35.59
1.5-inch water meter	\$47.19	\$48.80	\$52.21	\$55.87	\$59.78	\$63.96
2-inch water meter	\$73.21	\$74.77	\$80.00	\$85.60	\$91.60	\$98.01
3-inch water meter	\$155.59	\$157.02	\$168.01	\$179.77	\$192.35	\$205.81
4-inch water meter	\$276.99	\$278.22	\$297.69	\$318.53	\$340.83	\$364.69
6-inch water meter	\$567.49	\$568.24	\$608.01	\$650.57	\$696.11	\$744.84
8-inch water meter	\$1,044.42	\$1,044.39	\$1,117.50	\$1,195.72	\$1,279.42	\$1,368.98
10-inch water meter	\$1,651.43	\$1,650.40	\$1,765.93	\$1,889.54	\$2,021.81	\$2,163.34
12-inch water meter	\$2,171.72	\$2,169.84	\$2,321.73	\$2,484.25	\$2,658.14	\$2,844.21
Monthly Fire Line Service Charge						
1-inch single family residential U-branch fire line	\$4.40	\$3.58	\$3.83	\$4.10	\$4.39	\$4.69
1-inch fire line	\$4.40	\$9.09	\$9.73	\$10.41	\$11.13	\$11.91
2-inch fire line	\$4.40	\$9.09	\$9.73	\$10.41	\$11.13	\$11.91
3-inch fire line	\$12.75	\$15.90	\$17.02	\$18.21	\$19.48	\$20.84
4-inch fire line	\$27.15	\$27.65	\$29.59	\$31.66	\$33.88	\$36.25
6-inch fire line	\$78.84	\$69.83	\$74.72	\$79.95	\$85.54	\$91.53
8-inch fire line	\$168.01	\$142.58	\$152.56	\$163.24	\$174.66	\$186.89
10-inch fire line	\$302.13	\$252.00	\$269.64	\$288.52	\$308.71	\$330.32
12-inch fire line	\$488.01	\$403.66	\$431.92	\$462.15	\$494.50	\$529.11
Water Volume Rates (per HCF)						
Single Family Residential						
Tier 1 (Current: 0-3 HCF per month / Proposed: 0-6 HCF per month)	\$2.77	\$2.92	\$3.13	\$3.34	\$3.58	\$3.83
Tier 2 (Current: 4-7 HCF per month / Proposed: 7-12 HCF per month)	\$3.12	\$4.82	\$5.16	\$5.52	\$5.90	\$6.31
Tier 3 (Current: 8-15 HCF per month / Proposed: >12 HCF per month)	\$4.62	\$6.24	\$6.67	\$7.14	\$7.64	\$8.17
Tier 4 (Current: >15 HCF per month / Proposed: N/A)	\$7.73	N/A	N/A	N/A	N/A	N/A
Multiple Family Residential						
Tier 1 (Current: 0-3 HCF per month / Proposed: 0-5 HCF per month)	\$2.77	\$2.92	\$3.13	\$3.34	\$3.58	\$3.83
Tier 2 (Current: 4-5 HCF per month / Proposed: 6-10 HCF per month)	\$3.12	\$4.82	\$5.16	\$5.52	\$5.90	\$6.31
Tier 3 (Current: 6-8 HCF per month / Proposed: >10 HCF per month)	\$4.62	\$6.24	\$6.67	\$7.14	\$7.64	\$8.17
Tier 4 (Current: >8 HCF per month / Proposed: N/A per month)	\$7.73	N/A	N/A	N/A	N/A	N/A
Non-Residential	\$3.98	\$4.54	\$4.85	\$5.19	\$5.56	\$5.94
Non-Residential Irrigation	\$4.25	\$5.16	\$5.52	\$5.91	\$6.32	\$6.76
Institutional/Interruptible	\$3.29	N/A	N/A	N/A	N/A	N/A
Untreated Water	\$3.44	\$3.08	\$3.30	\$3.53	\$3.78	\$4.04
Reclaimed Water	\$0.95	\$1.16	\$1.23	\$1.31	\$1.38	\$1.47
Outside City Limits Surcharge (per HCF)						
All Customer Classes	\$0.60	N/A	N/A	N/A	N/A	N/A

1.5. Proposed Water Shortage Surcharges

Ventura Water conducted a Water Shortage Rate Study in 2015 to implement a schedule of increasing Water Volume Rates during declared water shortage stages. This was necessary to recover revenue shortfalls resulting from reduced water sales during the recent drought. Water shortage stages are currently declared based on criteria outlined in Ventura Water's 2015 Water Shortage Event Contingency Plan. Ventura Water is in the process of updating the 2015 Water Shortage Event Contingency Plan, which will incorporate updated criteria for declaring water shortage stages. The 2020 Water Shortage Event Contingency Plan compares current supply and current demand, instead of current supply and normal supply as was done in the 2015 Water Shortage Event Contingency Plan. Current demand will be estimated using the most recent five years of customer demands plus projected demands due to annual growth. The key impact of the update will be that water shortage stages are less likely to be declared under the new criteria. Based on new baseline water demand and projected supply conditions, it is anticipated that the current Stage 2 declaration will be rescinded, and no Water Shortage rates will be implemented in FY 2021-22.

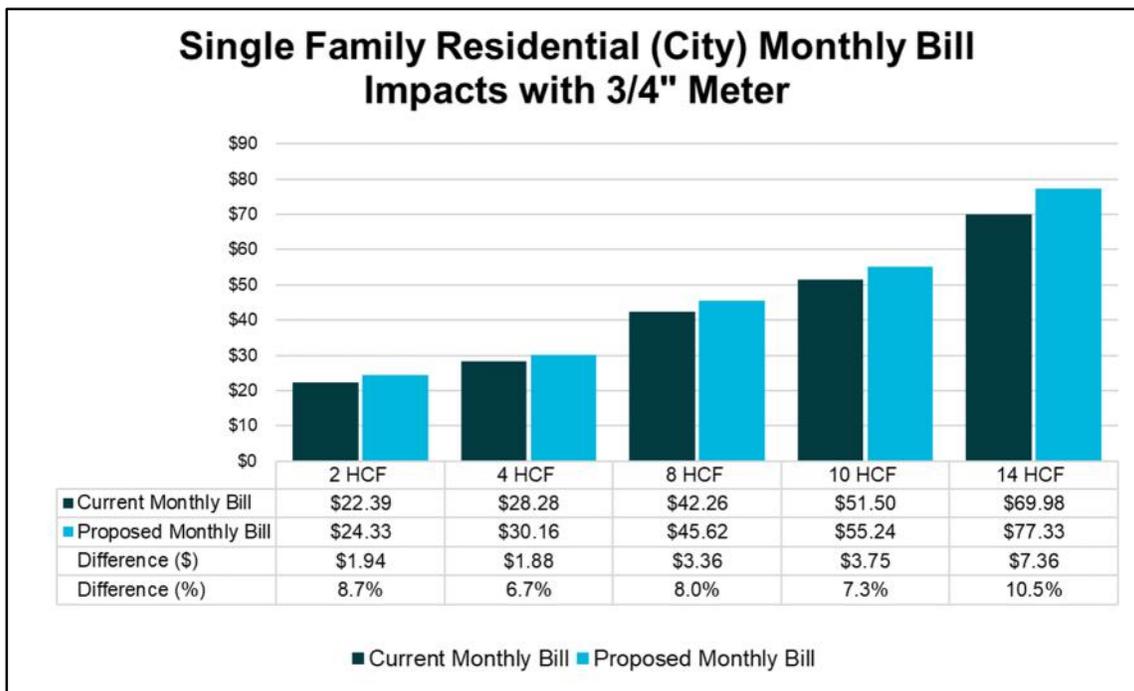
Raftelis recommends that Ventura Water update the existing Water Shortage Rates. Under the current system of Water Shortage Rates, Water Volume Rates increase with each subsequent water shortage stage beginning with Stage 2. In place of adjusting Water Volume Rates with each stage, Raftelis recommends that Ventura Water maintain the base-condition Water Volume Rates at each stage, and communicate the shortage conditions as Water Shortage Surcharges during Stages 2-6. This change does not affect the revenue needs during shortage conditions; it is recommended to more clearly communicate to customers the impact of water shortage conditions on each bill. Additionally, Raftelis recommends harmonizing the tier allotments in shortage and non-shortage rates to simplify the schedule of shortage surcharges and to improve customer understanding. It also aligns with the cost of service analysis behind the updated tier breakpoints, which is explained in later sections of this report. Currently, in shortage conditions, the first Residential tier is split in to two tiers, which yields a four-tier rate structure in shortage and a three-tier structure in non-shortage. The proposed Water Shortage Surcharges maintain the same three-tier structure and the same allotments in shortage and non-shortage conditions. **Table 1-4** shows proposed Water Shortage Surcharges for water shortage stage through FY 2025-26.

Table 1-4: Proposed Five-Year Schedule of Water Shortage Surcharges

Proposed Water Shortage Surcharges (per HCF)	Proposed July 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Revenue Adjustment	7.0%	7.0%	7.0%	7.0%	7.0%
Stage 1 (10% Voluntary Reduction)					
Residential Tier 1	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Residential Tier 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Residential Tier 3	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Non-Residential	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Non-Residential Irrigation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Untreated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Stage 2 (10% Mandatory Reduction)					
Residential Tier 1	\$0.31	\$0.33	\$0.36	\$0.38	\$0.41
Residential Tier 2	\$0.51	\$0.55	\$0.59	\$0.63	\$0.67
Residential Tier 3	\$0.66	\$0.71	\$0.76	\$0.81	\$0.87
Non-Residential	\$0.48	\$0.52	\$0.55	\$0.59	\$0.63
Non-Residential Irrigation	\$0.55	\$0.59	\$0.63	\$0.67	\$0.72
Untreated	\$0.33	\$0.35	\$0.38	\$0.40	\$0.43
Stage 3 (20% Mandatory Reduction)					
Residential Tier 1	\$0.68	\$0.73	\$0.78	\$0.83	\$0.89
Residential Tier 2	\$1.12	\$1.19	\$1.28	\$1.37	\$1.46
Residential Tier 3	\$1.44	\$1.54	\$1.65	\$1.77	\$1.89
Non-Residential	\$1.05	\$1.12	\$1.20	\$1.29	\$1.38
Non-Residential Irrigation	\$1.20	\$1.28	\$1.37	\$1.46	\$1.57
Untreated	\$0.72	\$0.77	\$0.82	\$0.88	\$0.94
Stage 4 (30% Mandatory Reduction)					
Residential Tier 1	\$1.19	\$1.27	\$1.36	\$1.45	\$1.55
Residential Tier 2	\$1.96	\$2.09	\$2.24	\$2.39	\$2.56
Residential Tier 3	\$2.53	\$2.71	\$2.90	\$3.10	\$3.31
Non-Residential	\$1.84	\$1.97	\$2.11	\$2.25	\$2.41
Non-Residential Irrigation	\$2.09	\$2.24	\$2.40	\$2.56	\$2.74
Untreated	\$1.25	\$1.34	\$1.43	\$1.53	\$1.64
Stage 5 (40% Mandatory Reduction)					
Residential Tier 1	\$1.88	\$2.01	\$2.15	\$2.30	\$2.46
Residential Tier 2	\$3.09	\$3.31	\$3.54	\$3.79	\$4.05
Residential Tier 3	\$4.00	\$4.28	\$4.58	\$4.90	\$5.25
Non-Residential	\$2.91	\$3.12	\$3.33	\$3.57	\$3.82
Non-Residential Irrigation	\$3.31	\$3.55	\$3.79	\$4.06	\$4.34
Untreated	\$1.98	\$2.12	\$2.27	\$2.43	\$2.59
Stage 6 (50% Mandatory Reduction)					
Residential Tier 1	\$2.61	\$2.80	\$2.99	\$3.20	\$3.42
Residential Tier 2	\$4.31	\$4.61	\$4.94	\$5.28	\$5.65
Residential Tier 3	\$5.58	\$5.97	\$6.39	\$6.83	\$7.31
Non-Residential	\$4.06	\$4.34	\$4.65	\$4.97	\$5.32
Non-Residential Irrigation	\$4.62	\$4.94	\$5.29	\$5.66	\$6.05
Untreated	\$2.76	\$2.95	\$3.16	\$3.38	\$3.62

Figure 1-5 shows sample monthly water bills for single family residential customers with a 3/4-inch water meter at varying levels of water use under both current rates and proposed FY 2021-22 rates. Note that approximately 95 percent of single family residential customers have a 3/4-inch water meter. The five water use levels shown are representative of single family residential customer monthly water use at the 10th, 25th, 50th, 75th, and 90th percentile.

Figure 1-5: Single Family Residential Monthly Water Bill Impacts (FY 2021-22)



1.6. Proposed Wastewater Financial Plan

Raftelis conducted a status quo cash flow analysis to evaluate whether existing wastewater rates adequately fund the Wastewater Enterprise’s various expenses over the rate-setting period. Projected operating and capital costs resulting from VenturaWaterPure are accounted for in the financial plan analysis. Raftelis projects that with no rate increases over the five-year study period, the Wastewater Enterprise’s reserves will fall below the target reserve policy by FY 2023-24 and fail to meet its debt coverage requirement beginning in FY 2024-25. This demonstrates a need for revenue adjustments for the Wastewater Enterprise. Raftelis worked with Ventura Water, Public Works, and Finance staff and the Water Commission to develop the following schedule of proposed revenue adjustments over the five-year study period (see **Table 1-5**).

Table 1-5: Proposed Wastewater Revenue Adjustments

Description	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Effective Date	July 1, 2021	July 1, 2022	July 1, 2023	July 1, 2024	July 1, 2025
Revenue Adjustment	6.0%	6.0%	6.0%	6.0%	6.0%

Key factors influencing the need for proposed Wastewater Enterprise revenue adjustments include:

- » **Cost inflation:** Operating costs continue to increase year over year due to inflationary pressures.

- » **Planned capital expenditures:** CIP projects through FY 2025-26, including substantial repair and replacement (R&R) capital projects as well as VenturaWaterPure, total approximately \$22.9M per year on average.

Figure 1-6 shows the proposed CIP financing plan over the study period. All CIP exclusive of VenturaWaterPure is assumed to be funded by cash reserves. VenturaWaterPure CIP is assumed to be funded by a mix of low interest State and Federal government loans, revenue bonds, grants, and cash reserves.

Figure 1-6: Wastewater Enterprise Capital Improvement Plan

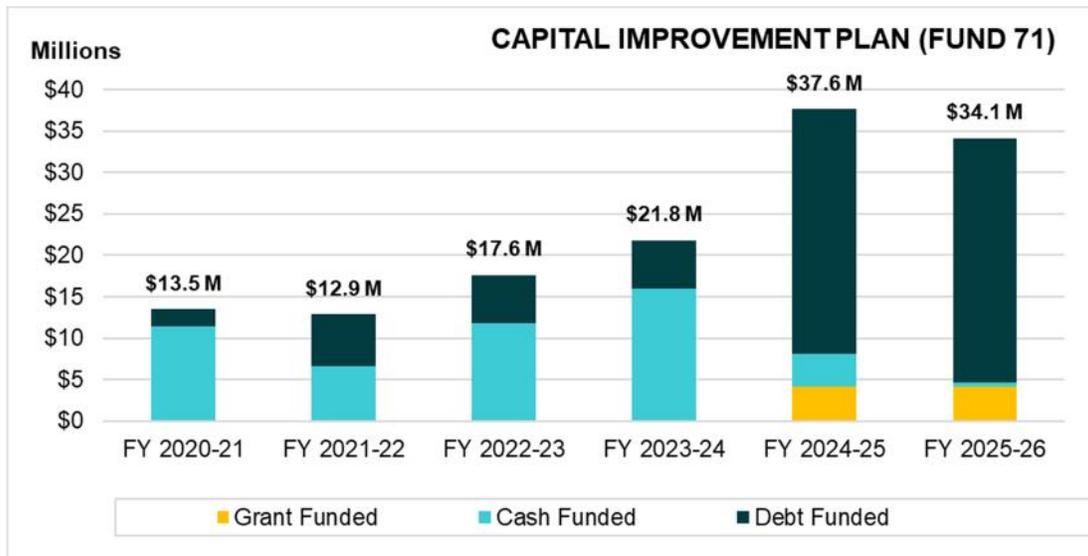


Figure 1-7 shows the proposed versus status quo Wastewater Enterprise operating financial plan. Revenues under the proposed financial plan and status quo financial plan are represented by the dark blue and red dashed lines, respectively. Revenue requirements including O&M expenses, debt service, and reserve funding for CIP/other purposes are represented by the various stacked bars. Revenue adjustments are required to generate sufficient revenue to recover O&M expenses and debt service payments over the study period.

Figure 1-7: Proposed vs. Status Quo Wastewater Financial Plan

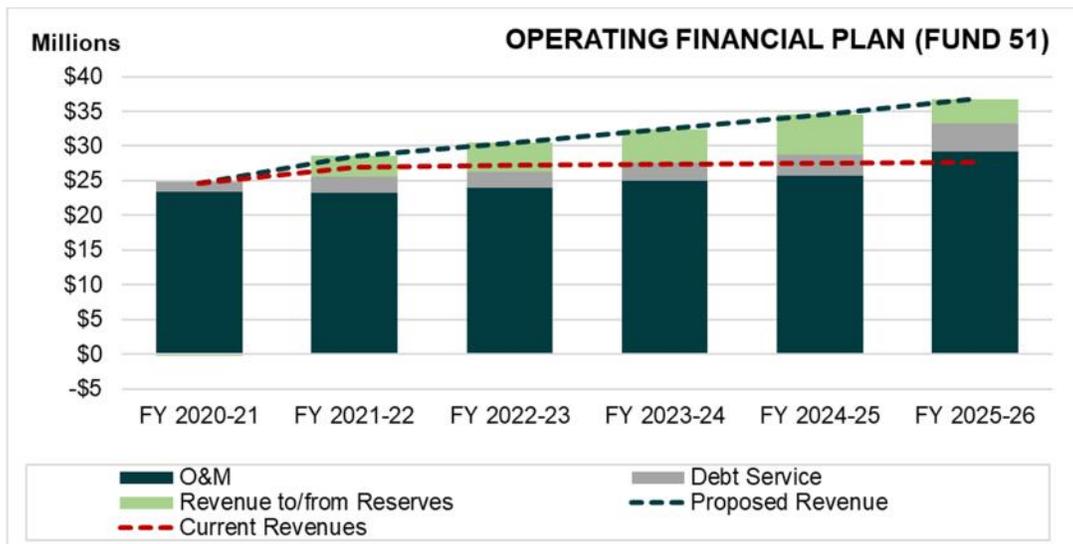


Figure 1-8 shows the Wastewater Enterprise’s projected fiscal year-end balance under the proposed financial plan. The light blue bars indicate the ending balance on June 30 of each year. The total reserve target is represented by the red dashed line. The Wastewater Enterprise is projected to draw down its reserves through FY 2023-24 to fund substantial R&R capital projects exclusive of VenturaWaterPure (VWP). By the end of the rate-setting period, the Wastewater Enterprise’s reserves are projected to remain above the target amount with the proposed rate increases. Maintaining reserves above the target amount is necessary as additional drawdown of reserves beyond FY 2025-26 is anticipated to fund substantial R&R and VWP CIP from FY 2026-27 through FY 2029-30.

Figure 1-8: Proposed Wastewater Financial Plan – Projected Ending Balances

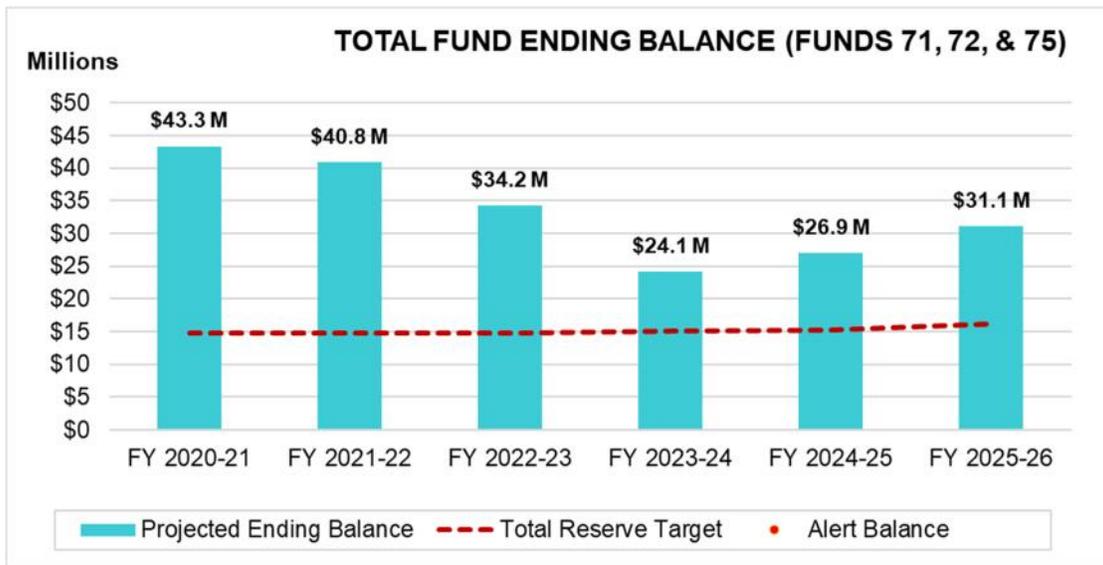
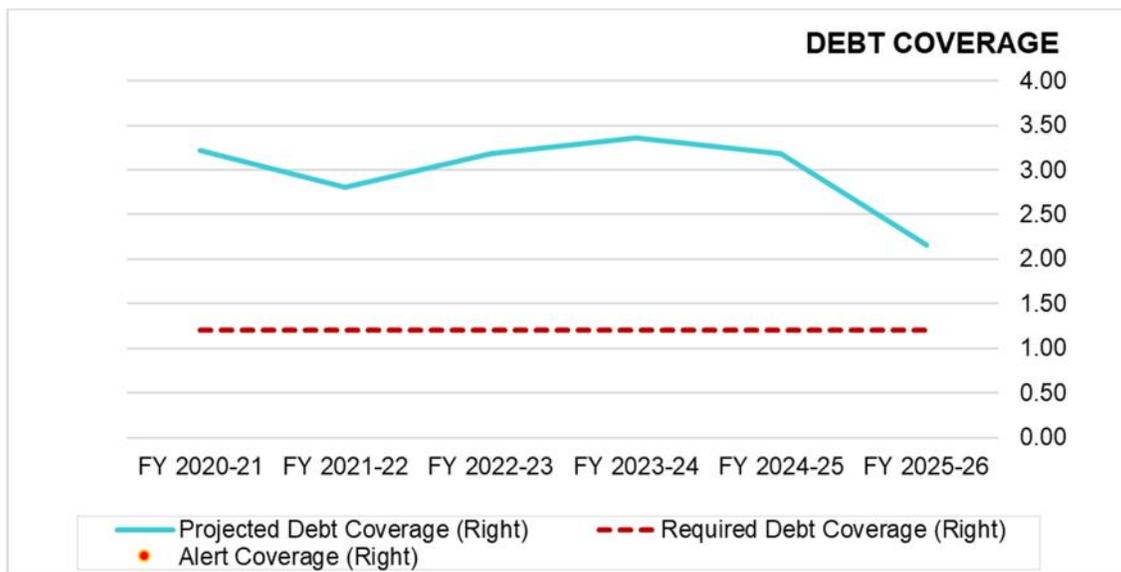


Figure 1-9 shows projected debt coverage (blue line) relative to the debt coverage requirement (red line) over the study period. Fluctuations in debt coverage over the study period are largely due to new debt service assumed to finance VenturaWaterPure CIP project costs. Debt coverage remains above the requirement throughout the study period.

Figure 1-9: Proposed Wastewater Financial Plan - Debt Coverage



1.7. Proposed Wastewater Rates

Ventura Water’s wastewater rate structure currently consists of Fixed Charges and Flow Charges for most customer classes including residential, commercial, and churches. Schools are subject to a Fixed Charge only based on average daily attendance (ADA). Industrial customers are charged based on actual flow and strength measurements of wastewater discharge. Raftelis worked closely with Ventura Water staff and the Water Commission to evaluate potential changes to the existing wastewater rate structure. Raftelis recommends the following proposed changes:

- » **Adjust Rate Schedule to Reflect Monthly Billing Basis:** Ventura Water plans to transition from billing on a bimonthly basis to a monthly basis beginning in July 2021.
- » **Eliminate Estuary Protection Charge:** Raftelis recommends that Ventura Water eliminate the current Estuary Protection Charge. This proposed change was supported by the Water Commission as a means to simplify the wastewater rate structure and improve customer understanding. Note that there is no net revenue impact resulting from this proposed change, as the proposed rates are designed to collect additional revenue to offset the loss of Estuary Protection Charge revenue.
- » **Update Residential Flow Charge Basis:** Raftelis recommends that Ventura Water modify existing Flow Charge basis for residential customers. Proposed changes to the residential Flow Charge basis are described in detail in **Table 1-6**.

Table 1-6: Proposed Changes to Residential Wastewater Flow Charge Cap

Residential Wastewater Flow Charge	Current Bimonthly Billing Units	Proposed Monthly Billing Units
Single Family Residential	Prior year winter average water use for two full bimonthly billing cycles from approximately February-May (in HCF) subject to 30 HCF bimonthly cap.	Actual water use each monthly billing period (in HCF) subject to 12 HCF monthly cap.
Multiple Family Residential	Prior year winter average water use for two full bimonthly billing cycles from approximately February-May (in HCF) subject to 24 HCF per dwelling unit bimonthly cap.	Actual water use each monthly billing period (in HCF) subject to 10 HCF per dwelling unit monthly cap.

Table 1-7 shows proposed wastewater rates through FY 2025-26. All Fixed Charges and residential wastewater flow caps are shown on a monthly basis, as Ventura Water plans to transition to monthly billing beginning in July 2021.

Table 1-7: Proposed Five-Year Wastewater Rate Schedule

Description	Current ¹	Proposed July 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Single Family Residential						
Monthly Fixed Charge	\$12.84	\$15.91	\$16.86	\$17.87	\$18.94	\$20.08
Flow Charge (per HCF) ²	\$3.76	\$3.75	\$3.97	\$4.21	\$4.46	\$4.73
Multiple Family Residential						
Monthly Fixed Charge (per dwelling unit)	\$9.51	\$11.73	\$12.43	\$13.17	\$13.97	\$14.80
Flow Charge (per HCF) ³	\$3.76	\$3.75	\$3.97	\$4.21	\$4.46	\$4.73
Commercial						
Monthly Fixed Charge	\$12.84	\$15.91	\$16.86	\$17.87	\$18.94	\$20.08
Flow Charge (per HCF)						
Group 1	\$4.94	\$5.22	\$5.53	\$5.86	\$6.21	\$6.59
Group 2	\$5.63	\$5.53	\$5.86	\$6.21	\$6.58	\$6.98
Group 3	\$7.24	\$6.75	\$7.16	\$7.59	\$8.04	\$8.53
Group 4	\$8.94	\$8.05	\$8.53	\$9.04	\$9.59	\$10.16
Group 5	\$7.94	\$7.44	\$7.88	\$8.36	\$8.86	\$9.39
Group 6	\$1.73	\$1.57	\$1.66	\$1.76	\$1.87	\$1.98
Churches						
Monthly Fixed Charge	\$12.84	\$15.91	\$16.86	\$17.87	\$18.94	\$20.08
Flow Charge (per HCF)	\$3.70	\$3.94	\$4.17	\$4.43	\$4.69	\$4.97
Schools						
Monthly Charge (per ADA)	\$100.64	\$104.80	\$111.09	\$117.76	\$124.82	\$132.31
Industrial						
Flow (per million gallons)	\$5,814.85	\$6,148.36	\$6,517.26	\$6,908.30	\$7,322.80	\$7,762.16
Chemical Oxygen Demand (per 1,000 lbs.)	\$224.18	\$170.87	\$181.12	\$191.99	\$203.50	\$215.71
Suspended Solids (per 1,000 lbs.)	\$484.93	\$350.30	\$371.32	\$393.59	\$417.21	\$442.24
Estuary Protection Charge						
All Customer Classes (% of WW Bill)	10%	N/A	N/A	N/A	N/A	N/A

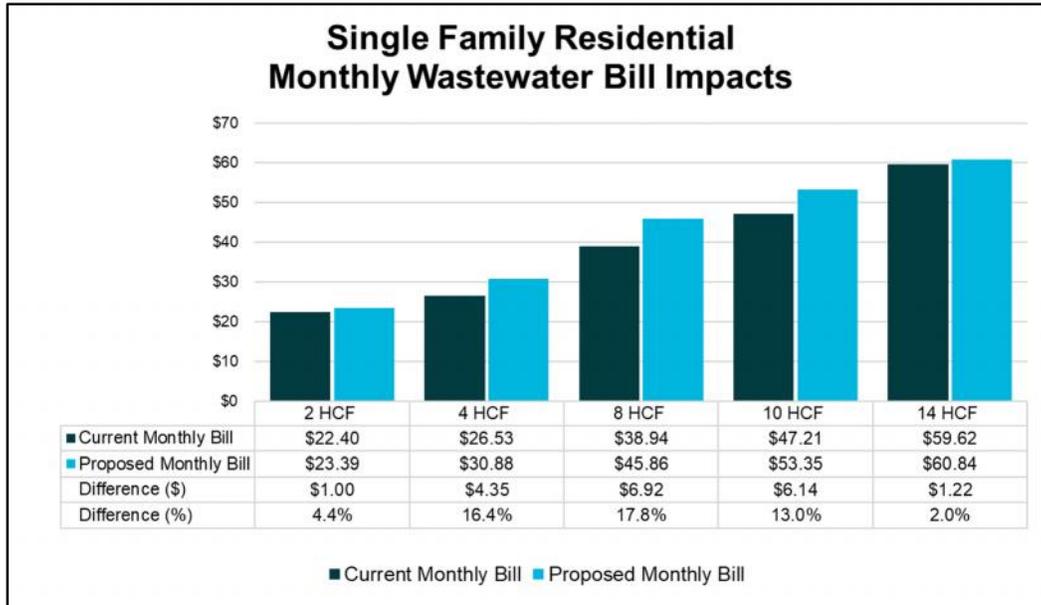
¹All current rates shown on a monthly basis to provide a direct comparison to proposed rates.

²Single family residential wastewater customers are currently charged based on average winter water usage subject to a cap of 15 HCF per month. Beginning in FY 2021-22 it is proposed that single family residential wastewater customers will be charged based on actual water usage each billing period subject to a cap of 12 HCF per month.

³Multiple family residential wastewater customers are currently charged based on average winter water usage subject to a cap of 12 HCF per dwelling unit per month. Beginning in FY 2021-22 it is proposed that single family residential wastewater customers will be charged based on actual water usage each billing period subject to a cap of 10 HCF per dwelling unit per month.

Figure 1-10 shows sample monthly wastewater bills for single family residential customers at varying levels of water use under both current rates and proposed FY 2021-22 rates. Current Flow Charges are based on prior year winter average water use subject to a 15 HCF monthly cap, while proposed Flow Charges are based on actual period monthly water use subject to a 12 HCF monthly cap. Note that actual single family customer impacts in FY 2021-22 may vary based on each customer’s water use characteristics during winter months versus individual months.

Figure 1-10: Single Family Residential Monthly Wastewater Bill Impacts (FY 2021-22)



1.8. Combined Monthly Bill Impacts

Figure 1-11 shows combined monthly water and wastewater bills for a single family residential customer over the rate-setting period. **Figure 1-12** shows a comparison of sample single family residential combined monthly water and wastewater bills with neighboring utilities. The monthly bills shown are based on a single family residential customer with a 3/4-inch water meter using 9 HCF of water per month.

Figure 1-11: Five-Year Combined Monthly Bill Impacts for Single Family Residential (9 HCF/Month)

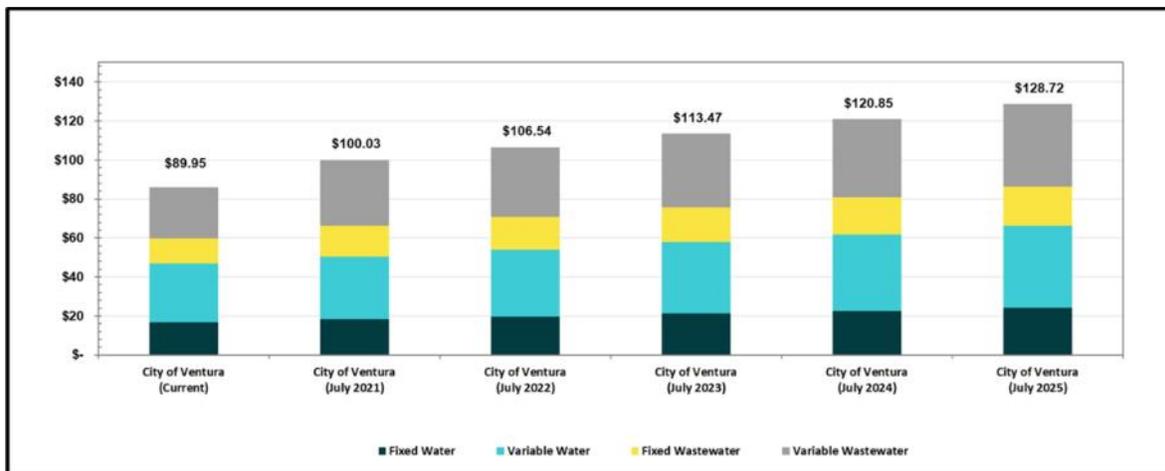
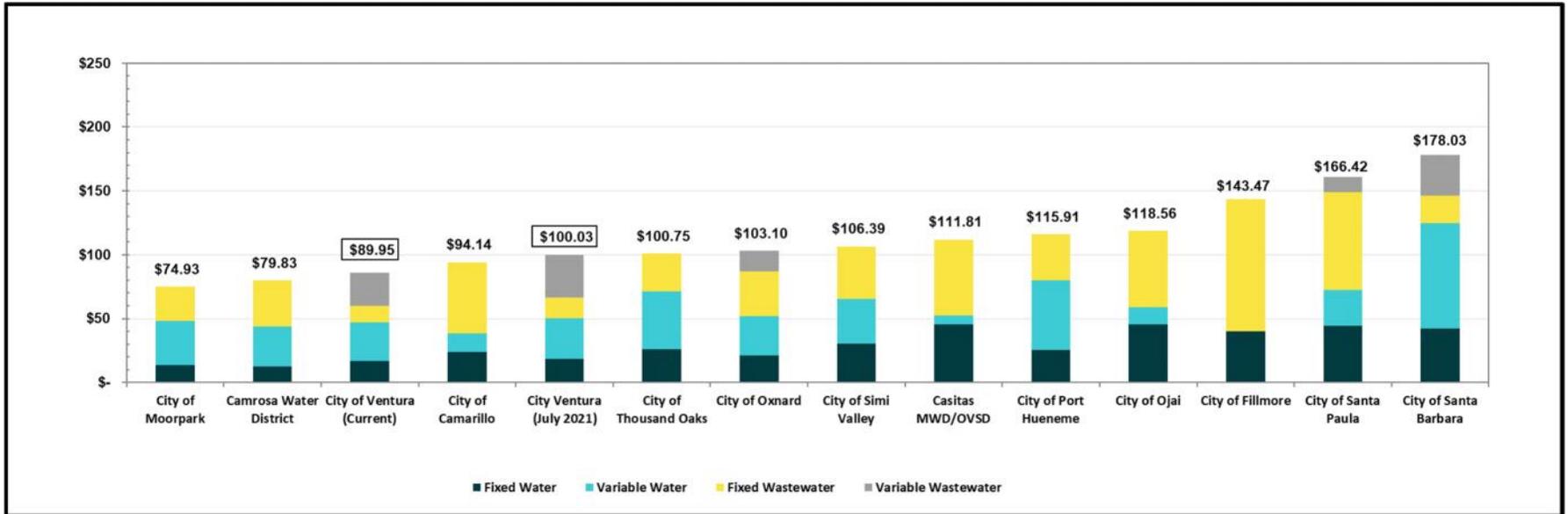


Figure 1-12: Combined Monthly Bill Comparison for Single Family Residential (9 HCF/Month)



2. Introduction

2.1. Agency Overview

The City of San Buenaventura's (Ventura) water and wastewater department (Ventura Water) provides water and wastewater service to a population of over 109,000 people through about 30,000 metered water connections and sewer connections. Most Ventura Water customers are located within city limits. Additionally, about 1,000 metered water connections served by Ventura Water are located outside of city limits, mainly within the City's Sphere of Influence. Ventura Water's water system consists of three water treatment plants, 385 miles of distribution pipelines, over 20 pump stations, and over 30 storage reservoirs. The wastewater system consists of a wastewater treatment plant, 290 miles of collection pipelines, 10 miles of sewer mains, and over 10 lifts stations.

Ventura Water's current potable water supply sources include the Ventura River at Foster Park, Mound Groundwater Basin, Oxnard Plain Groundwater Basin, Santa Paula Groundwater Basin, and treated water from Casitas Municipal Water District (Casitas MWD). Future supply sources will include imported water from the State Water Project upon completion of the State Water Interconnection Project and indirect potable reuse upon completion of the VenturaWaterPure project. Ventura Water customers significantly reduced water demand through conservation and efficiency measures in response to pervasive drought conditions since 2015. Water demand has been consistent at lower levels through 2019.

Ventura Water also maintains a wastewater collection system which transports wastewater discharge from customers to its Ventura Water Reclamation Facility (VWRF), which provides tertiary wastewater treatment. A portion of treated wastewater is delivered to reclaimed water customers for non-potable Non-Residential Irrigation and the remainder is discharged to the Santa Clara River Estuary. To meet regulatory wastewater discharge requirements (both the VWRF National Pollutant Discharge Elimination System (NPDES) Permit and Tertiary Treated Flows Federal Consent Decree (Consent Decree)), Ventura Water is planning to construct a new Advanced Water Purification Facility (AWPF) over the next five years as part of its VenturaWaterPure Program. Upon completion, tertiary treated wastewater currently discharged to the Santa Clara River Estuary will be treated to a higher standard through a multi-stage purification process before being conveyed to local injection sites into the local groundwater basin. This program – VenturaWaterPure - will achieve the requirements of the VWRF NPDES Permit and the Consent Decree while adding an additional source of local and reliable potable water supply.

2.2. Study Overview

Public water and wastewater utilities in California typically perform a cost of service analysis every five to ten years to ensure that customers are appropriately charged for service commensurate with the cost to provide service. Ventura Water last conducted a water and wastewater cost of service study in 2014, which established proposed rates over a four-year period through Fiscal Year (FY) 2017-18. Additionally, Ventura Water conducted a water shortage rate study in 2015 to establish water shortage rates to recover sufficient rate revenue during periods of drought or other water supply shortages. No rate increases have been implemented since the last year of adopted rates went into effect in July 2017.

Ventura Water engaged Raftelis in 2020 to conduct a water and wastewater cost of service study to establish a proposed five-year schedule of water and wastewater rates through FY 2025-26. The results of the study are documented within this report. Note that proposed rates cannot be implemented until formally adopted by City

Council after a public hearing. Proposition 218 requires that Ventura Water customers must be mailed a public hearing notice detailing any proposed rate changes no fewer than 45 days before the public hearing. The notice includes a customer's right to protest the rate proposal.

Study Objectives

The major objectives of this study are to:

- » Develop a ten-year financial plan that sufficiently funds Ventura Water's water and wastewater operations and maintenance (O&M) expenses, debt service payments, and capital expenditures while adequately funding reserves and achieving debt coverage requirements.
- » Conduct cost of service analyses that establish a clear nexus between the cost to serve water and wastewater customers and the rates charged to customers, per Proposition 218 and industry standards.
- » Review Ventura Water's existing water and wastewater rate structures to ensure that proposed rates achieve the financial and policy objectives of the agency.
- » Develop a five-year schedule of water and wastewater rates that are fair, equitable, and compliant with Proposition 218 requirements.
- » Develop a five-year schedule of updated water shortage rates that consider the City's Water Shortage Event Contingency Plan.

Key Changes Since Prior Rate Study

Reduction in baseline water demand: Since the prior cost of service study was conducted in 2014, Ventura Water operations have undergone substantial changes. Most notably, drought conditions through 2016 in California resulted in significant reductions in baseline water demand. Total water demand in FY 2019-20 was approximately 18 percent lower than in FY 2012-13 (which water demand projections in the 2014 rate study were based on). Ventura Water collects approximately 70 percent of its water rate revenues through Water Volume Rates charged per unit of water delivered and 75 percent of its wastewater rate revenues through Flow Charges based on water use. Reductions in baseline water demand therefore result in the need to increase variable rates to offset reductions in variable billing units. Water shortage rates in effect over the last five years mitigated the impact of reduced water demand on rate revenues. Because water demand has hardened because of changes in customer water conservation practices since 2015, proposed water and wastewater rates are designed to reflect new normal water demand.

Capital Expenditures: Ten-year projected water and wastewater capital expenditures (through FY 2029-30) in this study are over \$16.8M higher per year than the prior study's ten-year projected capital expenditures (through FY 2022-23). This represents greater than a 50 percent increase in annual average water and wastewater capital expenditures relative to the prior study (which current rates are based on). Slightly over half of ten-year projected water and wastewater capital expenditures through FY 2029-30 are associated with the VenturaWaterPure Program components. A significant portion of the remaining R&R capital program represents a backlog of delayed projects.

VenturaWaterPure Program: In the interim years since the last rate study the VenturaWaterPure Program has been selected by the City as the preferred alternative project to achieve the requirements of the VWRf NPDES Permit and the Consent Decree. As designed, the multi-benefit program has an estimated value of approximately \$260M across all project components and phases (Phases 1a and 1b). The project components consist of several capital improvement projects including land acquisition for the Advanced Water Purification Facility (AWPF), Advanced Water Purification Facility, Brine line and Ocean Outfall, Aquifer Storage and Recovery, pipelines,

pump stations and Wetlands Improvements. The program is larger in scale and value than the alternatives modeled in the prior rate study because it is now a multi-benefit program comprised of several project components. The multi-benefits include meeting the City's regulatory and legal requirements, improved system water quality, and a new drought-resilient water supply source. Moderating the effects of this change are current favorable terms and interest rates for public debt and low-interest government loans.

3. Legal Requirements and Rate Setting Methodology

3.1. Legal Requirements

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

Proposition 218, reflected in the California Constitution as Article XIII D, was enacted in 1996 to ensure that rates and fees are reasonable and proportional to the cost of providing service. The principal requirements, as they relate to public water and wastewater service are as follows:

1. A property-related charge (which include water or wastewater rates) imposed by a public agency on a parcel shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the charge shall not be used for any purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of the property.
5. A written notice of the proposed charge shall be mailed to both the customer of record and owner of record of each parcel at least 45 days prior to the public hearing, when the agency considers all written protests against the charge.

As stated in the American Water Works Association's (AWWA) *Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices - M1 Seventh Edition* (Manual M1), "water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." Raftelis follows industry standard rate setting methodologies set forth by the AWWA's *Manual M1* to ensure the water cost of service analysis presented in this study meets Proposition 218 requirements and establishes rates that do not exceed the proportionate cost of providing water services on a parcel basis. The methodology in the Manual M1 is a nationally recognized industry ratemaking standard which courts have recognized as consistent with Proposition 218. Similarly, the wastewater cost of service presented in this study was conducted in accordance with principles established by the Water Environment Federation (WEF) and described in *Financing and Charges for Wastewater Systems*.

California Constitution Article X, Section 2

California Constitution Article X, Section 2 mandates that water resources be put to beneficial use and that the waste or unreasonable use of water be prevented. Section 106 of the Water Code declares that the highest priority use of water is for domestic purposes, with Non-Residential Irrigation the next highest priority. Thus, management of water resources is part of the property-related service provided by public water suppliers to ensure the resource is available over time. Ventura Water currently has inclining tiered (also known as inclining block) water rates to incentivize residential customers to conserve water. The inclining tiered rates must be based on the proportionate costs incurred to provide water to customers to achieve compliance with Proposition 218. "Inclining" tiered rate structures (which are synonymous with "increasing" tier rate structures and "tiered" rates), when properly designed, allow a water utility to send conservation price signals to customers. Due to heightened interest in water conservation and efficiency of water use, tiered water rates have gained widespread use, especially in relatively

water-scarce regions like Southern California. Tiered rates meet the requirements of Proposition 218 as long as they reasonably reflect the proportionate cost of providing service for each tier.

3.2. Rate-Setting Methodology

This study was conducted using industry-standard principles outlined by the AWWA's *Manual M1* and WEF's *Financing and Charges for Wastewater Systems*. The process and approach Raftelis utilized in the study to determine rates is informed by Ventura Water's policy objectives, the current system of rates, and the legal requirements in California (namely, Proposition 218). The resulting financial plans, cost of service analyses, and rate design process follows five key steps, outlined below, to determine proposed rates that fulfill Ventura Water's objectives, meet industry standards, and comply with relevant regulations. The overall process outlined below applies to the cost of service analyses for both water and wastewater.

- 1. Financial Plan:** The first study step is to develop a multi-year financial plan that projects the Water and Wastewater Enterprises' revenues, expenses, capital project financing, annual debt service, and reserve funding. The financial plan is used to determine revenue adjustments needed to recover adequate revenues to fund expenses and reserves.
- 2. Revenue Requirement Determination:** After completing the financial plan, the rate-making process begins with the determination of the revenue requirement for the test year, also known as the cost-of service year. The test year for this study is FY 2020-21. The revenue requirement should sufficiently fund the Water and Wastewater Enterprises' operating costs, annual debt service (including coverage requirements), capital expenditures, and reserve funding needs.
- 3. Cost of Service Analysis:** The annual cost of providing water or wastewater service (i.e. the revenue requirement) is then distributed to customer classes commensurate with their use of and burden on the system. A cost of service analysis involves the following steps:
 - » Functionalize costs – the different components of the revenue requirement are categorized into functions such as supply, transmission, storage, customer service, etc. (for water) and collection, treatment, customer, etc. (for wastewater)
 - » Allocate to cost causation components – the functionalized costs are then allocated to cost causation components such as supply, base delivery, peaking, etc. (for water) and flow, strength, etc. (for wastewater)
 - » Develop unit costs – unit costs for each cost causation component are determined using units of service
 - » Distribute cost components – the cost components are allocated to each customer class and tier using the unit costs in proportion to their demand and burden on the system.

A water cost of service analysis considers both the average water demand and peak demand. Peaking, or extra-capacity, costs are incurred during periods of peak consumption, most often coinciding with summer water use. There are additional capacity-related costs associated with designing, constructing, operating, maintaining, and replacing facilities to meet peak demand. Patterns of use impose additional costs on a water utility and are used to determine the cost burden on peaking-related facilities. Similarly, a wastewater cost of service analysis considers the amount of wastewater treatment plant influent contributed by each customer class in order to account for customer differences in the quantity and strength of wastewater discharges.

4. **Rate Design:** After allocating the revenue requirement to each customer class, the rate design and calculation process can begin. Rates do more than simply recover costs; within the legal framework and industry standards, properly designed rates should support and optimize Ventura Water’s policy objectives. Rates also act as a public information tool in communicating policy objectives to customers. This process also includes a bill impact analysis.

5. **Administrative Record Preparation and Rate Adoption:** The final step in a rate study is to develop the administrative record in conjunction with the rate adoption process. This report serves as the administrative record for this study. The administrative record documents the study results and presents the methodologies, rationale, justifications, and calculations used to determine the proposed rates. A thorough and methodological administrative record serves two important functions: maintaining defensibility in a stringent legal environment and communicating the rationale for revenue adjustments and proposed rates to customers and key stakeholders.

4. Water Rate Study

4.1. Key Inputs and Assumptions

Raftelis developed a water rate model in Microsoft Excel to project financial calculations over the next ten fiscal years with projections shown in this report through the five-year rate-setting period of FY 2025-26 (i.e. the “study period”). Please refer to **Appendix B** for ten-year financial plan projections through FY 2029-30. The City’s fiscal year spans from July 1 through June 30. Projections in future years were generally made based on actual or estimated data for FY 2018-19 or FY 2019-20 or the adopted budget for FY 2020-21 using key assumptions outlined below. Assumptions were discussed with, and reviewed by, Ventura Water, Public Works, and Finance staff to ensure that the City water system’s unique characteristics are accurately accounted for. Note that most table values shown throughout this report are rounded to the last digit shown and may therefore not sum precisely to the totals shown.

4.1.1. CURRENT WATER RATES

Table 4-1 shows the rates currently in effect in FY 2020-21, which were developed during the prior rate study in 2014. Customers are currently billed bimonthly for two primary charges: 1) Water Service Charges and 2) Water Volume Rates per hundred cubic feet (HCF)⁴ of water delivered. The Water Service Charge is a fixed bimonthly charge that varies based on meter size. Additionally, customers with private fire lines are subject to a fixed bimonthly Fire Line Service Charge. Water Volume Rates vary based on customer classes. Residential customers are subject to a four-tiered Water Volume Rate structure. All other customer classes are subject to a uniform Water Volume Rate. Base water rates have not changed since July 2017. However, Water Volume Rates were reduced at end of FY 2019-20 when a Stage 3 water shortage was downgraded to Stage 2. Current Water Volume Rates shown throughout this study reflect Stage 2 shortage rates. All current rates and tier allotments are shown on a bimonthly basis. However, Ventura Water plans to transition from bimonthly to monthly billing beginning in July 2021. All proposed rates and tier allotments presented in subsequent sections of this report are therefore shown in monthly terms.

⁴ One HCF equals approximately 748 gallons.

Table 4-1: Current Water Rates

Description	FY 2020-21
Bimonthly Water Service Charge	
3/4-inch water meter	\$33.69
1-inch water meter	\$51.03
1.5-inch water meter	\$94.38
2-inch water meter	\$146.42
3-inch water meter	\$311.18
4-inch water meter	\$553.98
6-inch water meter	\$1,134.97
8-inch water meter	\$2,088.84
10-inch water meter	\$3,302.85
12-inch water meter	\$4,343.44
Bimonthly Fire Line Service Charge	
1-inch fire line	\$8.79
2-inch fire line	\$8.79
3-inch fire line	\$25.49
4-inch fire line	\$54.29
6-inch fire line	\$157.68
8-inch fire line	\$336.01
10-inch fire line	\$604.25
12-inch fire line	\$976.02
Stage 2 Water Volume Rates (per HCF)	
Single Family Residential	
<i>Tier 1 (0-6 HCF per bimonthly billing period)</i>	\$2.77
<i>Tier 2 (7-14 HCF per bimonthly billing period)</i>	\$3.12
<i>Tier 3 (15-30 HCF per bimonthly billing period)</i>	\$4.62
<i>Tier 4 (>30HCF per bimonthly billing period)</i>	\$7.73
Multiple Family Residential	
<i>Tier 1 (0-6 HCF per bimonthly billing period)</i>	\$2.77
<i>Tier 2 (7-10 HCF per bimonthly billing period)</i>	\$3.12
<i>Tier 3 (11-16HCF per bimonthly billing period)</i>	\$4.62
<i>Tier 4 (>16 HCF per bimonthly billing period)</i>	\$7.73
Non-Residential	\$3.98
Non-Residential Irrigation	\$4.25
Institutional/Interruptible	\$3.29
Untreated Water	\$3.44
Reclaimed Water	\$0.95
Outside City Limits Surcharge (per HCF)	
All Customer Classes	\$0.60

Current residential tier allotments are shown in **Table 4-2**. For single family residential customers: the first 6 HCF used each bimonthly billing period is charged at the lowest rate (Tier 1), the next 8 HCF at a higher rate (Tier 2), the next 16 HCF at an even higher rate (Tier 3), and any additional use at the highest rate (Tier 4). For multiple family residential customers: the first 6 HCF used per dwelling unit each bimonthly billing period is charged at the lowest rate (Tier 1), the next 4 HCF at a higher rate (Tier 2), the next 6 HCF at an even higher rate (Tier 3), and

any additional use at the highest rate (Tier 4). Multiple family residential customers have smaller tier allotments due to smaller average household size and reduced outdoor water use on a per dwelling unit basis.

Table 4-2: Current Residential Tier Allotments for Water Volume Rates

Bimonthly Tier Allotments	Single Family Residential	Multiple Family Residential (per Dwelling Unit)
Tier 1	0-6 HCF	0-6 HCF
Tier 2	7-14 HCF	7-10 HCF
Tier 3	15-30 HCF	11-16 HCF
Tier 4	>30 HCF	>16 HCF

Some water utilities include elevation electricity surcharges for customer parcels in elevated zones, but only if warranted by the water system’s design, if the costs applicable to the elevated zones can feasibly be calculated and assigned with relative certainty and consistent with cost of service principles, and if the relative differential costs are not outweighed by the administrative costs of evaluating and administering the elevation surcharge. Most utilities in California do not have these surcharges due to their complexity. Ventura Water’s existing water rate structure does not include electricity surcharges for Ventura Water’s elevated distribution zones and we do not recommend that they be added for this study period. Raftelis reviewed the issue with Ventura Water staff and confirmed that it is not feasible to reasonably assign electrical costs to specific zones due the complex nature of the City’s water system and its 16 pressure zones, and the movement of water throughout that system. Additionally, the lower pressure zones receive a storage benefit from the storage in tanks and reservoirs in the elevated zones, especially in the event of an emergency. Finally, it is anticipated that any modest cost differential that might exist if an elevation electricity surcharge could be calculated is outweighed by the administrative costs of determining, administering, and applying such a surcharge.

4.1.2.WATER ENTERPRISE FINANCIAL ASSUMPTIONS

Inflationary assumptions shown in **Table 4-3** are used to escalate projected non-rate revenues and operations and maintenance (O&M) expenses beyond FY 2020-21. For O&M expenses, the general inflation rate is consistent with long-term changes in the Consumer Price Index (CPI). Salary and benefit inflationary increases were provided by Ventura Water and Finance staff, as water utility personnel cost increases are typically agency-specific. All other O&M expense inflationary assumptions were developed by Raftelis based on professional judgement and available industry indices. The capital inflation factor is used to adjust uninflated capital project cost estimates provided to Raftelis by Ventura Water and Public Works staff.

Table 4-3: Water Enterprise Inflationary Assumptions

Inflationary Categories	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Non-Rate Revenues					
Miscellaneous	0.00%	0.00%	0.00%	0.00%	0.00%
Expenses					
General	3.00%	3.00%	3.00%	3.00%	3.00%
Salaries	5.38%	3.87%	3.53%	3.53%	1.08%
Benefits	5.38%	3.87%	3.53%	3.53%	1.08%
Utilities	5.00%	5.00%	5.00%	5.00%	5.00%
Chemicals	5.00%	5.00%	5.00%	5.00%	5.00%
Water Supply	3.00%	3.00%	3.00%	3.00%	3.00%
Capital	4.00%	4.00%	4.00%	4.00%	4.00%

Additional financial assumptions relating to interest earnings are shown in **Table 4-4**. Interest earnings on cash reserves are projected assuming a one percent annual interest rate.

Table 4-4: Additional Water Enterprise Financial Assumptions

Description	Value
Interest Earnings	
Annual Interest Rate	1.0%

4.1.3.PROJECTED WATER SERVICE CONNECTIONS

Water connection growth projections are necessary to estimate water demand and rate revenues over the study period. Ventura Water staff provided Raftelis with the number of water meters and fire lines by size for FY 2019-20. Raftelis then applied a 0.54% annual account growth rate⁵ to all connection types to project the number of water meters and fire lines in each year over the study period (see **Table 4-5**).

Table 4-5: Number of Water Meters and Fire Lines

Description	Actual FY 2019-20	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Projected Annual Growth	N/A	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%
Number of Water Meters							
3/4-inch water meter	25,063	25,198	25,334	25,471	25,609	25,747	25,886
1-inch water meter	2,487	2,500	2,514	2,528	2,541	2,555	2,569
1.5-inch water meter	951	956	961	966	972	977	982
2-inch water meter	734	738	742	746	750	754	758
3-inch water meter	115	116	116	117	118	118	119
4-inch water meter	70	70	71	71	72	72	72
6-inch water meter	74	74	75	75	76	76	76
8-inch water meter	7	7	7	7	7	7	7
10-inch water meter	2	2	2	2	2	2	2
12-inch water meter	0	0	0	0	0	0	0
Temporary meters on hydrant	69	69	70	70	71	71	71
Total	29,572	29,732	29,892	30,054	30,216	30,379	30,543
Number of Fire Lines							
1-inch fire line	2,451	2,464	2,478	2,491	2,504	2,518	2,531
2-inch fire line	27	27	27	27	28	28	28
3-inch fire line	2	2	2	2	2	2	2
4-inch fire line	328	330	332	333	335	337	339
6-inch fire line	267	268	270	271	273	274	276
8-inch fire line	117	118	118	119	120	120	121
10-inch fire line	16	16	16	16	16	16	17
12-inch fire line	0	0	0	0	0	0	0
Total	3,208	3,225	3,243	3,260	3,278	3,296	3,313

⁵ From Ventura Water's 2020 Comprehensive Water Resources Report. The growth rate is provided to Ventura Water staff by Planning staff and is based on the Department of Finance historical data for population.

4.1.4.PROJECTED WATER SALES

Ventura Water staff provided Raftelis with total annual water use data by customer class for FY 2016-17 through FY 2019-20. Raftelis worked closely with Ventura Water staff to develop water use projections over the study period. Water demand projections depend on two key assumptions: new connection growth and water demand per connection. Beginning in FY 2020-21, annual water use was projected at the customer class level by increasing prior year water use based on both assumed connection growth and water demand per connection. **Table 4-6** shows projected water use by customer class over the study period based on the current water rate structure. A five percent increase in demand per connection is assumed in FY 2020-21 because of the downgrade from a Stage 3 water shortage to Stage 2 at the end of FY 2019-20. It is assumed that after FY 2020-21 there will be no further increases in water demand per connection. Total water use is shown in both hundred cubic feet and acre-feet (AF).

Table 4-6: Projected Water Use Under Existing Rate Structure

Description	Actual FY 2019-20	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Growth Assumptions							
Account Growth	N/A	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%
Demand per Connection	N/A	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Water Sales Increase⁶	N/A	5.57%	0.54%	0.54%	0.54%	0.54%	0.54%
Water Sales (HCF) - Inside City Limits							
Residential Tier 1	1,511,080	1,595,202	1,603,816	1,612,477	1,621,184	1,629,939	1,638,740
Residential Tier 2	1,078,603	1,138,649	1,144,798	1,150,980	1,157,195	1,163,444	1,169,727
Residential Tier 3	745,692	787,204	791,455	795,729	800,026	804,346	808,690
Residential Tier 4	211,416	223,185	224,390	225,602	226,820	228,045	229,277
Non-Residential	1,363,580	1,439,490	1,447,264	1,455,079	1,462,936	1,470,836	1,478,779
Non-Residential Irrigation	5,994	6,328	6,362	6,396	6,431	6,465	6,500
Institutional/Interruptible	150,475	158,852	159,710	160,572	161,439	162,311	163,188
Untreated Water	0	0	0	0	0	0	0
Reclaimed Water	244,429	258,036	259,430	260,831	262,239	263,655	265,079
Casitas Direct	4	4	4	4	4	4	4
Other ⁷	987	1,042	1,048	1,053	1,059	1,065	1,070
Subtotal	5,312,260	5,607,994	5,638,277	5,668,723	5,699,334	5,730,111	5,761,053
Water Sales (HCF) - Outside City Limits excluding Saticoy Country Club System							
Residential Tier 1	35,367	37,336	37,538	37,741	37,944	38,149	38,355
Residential Tier 2	26,886	28,383	28,536	28,690	28,845	29,001	29,157
Residential Tier 3	22,443	23,692	23,820	23,949	24,078	24,208	24,339
Residential Tier 4	19,092	20,155	20,263	20,373	20,483	20,593	20,705
Non-Residential	96,152	101,504	102,053	102,604	103,158	103,715	104,275
Non-Residential Irrigation	1,717	1,813	1,822	1,832	1,842	1,852	1,862
Untreated Water	25,260	26,666	26,810	26,955	27,101	27,247	27,394
Casitas Direct	33,953	35,843	36,037	36,231	36,427	36,624	36,821
Other ¹	5,009	5,288	5,316	5,345	5,374	5,403	5,432
Subtotal	265,879	280,680	282,196	283,720	285,252	286,792	288,341
Water Sales (HCF) - Saticoy Country Club System							
Residential Tier 1	5,704	6,022	6,054	6,087	6,120	6,153	6,186
Residential Tier 2	5,018	5,297	5,325	5,354	5,383	5,412	5,441
Residential Tier 3	3,713	3,920	3,941	3,962	3,984	4,005	4,027
Residential Tier 4	3,848	4,062	4,084	4,106	4,128	4,150	4,173
Non-Residential Irrigation	3,396	3,585	3,605	3,624	3,644	3,664	3,683
Golf Course ⁸	113,612	113,612	113,612	113,612	113,612	113,612	113,612
Subtotal	135,291	136,497	136,621	136,745	136,870	136,996	137,122
Total Water Sales (HCF)	5,713,429	6,025,171	6,057,093	6,089,188	6,121,456	6,153,899	6,186,516
Total Water Sales (AF)	13,116	13,832	13,905	13,979	14,053	14,127	14,202

⁶ Equal to the compounded percent increase from both account growth and demand per connection.

⁷ Other includes water use associated with fire training and other miscellaneous water use.

⁸ Growth assumptions are not applied to water use associated with The Saticoy Club's golf course.

4.1.5.PROJECTED WATER SUPPLY

Table 4-7 shows the water supply mix projected to meet water demand over the study period. Ventura Water staff provided Raftelis with the anticipated amount of water available from each source of supply over the study period. Raftelis then determined the projected supply mix based on the amount of water supply required to satisfy demand, after water loss (due to physical leakage and apparent losses). Water supply availability is not shown for reclaimed water (which is supplied by the Ventura Water Reclamation Facility) or for the Saticoy Country Club System (which is supplied by the Saticoy Country Club System wells and which cannot physically receive water from other sources). The remaining potable water supply mix was determined based on the following assumed prioritization: first Ventura WaterPure (no production until FY 2025-26), then groundwater production from the three basins, then Ventura River - Foster Park, and lastly Casitas Municipal Water District (Casitas). State Water is anticipated to be available by FY 2025-26. Due to the uncertainty of the allocation from year to year, **Table 4-7** does not include State Water in the total available supply amounts. State Water will be used to make up for losses in other supply sources and to improve water quality when available. Ventura Water’s supply mix can vary significantly from year to year and is not based on a rigid prioritization policy. However, simplifying assumptions are necessary to develop reasonable supply mix projections over the study, assuming normal conditions on average.

Table 4-7: Projected Water Supply Mix

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Potable Water Supply Availability (AF)						
Ventura River - Foster Park	1,573	1,298	1,573	1,573	1,573	1,573
Groundwater - Mound	2,400	4,000	4,000	4,000	4,000	4,000
Groundwater - Santa Paula	2,450	2,450	2,450	3,041	3,041	3,041
Groundwater - Oxnard Plain	4,827	4,700	4,573	4,446	4,319	4,192
Purchased Water - Casitas	3,858	3,922	3,985	4,049	4,071	4,094
Ventura WaterPure	0	0	0	0	0	2,800
State Water Project	0	0	0	0	0	0
Total (AF)	15,108	16,370	16,581	17,109	17,004	19,700
Water Supply Required to Meet Demand						
Water Demand (AF)	13,832	13,905	13,979	14,053	14,127	14,202
Water Loss	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Required Water Supply (AF) ⁹	14,873	14,952	15,031	15,111	15,191	15,271
Projected Water Supply Mix (AF)						
Reclaimed Water	637	640	644	647	651	654
Surface Water - Foster Park	1,573	1,298	1,573	1,573	1,573	155
Groundwater - Mound	2,400	4,000	4,000	4,000	4,000	4,000
Groundwater - Santa Paula	2,450	2,450	2,450	3,041	3,041	3,041
Groundwater - Oxnard Plain	4,827	4,700	4,573	4,446	4,319	4,192
Groundwater – Saticoy CC	337	337	338	338	338	338
Purchased Water - Casitas Direct	88	89	89	90	90	91
Purchased Water – Casitas Other	2,561	1,437	1,364	976	1,178	0
Ventura WaterPure	0	0	0	0	0	2,800
State Water Project	0	0	0	0	0	0
Total (AF)	14,873	14,952	15,031	15,111	15,191	15,271

⁹ Equal to water demand divided by (100%-7%)

4.2. Water Financial Plan

Section 4.2 details the development of a proposed Water Enterprise financial plan for Ventura Water over the study period. The following subsections include estimates and projections of annual revenues, O&M expenses, debt service payments, capital expenditures, and reserve funding through FY 2025-26. The overall purpose of the financial plan is to determine annual water rate revenues required to achieve sufficient cash flow, maintain adequate reserves, and meet debt coverage requirements.

4.2.1. WATER ENTERPRISE REVENUE UNDER CURRENT RATES

The Water Enterprise’s revenue sources consist of water rates, developer fees, miscellaneous fees, interest earnings on cash reserves, and other non-rate revenues. The rate revenue projections shown in this section assume that current FY 2020-21 water rates are effective throughout the study period, and therefore represent estimated revenues in the absence of any water rate increases. This status quo scenario provides a baseline from which Raftelis evaluated the need for revenue adjustments (i.e. gross rate revenue increases).

Calculated Water Rate Revenues

Raftelis projected annual water rate revenues from Water Service Charges, Fire Line Service Charges, and Water Volume Rates over the study period based on current FY 2020-21 water rates (from **Table 4-1**), projected number of water meters/private fire lines (from **Table 4-5**), and projected annual water use (from **Table 4-6**). **Table 4-8** shows projected Water Service Charge and Fire Line Service Charge revenues under current rates over the study period, calculated as follows:

$$\text{Fixed Charge Revenue} = [\text{FY 2020-21 bimonthly charge}] \times [\text{Number of connections}] \times [6 \text{ Bills per year}]$$

Table 4-8: Projected Fixed Charge Revenue from Existing Rates

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Water Service Charges						
3/4-inch water meter	\$5,093,592	\$5,121,098	\$5,148,752	\$5,176,555	\$5,204,508	\$5,232,613
1-inch water meter	\$765,582	\$769,716	\$773,872	\$778,051	\$782,253	\$786,477
1.5-inch water meter	\$541,440	\$544,364	\$547,304	\$550,259	\$553,231	\$556,218
2-inch water meter	\$648,316	\$651,817	\$655,336	\$658,875	\$662,433	\$666,010
3-inch water meter	\$215,874	\$217,039	\$218,211	\$219,390	\$220,574	\$221,766
4-inch water meter	\$233,928	\$235,191	\$236,461	\$237,738	\$239,022	\$240,313
6-inch water meter	\$506,648	\$509,384	\$512,134	\$514,900	\$517,680	\$520,476
8-inch water meter	\$88,205	\$88,681	\$89,160	\$89,642	\$90,126	\$90,612
10-inch water meter	\$39,848	\$40,063	\$40,280	\$40,497	\$40,716	\$40,936
12-inch water meter	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$8,133,433	\$8,177,354	\$8,221,511	\$8,265,907	\$8,310,543	\$8,355,420
Fire Line Service Charges						
1-inch fire line	\$129,964	\$130,666	\$131,371	\$132,081	\$132,794	\$133,511
2-inch fire line	\$1,432	\$1,439	\$1,447	\$1,455	\$1,463	\$1,471
3-inch fire line	\$308	\$309	\$311	\$313	\$314	\$316
4-inch fire line	\$107,420	\$108,000	\$108,583	\$109,169	\$109,759	\$110,351
6-inch fire line	\$253,967	\$255,339	\$256,718	\$258,104	\$259,498	\$260,899
8-inch fire line	\$237,153	\$238,433	\$239,721	\$241,015	\$242,317	\$243,625
10-inch fire line	\$58,321	\$58,636	\$58,953	\$59,271	\$59,591	\$59,913
12-inch fire line	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$788,564	\$792,822	\$797,104	\$801,408	\$805,736	\$810,086
Total	\$8,921,997	\$8,970,176	\$9,018,615	\$9,067,315	\$9,116,279	\$9,165,507

Table 4-9 shows projected Water Volume Rate revenue under current rates over the study period, calculated as follows:

$$\text{Water Volume Rate Revenue} = [\text{FY 2020-21 rate per HCF}] \times [\text{Annual Water Use in HCF}]$$

Table 4-9: Projected Commodity Charge Revenues Under Current Water Rates

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Water Sales Revenue - Inside City Limits						
Residential Tier 1	\$4,418,710	\$4,442,571	\$4,466,561	\$4,490,680	\$4,514,930	\$4,539,310
Residential Tier 2	\$3,552,586	\$3,571,770	\$3,591,057	\$3,610,449	\$3,629,945	\$3,649,547
Residential Tier 3	\$3,636,884	\$3,656,523	\$3,676,268	\$3,696,120	\$3,716,079	\$3,736,146
Residential Tier 4	\$1,725,222	\$1,734,538	\$1,743,905	\$1,753,322	\$1,762,790	\$1,772,309
Non-Residential	\$5,729,172	\$5,760,110	\$5,791,214	\$5,822,487	\$5,853,928	\$5,885,540
Non-Residential Irrigation	\$26,893	\$27,038	\$27,184	\$27,331	\$27,478	\$27,627
Institutional/Interruptible	\$522,623	\$525,445	\$528,282	\$531,135	\$534,003	\$536,887
Untreated Water	\$0	\$0	\$0	\$0	\$0	\$0
Reclaimed Water ¹⁰	N/A	N/A	N/A	N/A	N/A	N/A
Casitas Direct ¹¹	N/A	N/A	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	\$19,612,089	\$19,717,994	\$19,824,471	\$19,931,524	\$20,039,154	\$20,147,365
Water Sales Revenue - Outside City Limits excluding Saticoy Country Club System						
Residential Tier 1	\$125,823	\$126,503	\$127,186	\$127,873	\$128,563	\$129,258
Residential Tier 2	\$105,583	\$106,153	\$106,726	\$107,303	\$107,882	\$108,465
Residential Tier 3	\$123,674	\$124,342	\$125,014	\$125,689	\$126,367	\$127,050
Residential Tier 4	\$167,888	\$168,794	\$169,706	\$170,622	\$171,544	\$172,470
Non-Residential	\$464,890	\$467,401	\$469,925	\$472,462	\$475,013	\$477,578
Non-Residential Irrigation	\$8,791	\$8,839	\$8,886	\$8,934	\$8,982	\$9,031
Untreated Water	\$107,732	\$108,313	\$108,898	\$109,486	\$110,077	\$110,672
Casitas Direct	N/A	N/A	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	\$1,104,381	\$1,110,345	\$1,116,341	\$1,122,369	\$1,128,430	\$1,134,523
Water Sales Revenue – Saticoy Country Club System						
Residential Tier 1	\$20,293	\$20,403	\$20,513	\$20,624	\$20,735	\$20,847
Residential Tier 2	\$19,704	\$19,811	\$19,918	\$20,025	\$20,133	\$20,242
Residential Tier 3	\$20,462	\$20,572	\$20,683	\$20,795	\$20,907	\$21,020
Residential Tier 4	\$33,835	\$34,018	\$34,202	\$34,386	\$34,572	\$34,759
Non-Residential Irrigation	\$16,421	\$16,510	\$16,599	\$16,689	\$16,779	\$16,869
Golf Course Unmetered	N/A	N/A	N/A	N/A	N/A	N/A
Subtotal	\$110,716	\$111,314	\$111,915	\$112,520	\$113,127	\$113,738
Total	\$20,827,187	\$20,939,653	\$21,052,728	\$21,166,412	\$21,280,711	\$21,395,627

¹⁰ Reclaimed water sales revenue is included within the City's Wastewater Operating Fund (Fund 51). It is therefore accounted for in the wastewater financial plan rather than the water financial plan.

¹¹ Casitas Direct customers are subject to Casitas Municipal Water District pass-through rates only.

Table 4-10 shows additional miscellaneous rate revenue projections associated with Casitas Direct customers and temporary meters. Casitas Direct customers receive water directly off of Ventura Water’s transmission line from Casitas, and are only charged by Ventura Water for the direct pass-through of Casitas MWD wholesale costs. Temporary meters are largely associated with construction uses. Casitas Direct pass-through rates and temporary meter charges are outside of the scope of this rate study, and are therefore not included with other rate revenues.

Table 4-10: Projected Miscellaneous Rate Revenues

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Casitas Direct Meter Charge ¹²	\$36,843	\$41,258	\$43,321	\$45,487	\$47,761	\$50,149
Casitas Direct Adjudication Impact Charge ¹³	\$9,783	\$9,783	\$9,783	\$9,783	\$9,783	\$9,783
Casitas Direct Variable Rates ¹⁴	\$49,828	\$56,224	\$62,180	\$68,768	\$76,053	\$84,110
Temporary Meter Charges ¹⁵	\$50,642	\$50,915	\$51,190	\$51,467	\$51,745	\$52,024
Total	\$147,095	\$158,180	\$166,474	\$175,504	\$185,342	\$196,066

¹² Casitas Direct customers assumed to be responsible for 10% of City’s Casitas MWD Meter Charges (from **Table 4-15**).

¹³ Casitas Direct customers assumed to be responsible for 10% of City’s Casitas MWD Casitas Adjudication Impact Charges (from **Table 4-15**).

¹⁴ Casitas Direct customers variable charges equal to annual water use in HCF (from **Table 4-6**) multiplied by the projected Casitas Commodity Charge rate per HCF (from **Table 4-15**).

¹⁵ Annual temporary meter charge revenue is calculated based on the existing rate of \$2 per day multiplied by number of temporary meters (from **Table 4-5**) multiplied by 365 days per year.

Other Water Enterprise Revenues

Table 4-11 shows all other Water Enterprise revenues. All FY 2020-21 other revenues are based on the City’s FY 2020-21 budget and escalated annually by the miscellaneous inflation rate (from **Table 4-3**), except where noted otherwise. Interest revenue is estimated in the financial plan model beginning in FY 2020-21 based on projected fund balances and the assumed interest rate (from **Table 4-4**).

Table 4-11: Other Water Enterprise Revenues

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Water Operating Fund (52) – Other Revenues						
Miscellaneous Fees	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000
Interest Earnings	\$296,934	\$295,961	\$305,642	\$336,811	\$380,014	\$422,061
Transfer from WW Operating Fund (51) ¹⁶	\$3,934,978	\$3,876,665	\$3,965,365	\$3,955,373	\$4,076,293	\$4,020,055
SWP Recoverable Expenditures	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Other Miscellaneous Revenue	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000
Subtotal	\$6,161,912	\$6,102,626	\$6,201,007	\$6,222,184	\$6,386,307	\$6,372,116
Water Capital Fund (72) – Other Revenues						
Water Connection Fees ¹⁷	\$596,351	\$596,351	\$596,351	\$596,351	\$596,351	\$596,351
Water Net Zero Fees ¹⁸	\$786,947	\$786,947	\$786,947	\$786,947	\$786,947	\$786,947
Transfer from WW Capital Fund (71) ¹⁹	\$2,200,000	\$0	\$0	\$0	\$0	\$0
The Saticoy Club Capital Contribution ²⁰	\$363,333	\$738,400	\$0	\$0	\$0	\$0
Interest Earnings	\$560,863	\$412,743	\$242,245	\$102,558	\$9,529	\$0
Subtotal	\$4,507,495	\$2,534,442	\$1,625,543	\$1,485,856	\$1,392,827	\$1,383,299
Total	\$10,669,407	\$8,637,068	\$7,826,550	\$7,708,040	\$7,779,134	\$7,755,415

¹⁶ Based on projected transfers from five-year Wastewater Enterprise O&M projections to cover the Wastewater Enterprise’s share of administrative and billing costs accounted for within the Water Operating Fund (Fund 52).

¹⁷ Water connection fees and net zero fee projections equal the annual average of actuals over the last four fiscal years through FY 2019/20.

¹⁸ Net Zero fee projections equal the annual average of actuals over the last four fiscal years through FY 2019-20.

¹⁹ Non-recurring transfer for Wastewater Enterprise share of Water Enterprise capital expenditures associated with advanced metering infrastructure.

²⁰ The Saticoy Club (formerly Saticoy Country Club) is responsible for 2/3 of capital project costs associated with the Saticoy Country Club Water System (projects include emergency generators and Well No.2 rehabilitation) pursuant to a co-ownership agreement of the System with the City.

Summary of Projected Water Enterprise Revenues

Table 4-12 shows a summary of all projected Water Enterprise revenues under current rates over the study period. This includes all projected revenues shown in **Table 4-8** through **Table 4-11**. This revenue summary represents expected revenues in the absence of any rate increase over the study period.

Table 4-12: Summary of Projected Water Enterprise Revenues Under Current Rates

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Water Operating Fund (52) – Revenues						
Water Service Charges	\$8,133,433	\$8,177,354	\$8,221,511	\$8,265,907	\$8,310,543	\$8,355,420
Fire Line Service Charges	\$788,564	\$792,822	\$797,104	\$801,408	\$805,736	\$810,086
Water Volume Rates	\$20,827,187	\$20,939,653	\$21,052,728	\$21,166,412	\$21,280,711	\$21,395,627
Miscellaneous Rate Revenue	\$147,095	\$158,180	\$166,474	\$175,504	\$185,342	\$196,066
Miscellaneous Fees	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000
Interest Earnings	\$296,934	\$295,961	\$305,642	\$336,811	\$380,014	\$422,061
Transfer from WW Operating Fund (51)	\$3,934,978	\$3,876,665	\$3,965,365	\$3,955,373	\$4,076,293	\$4,020,055
SWP Recoverable Expenditures	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Other Miscellaneous Revenue	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000
Subtotal	\$36,058,191	\$36,170,636	\$36,438,823	\$36,631,415	\$36,968,638	\$37,129,316
Water Capital Fund (72) – Revenues						
Water Connection Fees	\$596,351	\$596,351	\$596,351	\$596,351	\$596,351	\$596,351
Water Net Zero Fees	\$786,947	\$786,947	\$786,947	\$786,947	\$786,947	\$786,947
Transfer from WW Capital Fund (71)	\$2,200,000	\$0	\$0	\$0	\$0	\$0
The Saticoy Club Capital Contribution	\$363,333	\$738,400	\$0	\$0	\$0	\$0
Interest Earnings	\$560,863	\$412,743	\$242,245	\$102,558	\$9,529	\$0
Subtotal	\$4,507,495	\$2,534,442	\$1,625,543	\$1,485,856	\$1,392,827	\$1,383,299
Total	\$40,565,686	\$38,705,077	\$38,064,367	\$38,117,272	\$38,361,466	\$38,512,615

4.2.2. WATER ENTERPRISE OPERATIONS & MAINTENANCE EXPENSES

Ventura Water staff provided annual Water Enterprise O&M expense projections over the study period in current dollars. For most O&M expenses, Raftelis adjusted Ventura Water staff's five-year projections using inflationary factors (from **Table 4-3**). However, Raftelis developed detailed projections of O&M expenses related to groundwater assessments and Casitas MWD wholesale water supply costs. **Table 4-13** through **Table 4-15** show detailed calculations of groundwater assessments (excluding Saticoy Country Club), Saticoy Country Club groundwater assessments, and Casitas MWD wholesale costs, respectively. All unit costs shown were either provided by Ventura Water staff or inflated by the water supply inflationary factor (from **Table 4-3**). All units shown are based on the projected water supply mix (from **Table 4-7**).

Table 4-13: Projected Water Supply Expenses – Groundwater Excluding Saticoy Country Club

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Water Production (63141) > UTILITIES - GROUND WATER EXTRACTION (53111)						
<u>United Water Conservation District - Mound & Santa Paula Basin: Zone A=M&I Water Conservation Fund Charge</u>						
Unit Rate (\$/AF)	\$187.56	\$206.32	\$226.95	\$249.64	\$274.61	\$302.07
Units (AF) ²¹	4,850	6,450	6,450	7,041	7,041	7,041
Projected Charges	\$909,666	\$1,330,738	\$1,463,812	\$1,757,732	\$1,933,505	\$2,126,856
<u>United Water Conservation District - Oxnard Plain: Zone A=M&I Water Conservation Fund Charge</u>						
Unit Rate (\$/AF)	\$187.56	\$206.32	\$226.95	\$249.64	\$274.61	\$302.07
Units (AF)	4,827	4,700	4,573	4,446	4,319	4,192
Projected Charges	\$905,352	\$969,685	\$1,037,831	\$1,109,910	\$1,186,026	\$1,266,266
<u>United Water Conservation District - Oxnard Plain: Zone B=M&I Freeman Diversion Charge</u>						
Unit Rate (\$/AF)	\$111.98	\$123.18	\$135.50	\$149.05	\$163.95	\$180.34
Units (AF)	4,827	4,700	4,573	4,446	4,319	4,192
Projected Charges	\$540,527	\$578,937	\$619,622	\$662,656	\$708,100	\$756,006
<u>Fox Canyon Groundwater Management Agency – Oxnard Plain: Groundwater Extraction Fee</u>						
Unit Rate (\$/AF)	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00
Units (AF)	4,827	4,700	4,573	4,446	4,319	4,192
Projected Charges	\$28,962	\$28,200	\$27,438	\$26,676	\$25,914	\$25,152
<u>Fox Canyon Groundwater Management Agency – Oxnard Plain: Groundwater Sustainability Fee</u>						
Unit Rate (\$/AF)	\$14.00	\$14.00	\$16.00	\$16.00	\$19.00	\$19.00
Units (AF)	4,827	4,700	4,573	4,446	4,319	4,192
Projected Charges	\$67,578	\$65,800	\$73,168	\$71,136	\$82,061	\$79,648
<u>Oxnard Plain Groundwater Sustainability Agency Pump/Extraction Fee</u>						
Unit Rate (\$/AF)	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00
Units (AF)	4,827	4,700	4,573	4,446	4,319	4,192
Projected Charges	\$482,700	\$470,000	\$457,300	\$444,600	\$431,900	\$419,200
<u>Mound Groundwater Sustainability Agency Pump/Extraction Fee</u>						
Unit Rate (\$/AF)	\$19.00	\$18.00	\$17.00	\$17.00	\$17.00	\$17.00
Units (AF)	2,400	4,000	4,000	4,000	4,000	4,000
Projected Charges	\$45,600	\$72,000	\$68,000	\$68,000	\$68,000	\$68,000
Total Charges	\$2,980,386	\$3,515,360	\$3,747,172	\$4,140,710	\$4,435,506	\$4,741,127
<i>% Change</i>		<i>17.9%</i>	<i>6.6%</i>	<i>10.5%</i>	<i>7.1%</i>	<i>6.9%</i>

²¹ Equal to projected water supply from Mound Groundwater Basin and Santa Paula Groundwater Basin.

Table 4-14: Projected Water Supply Expenses – Saticoy Country Club Groundwater

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Workorder-Saticoy Country Club (63133) > UTILITIES - GROUND WATER EXTRACTION (53111)						
<u>United Water Conservation District – Saticoy Country Club: Zone A=M&I Water Conservation Fund Charge</u>						
Unit Rate (\$/AF)	\$187.56	\$206.32	\$226.95	\$249.64	\$274.61	\$302.07
Units (AF)	337	337	338	338	338	338
Projected Charges	\$63,197	\$69,579	\$76,607	\$84,344	\$92,864	\$102,245
<u>United Water Conservation District - Saticoy Country Club: Zone B=M&I Freeman Diversion Charge</u>						
Unit Rate (\$/AF)	\$111.98	\$123.18	\$135.50	\$149.05	\$163.95	\$180.34
Units (AF)	337	337	338	338	338	338
Projected Charges	\$37,731	\$41,541	\$45,737	\$50,357	\$55,443	\$61,044
<u>Fox Canyon Groundwater Management Agency – Saticoy Country Club: Groundwater Extraction Fee</u>						
Unit Rate (\$/AF)	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00
Units (AF)	337	337	338	338	338	338
Projected Charges	\$2,022	\$2,023	\$2,025	\$2,027	\$2,029	\$2,031
<u>Fox Canyon Groundwater Management Agency – Saticoy Country Club: Groundwater Sustainability Fee</u>						
Unit Rate (\$/AF)	\$14.00	\$14.00	\$16.00	\$16.00	\$19.00	\$19.00
Units (AF)	337	337	338	338	338	338
Projected Charges	\$4,717	\$4,721	\$5,401	\$5,406	\$6,425	\$6,431
Total Charges	\$107,666	\$117,865	\$129,770	\$142,134	\$156,761	\$171,750
<i>% Change</i>		9.5%	10.1%	9.5%	10.3%	9.6%

Table 4-15: Projected Water Supply Expenses – Casitas Municipal Water District

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Water Purification (63151) > UTILITIES - WATER (53103)						
<u>Casitas Municipal Water District Charge</u>						
Projected Charges	\$368,430	\$412,581	\$433,210	\$454,871	\$477,614	\$501,495
<u>Casitas Municipal Water District Commodity Charge</u>						
Unit Rate (\$/HCF)	\$1.39	\$1.56	\$1.72	\$1.89	\$2.08	\$2.28
Units (HCF)	1,153,949	664,794	633,196	464,125	552,673	39,598
Projected Charges	\$1,603,989	\$1,037,078	\$1,086,564	\$876,083	\$1,147,548	\$90,441
<u>Adjudication Impact Charge</u>						
Projected Charges	\$97,825	\$97,825	\$97,825	\$97,825	\$97,825	\$97,825
<u>Upper Ventura Pump/Extraction Fee (for Casitas Water)</u>						
Unit Rate (\$/AF)	\$80.00	\$80.00	\$80.00	\$80.00	\$80.00	\$80.00
Units (AF)	2,649	1,526	1,454	1,065	1,269	91
Projected Charges	\$211,928	\$122,093	\$116,289	\$85,239	\$101,501	\$7,272
Total Charges	\$2,282,172	\$1,669,577	\$1,733,888	\$1,514,017	\$1,824,488	\$697,033
<i>% Change</i>		-26.8%	3.9%	-12.7%	20.5%	-61.8%

Table 4-16 shows a summary of all Water Enterprise O&M expenses over the study period. It is projected that O&M expenses will increase by approximately 3.3 percent per year on average over the study period. Groundwater assessments and Casitas MWD wholesale costs shown are from Raftelis’ detailed projections in **Table 4-13** through **Table 4-15**. All other O&M expense projections were provided by Ventura Staff in current dollars and adjusted by Raftelis for estimated future inflation. Additional Water Enterprise O&M expenses associated with VenturaWaterPure are shown in detail in **Appendix A**. Note the approximate \$3.5M increase in additional O&M in FY 20225-26 when VenturaWaterPure is anticipated to begin operations.

Table 4-16: Projected Water Enterprise O&M Expenses

O&M Expenses	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Rev Mgmt-Water (22052)	\$500,000	\$515,000	\$530,450	\$546,364	\$562,754	\$579,637
Ventura Water GM (63051)	\$1,385,434	\$1,450,220	\$1,609,443	\$1,670,817	\$1,557,716	\$1,583,394
Ventura Water Support (63052)	\$1,873,597	\$1,954,439	\$2,020,235	\$1,976,119	\$2,040,086	\$2,083,684
Customer Care (63053)	\$1,599,676	\$1,614,444	\$1,696,471	\$1,792,621	\$1,896,558	\$1,987,900
Water Conservation (63080)	\$920,000	\$360,520	\$371,357	\$382,519	\$394,018	\$405,863
Water Operations (63101)	\$3,299,689	\$3,449,268	\$3,564,520	\$3,681,598	\$3,802,558	\$3,911,256
Ventura Water SCADA (63102)	\$917,200	\$957,469	\$990,917	\$1,023,645	\$1,303,795	\$1,090,308
Water Distribution (63130)	\$4,179,649	\$4,455,200	\$4,499,585	\$4,645,934	\$4,797,007	\$4,897,235
Workorder-City (63131)	\$50,000	\$51,500	\$53,045	\$54,636	\$56,275	\$57,964
Workorder-Saticoy CC (63133)	\$157,666	\$169,365	\$129,770	\$142,134	\$156,761	\$171,750
<i>GW Supply (Saticoy CC)</i>	<i>\$107,666</i>	<i>\$117,865</i>	<i>\$129,770</i>	<i>\$142,134</i>	<i>\$156,761</i>	<i>\$171,750</i>
<i>Other Workorder–Saticoy CC</i>	<i>\$50,000</i>	<i>\$51,500</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>
Water Production (63141)	\$6,230,656	\$7,128,002	\$7,506,487	\$8,050,265	\$8,501,594	\$8,949,572
<i>GW Supply (excl. Saticoy CC)</i>	<i>\$2,980,386</i>	<i>\$3,515,360</i>	<i>\$3,747,172</i>	<i>\$4,140,710</i>	<i>\$4,435,506</i>	<i>\$4,741,127</i>
<i>Other Water Production</i>	<i>\$3,250,270</i>	<i>\$3,612,642</i>	<i>\$3,759,315</i>	<i>\$3,909,555</i>	<i>\$4,066,089</i>	<i>\$4,208,445</i>
Water Purification (63151)	\$7,998,095	\$6,338,992	\$5,503,180	\$5,085,776	\$5,521,322	\$4,489,287
<i>Casitas MWD Supply</i>	<i>\$2,282,172</i>	<i>\$1,669,577</i>	<i>\$1,733,888</i>	<i>\$1,514,017</i>	<i>\$1,824,488</i>	<i>\$697,033</i>
<i>Other Water Purification</i>	<i>\$5,715,923</i>	<i>\$4,669,415</i>	<i>\$3,769,292</i>	<i>\$3,571,758</i>	<i>\$3,696,833</i>	<i>\$3,792,254</i>
Water resource planning (63170)	\$2,168,620	\$2,117,574	\$2,082,652	\$2,040,714	\$2,106,932	\$2,151,358
State Waterline (63171) ²²	\$2,110,000	\$3,080,000	\$3,060,000	\$3,034,000	\$3,060,000	\$3,010,000
VenturaWaterPure O&M	\$49,981	\$271,273	\$281,302	\$290,943	\$300,908	\$3,842,678
Total O&M Expenses	\$33,440,262	\$33,913,267	\$33,899,413	\$34,418,084	\$36,058,286	\$39,211,887
<i>% Change</i>		<i>1.4%</i>	<i>0.0%</i>	<i>1.5%</i>	<i>4.8%</i>	<i>8.7%</i>

²² Costs incurred to maintain State Water Project entitlement share of 10,000 AFY.

4.2.3.WATER ENTERPRISE DEBT

Table 4-17 shows the Water Enterprise’s projected debt service obligations over the study period. Existing debt service consists of the City’s 2020 Water Refunding Bonds, which were recently issued to refinance the City’s 2012 Water Revenue Bonds, 2014 Water Revenue Bonds, and 2005 State Drinking Water Loan . This refinancing of existing bonds is projected to reduce the Water Enterprise’s existing debt service payments by approximately \$556K per year over the study period. Proposed Water Enterprise debt service associated with VenturaWaterPure is also shown (see **Appendix A** for details). Note that proposed debt service for VenturaWaterPure represents preliminary projections based on the best information available at the time this study.

Table 4-17: Water Enterprise Debt Service

Debt Service	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Existing Debt Service						
2020 Water Revenue Refunding Bonds - Series A	\$1,598,783	\$4,446,677	\$4,448,045	\$4,449,443	\$4,446,672	\$3,717,610
Subtotal	\$1,598,783	\$4,446,677	\$4,448,045	\$4,449,443	\$4,446,672	\$3,717,610
Proposed Debt Service for VenturaWaterPure						
WIFIA Loan	\$0	\$119,101	\$288,224	\$463,303	\$1,233,859	\$1,233,859
SRF Loan	\$0	\$0	\$0	\$0	\$97,723	\$780,871
Revenue Bond	\$0	\$0	\$0	\$0	\$0	\$615,313
Subtotal	\$1,598,783	\$119,101	\$288,224	\$463,303	\$1,331,582	\$2,630,044
Total	\$1,598,783	\$4,565,778	\$4,736,270	\$4,912,746	\$5,778,254	\$6,347,653

Table 4-18 shows existing debt proceeds available to fund capital expenditures (excluding VenturaWaterPure) and proposed debt proceeds to fund VenturaWaterPure Program projects (see **Appendix A** for details). Amounts are shown in the year the proceeds are assumed to be spent to fund capital projects.

Table 4-18: Water Enterprise – Use of Debt Proceeds

Use of Debt Proceeds	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Existing Debt Proceeds	\$4,965,902	\$2,880,720	\$0	\$0	\$0	\$0
Proposed Debt Proceeds for VenturaWaterPure	\$0	\$5,772,000	\$8,440,000	\$8,940,000	\$43,427,115	\$43,427,115
Total	\$4,965,902	\$8,652,720	\$8,440,000	\$8,940,000	\$43,427,115	\$43,427,115

4.2.4.WATER ENTERPRISE CAPITAL IMPROVEMENT PLAN

Table 4-19 shows Ventura Water’s planned capital improvement plan (CIP) for the Water Enterprise excluding VenturaWaterPure, amounting to approximately \$16.9M per year on average over the study period. Significant CIP expenditures exclusive of VenturaWaterPure are anticipated to continue over the next ten years, highlighting the need to maintain adequate reserves to fund substantial CIP projects beyond FY 2025-26.

Table 4-20 shows the Water Enterprise’s share of VenturaWaterPure Program CIP project costs, amounting to approximately \$21.1M per year on average over the study period. VenturaWaterPure capital projects include injection/extraction wells, pump stations, a new advanced water purification facility, conveyance pipelines, ocean outfall, and land acquisitions to site the new treatment plant (see **Appendix A** for details).

Table 4-19: Water Enterprise Capital Improvement Plan Excluding VenturaWaterPure

CIP #	Project Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
97969	Emergency Generators - Saticoy Country Club	\$400,000	\$416,000	\$0	\$0	\$0	\$0
97968	Emergency Generators - Various Sites	\$950,000	\$988,000	\$0	\$0	\$0	\$0
97962	Waterline Replacement - Alley, Wells to Campanula	\$200,000	\$2,204,800	\$0	\$0	\$0	\$0
97961	Waterline Replacement - Main St/Valentine Ave	\$150,000	\$3,120,000	\$0	\$0	\$0	\$0
97956	Waterline - Eastside to Midtown Interconnection	\$380,000	\$2,017,600	\$4,196,608	\$0	\$0	\$0
97955	Waterline - Midtown to Westside Interconnection	\$166,000	\$1,732,640	\$3,785,600	\$0	\$0	\$0
97951	Well - Mound Well No. 3 (Back-Up Well for Mound Basin)	\$3,415,000	\$1,560,000	\$0	\$0	\$0	\$0
97945	Well - Repair and Restoration of Intake Structure	\$250,000	\$936,000	\$0	\$0	\$0	\$0
97941	Waterline Replacement - Pierpont Lanes	\$800,000	\$0	\$0	\$0	\$0	\$0
97938	Automated Meter Reading Installation - Citywide	\$5,500,000	\$2,600,000	\$0	\$0	\$0	\$0
97923	Well - Mound Well No.2 (Replaces Victoria Well #1)	\$1,715,000	\$5,098,080	\$0	\$0	\$0	\$0
97965	Treatment - State Water Blending Station	\$290,000	\$676,000	\$1,081,600	\$1,124,864	\$333,410	\$0
97959	Water Treatment -Saticoy Conditioning Facility Upgrades	\$0	\$0	\$0	\$0	\$0	\$0
97958	Well - Saticoy Well No. 4 (Replaces Saticoy Well #2)	\$110,000	\$468,000	\$378,560	\$3,149,619	\$3,275,604	\$0
97949	State Water Interconnection Project	\$1,810,000	\$1,320,800	\$9,545,120	\$11,220,518	\$2,690,675	\$0
73116	Pump Station - Relocate Day Rd BPS to Bailey	\$150,000	\$962,000	\$1,000,480	\$0	\$0	\$0
97921	Well - Foster Park Wellfield Production Restoration	\$0	\$0	\$0	\$0	\$0	\$0
97896	Well - Golf Course Booster Pump Station & Wells Upgrade	\$0	\$260,000	\$162,240	\$0	\$0	\$0
73119	SCADA Improvements	\$55,000	\$536,640	\$442,374	\$0	\$0	\$0
97967	Pump Station - 210/260 Boundary Adjustment	\$60,000	\$176,800	\$183,872	\$1,349,837	\$1,345,337	\$0
97963	Well - Saticoy Country Club Well No. 2 Rehabilitation	\$145,000	\$691,600	\$0	\$0	\$0	\$0
97966	Pump Station - Kalorama Replacement	\$50,000	\$272,480	\$1,460,160	\$1,895,396	\$0	\$0
97964	Well - Victoria Well No. 3 (Replaces Victoria Well #2)	\$0	\$0	\$0	\$0	\$0	\$0
97960	Treatment - Bailey Plant Modification	\$0	\$0	\$0	\$337,459	\$409,450	\$2,767,885
97954	Waterline Replacement-Harbor/Peninsula to Beachmont	\$0	\$0	\$0	\$0	\$0	\$0
97950	Waterline - Olivas Park Drive Extension	\$0	\$0	\$0	\$0	\$0	\$0
97942	Treatment - Avenue Plant Membrane Module Replacement	\$0	\$1,456,000	\$0	\$0	\$1,637,802	\$0
97933	Well - Foothill Well	\$0	\$0	\$0	\$0	\$0	\$0
73121	Waterline - Abandon 8-inch Bike Path Line	\$160,000	\$1,144,000	\$0	\$0	\$0	\$0
73117	Tank - 860 Zone Storage	\$100,000	\$0	\$0	\$0	\$0	\$0
76001	enQuesta Upgrade	\$800,000	\$0	\$0	\$0	\$0	\$0
	Bailey Reservoir Rehab	\$0	\$780,000	\$270,400	\$0	\$0	\$0
	Total	\$17,656,000	\$29,417,440	\$22,507,014	\$19,077,693	\$9,692,278	\$2,767,885

Table 4-20: Water Enterprise Capital Improvement Plan - VenturaWaterPure

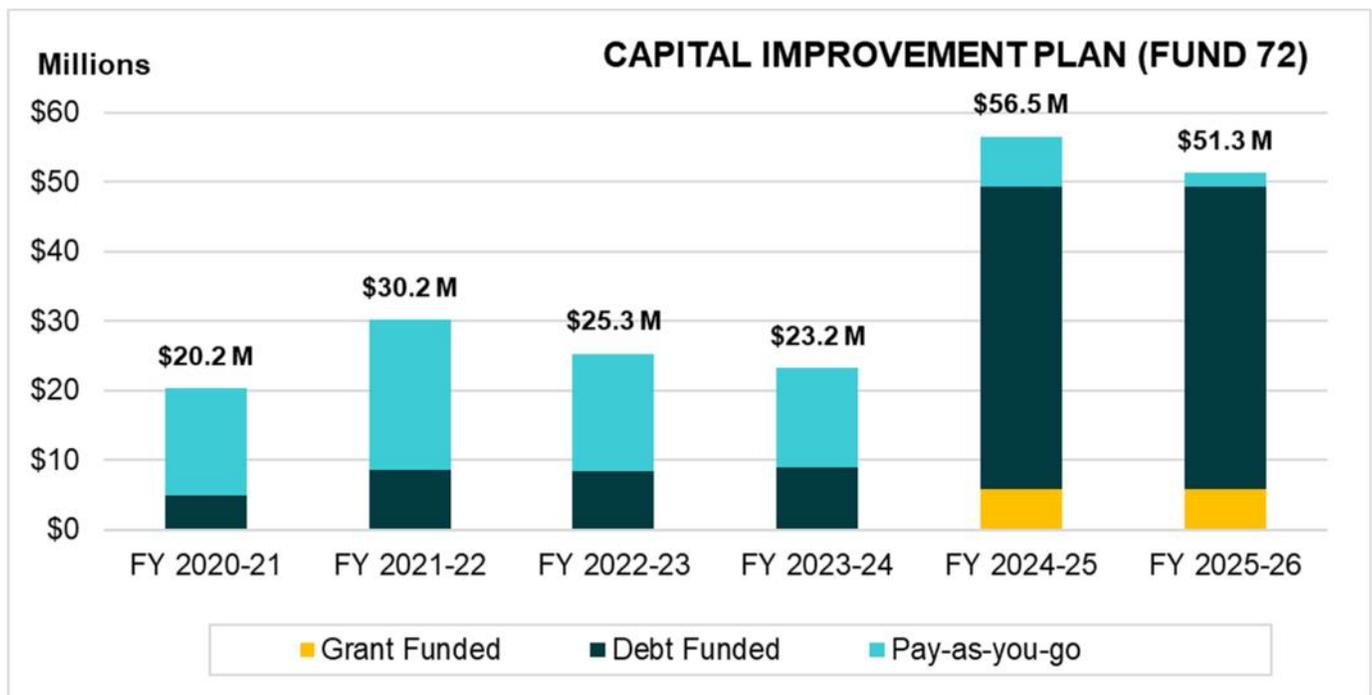
CIP #	Project Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
97934	Injection/Extraction Wells	\$700,000	\$1,000,000	\$2,000,000	\$2,500,000	\$11,500,000	\$11,500,000
73122	Pump Stations	\$37,500	\$250,000	\$350,000	\$350,000	\$1,700,000	\$1,700,000
96945	Advanced Water Purification Facility	\$725,000	\$2,500,000	\$3,500,000	\$3,500,000	\$21,000,000	\$21,000,000
96940	Pipelines	\$636,500	\$1,072,000	\$1,340,000	\$1,340,000	\$8,040,000	\$8,040,000
96939	Wetlands Improvements	\$0	\$0	\$0	\$0	\$0	\$0
96938	Outfall	\$375,000	\$950,000	\$1,250,000	\$1,250,000	\$7,000,000	\$7,000,000
96935	Land	\$100,000	\$2,367,500	\$0	\$0	\$0	\$0
	Total	\$2,574,000	\$8,139,500	\$8,440,000	\$8,940,000	\$49,240,000	\$49,240,000

Table 4-21 shows the assumed funding sources for Water Enterprise CIP projects over the study period. Estimated grant funding for the Water Enterprise’s share of VenturaWaterPure CIP is included in FY 2024-25 and FY 2025-26 (see **Appendix A** for details). Existing debt proceeds (from **Table 4-18**) are assumed to fund CIP projects exclusive of VenturaWaterPure in FY 2020-21 and FY 2021-22. Proposed debt proceeds (from **Table 4-18**) are assumed to fund most of the Water Enterprise’s VenturaWaterPure Program CIP projects over the next five years. All remaining CIP not funded by grants or debt is assumed to be funded by Water Enterprise cash reserves generated from rates (i.e. pay-as-you-go funding). **Figure 4-1** shows a summary of total Water Enterprise CIP expenditures (including VenturaWaterPure) by funding source over the study period.

Table 4-21: Water Enterprise Capital Improvement Plan Proposed Funding

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Capital Improvement Plan Excluding VenturaWaterPure						
Grant Funded	\$0	\$0	\$0	\$0	\$0	\$0
Debt Funded	\$4,965,902	\$2,880,720	\$0	\$0	\$0	\$0
Pay-as-you-go	\$12,690,098	\$19,182,360	\$16,880,261	\$14,308,270	\$7,269,209	\$2,075,914
Subtotal	\$17,656,000	\$22,063,080	\$16,880,261	\$14,308,270	\$7,269,209	\$2,075,914
Capital Improvement Plan - VenturaWaterPure						
Grant Funded	\$0	\$0	\$0	\$0	\$5,812,885	\$5,812,885
Debt Funded	\$0	\$5,772,000	\$8,440,000	\$8,940,000	\$43,427,115	\$43,427,115
Pay-as-you-go	\$2,574,000	\$2,367,500	\$0	\$0	\$0	\$0
Subtotal	\$2,574,000	\$8,139,500	\$8,440,000	\$8,940,000	\$49,240,000	\$49,240,000
Total	\$20,230,000	\$30,202,580	\$25,320,261	\$23,248,270	\$56,509,209	\$51,315,914

Figure 4-1: Water Enterprise Capital Improvement Plan



4.2.5.WATER ENTERPRISE FINANCIAL POLICIES

Required Debt Coverage

The Water Enterprise is required to meet debt service coverage requirements on its outstanding water revenue bonds. The required debt coverage ratio is 1.20, meaning that the Water Enterprise’s net operating revenues (i.e. total revenues less operating expenses) must amount to at least 1.20 times the amount of annual debt service. Failure to meet debt service coverage results in a technical default, which without foreseeable remedial action such as implementing rate increases, could result in a downgrade of credit rating, higher costs in future debt issuance, or even denial of credit.

Reserve Targets

Adequate cash reserves are required to meet operating, capital, and debt service requirements. No changes are proposed to Ventura Water’s existing water reserve policies. Operating reserves provide funds to meet ongoing cash flow requirements related to operating expenses. The current operating reserve target is equal to 25 percent of annual O&M expenses, or three months of working capital. Capital reserves are maintained to provide available funds for CIP projects. Ventura Water’s current capital reserve target is equal to the ten-year annual average of CIP project costs (R&R projects only). No changes to the financial policies are recommended at this time. **Table 4-22** summarizes the Water Enterprise’s key financial policies relevant to this rate study. **Table 4-23** shows projected operating and capital reserve targets over the study period based on the policies outlined above.

Table 4-22: Water Enterprise Financial Policies

Financial Policy	Target/Requirement
Debt Coverage	
Target Debt Coverage Ratio	1.20
Reserve Targets	
Operating Reserve Target	25% of annual O&M expenses
Capital Reserve Target	Annual average capital expenditures (R&R only)

Table 4-23: Projected Water Enterprise Reserve Targets

Reserve Target	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Operating Reserve ²³	\$8,360,066	\$8,478,317	\$8,474,853	\$8,604,521	\$9,014,571	\$9,802,972
Capital Reserve ²⁴	\$14,178,021	\$14,178,021	\$14,178,021	\$14,178,021	\$14,178,021	\$14,178,021
Total	\$22,538,087	\$22,656,338	\$22,652,874	\$22,782,542	\$23,192,592	\$23,980,993

²³ Equal to 25% of annual projected O&M expenses (from **Table 4-16**).

²⁴ Equal to annual average projected Water Enterprise CIP expenditures through FY 2029-30 (excluding VenturaWaterPure CIP projects).

4.2.6.STATUS QUO WATER FINANCIAL PLAN

To evaluate the need for revenue adjustments (i.e. increases to gross rate revenues), Raftelis first developed a status quo financial plan. The status quo financial plan assumes that current FY 2020-21 rates remain unchanged over the study period. **Table 4-24** combines projected Fund 52 revenues (from **Table 4-12**), O&M expenses (from **Table 4-16**), and debt service (from **Table 4-17**) to generate operating cash flow projections under the status quo. In the absence of any revenue adjustments, the Water Operating Fund (Fund 52) will fail to generate sufficient revenue to recover O&M expenses and debt service, and net cash generation becomes increasingly negative in subsequent years.

Table 4-24: Water Operating Cash Flow (Fund 52) – Status Quo Financial Plan

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Water Rate Revenue under Current Rates						
2	Water Rates Subject to Revenue Adjustments	\$29,749,184	\$29,909,829	\$30,071,342	\$30,233,728	\$30,396,990	\$30,561,133
3	Water Rates not Subject to Revenue Adjustments ²⁵	\$147,095	\$158,180	\$166,474	\$175,504	\$185,342	\$196,066
4							
5	Revenue Adjustments						
6	Fiscal Year	Revenue Adjustment					
7	FY 2020-21	0.00%	\$0	\$0	\$0	\$0	\$0
8	FY 2021-22	0.00%		\$0	\$0	\$0	\$0
9	FY 2022-23	0.00%		\$0	\$0	\$0	\$0
10	FY 2023-24	0.00%			\$0	\$0	\$0
11	FY 2024-25	0.00%				\$0	\$0
12	FY 2025-26	0.00%					\$0
13	Total Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
14							
15	Revenue Summary						
16	Water Rates (including Revenue Adjustments)	\$29,896,279	\$30,068,009	\$30,237,817	\$30,409,232	\$30,582,331	\$30,757,200
17	Other Fund 52 Revenue ²⁶	\$6,161,912	\$6,092,158	\$6,158,178	\$6,123,121	\$6,204,998	\$6,080,246
18	Total Revenue	\$36,058,191	\$36,160,167	\$36,395,995	\$36,532,353	\$36,787,329	\$36,837,445
19							
20	O&M Expenses	\$33,440,262	\$33,913,267	\$33,899,413	\$34,418,084	\$36,058,286	\$39,211,887
21							
22	Debt Service	\$1,598,783	\$4,565,778	\$4,736,270	\$4,912,746	\$5,778,254	\$6,347,653
23							
24	Net Operating Cash Flow²⁷	\$1,019,146	(\$2,318,878)	(\$2,239,688)	(\$2,798,478)	(\$5,049,211)	(\$8,722,095)

²⁵ Includes Casitas Direct pass-through charges and Temporary Meter Daily Charges.

²⁶ Status quo “other revenue” is less than what is shown in **Table 4-12** (which reflects the proposed financial plan) to account for reduced interest earnings due to depletion of interest-bearing reserves. Interest earnings under the status quo and proposed financial plan scenarios are calculated by averaging the beginning and ending reserve balance in each year and then multiplying by the assumed interest rate.

²⁷ Equal to [Line 18 – Line 20 – Line 22].

Table 4-25 shows projected reserve balances and debt coverage under the status quo financial plan for the entire Water Enterprise, including both the Water Operating Fund (Fund 52) and Water Capital Fund (Fund 72). Sources of funds include revenues (from **Table 4-12**) as well as grants and debt proceeds (from **Table 4-21**). Use of funds include O&M expenses (from **Table 4-16**), debt service (from **Table 4-17**), and CIP expenditures (from **Table 4-21**). The FY 2020-21 beginning balance reflects actual Water Enterprise reserve balances as of July 1, 2020. All ending balance and debt coverage figures are projected values. Target reserve balances shown are from **Table 4-23**.

Under the status-quo financial plan, reserves are projected to fall below target by the end of FY 2024-25. Debt coverage is projected to fall well below the required ratio in all years following FY 2020-21, in part due to significant increases in debt service for VenturaWaterPure. The status quo financial plan is insufficient to meet the Water Enterprise’s financial needs over the study period. This demonstrates a clear need for revenue adjustments over the study period to increase rate revenues and ensure financial sustainability.

Table 4-25: Status Quo Water Financial Plan Pro Forma (Funds 52 & 72)

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Beginning Balance	\$90,577,325	\$80,839,868	\$59,505,571	\$42,011,166	\$26,390,275	\$15,464,683
2							
3	Source of Funds						
4	Water Rates (including Revenue Adjustments)	\$29,896,279	\$30,068,009	\$30,237,817	\$30,409,232	\$30,582,331	\$30,757,200
5	Other Fund 52 Revenue ²⁸	\$6,161,912	\$6,092,158	\$6,158,178	\$6,123,121	\$6,204,998	\$6,080,246
6	Other Fund 72 Revenue	\$4,507,495	\$2,534,442	\$1,625,543	\$1,485,856	\$1,392,827	\$1,383,299
7	Grants	\$0	\$0	\$0	\$0	\$5,812,885	\$5,812,885
8	Use of Debt Proceeds	\$4,965,902	\$8,652,720	\$8,440,000	\$8,940,000	\$43,427,115	\$43,427,115
9	Total Source of Funds	\$45,531,587	\$47,347,329	\$46,461,538	\$46,958,209	\$87,420,156	\$87,460,744
10							
11	Use of Funds						
12	O&M Expenses	\$33,440,262	\$33,913,267	\$33,899,413	\$34,418,084	\$36,058,286	\$39,211,887
13	Debt Service	\$1,598,783	\$4,565,778	\$4,736,270	\$4,912,746	\$5,778,254	\$6,347,653
14	Capital Improvement Plan Expenditures	\$20,230,000	\$30,202,580	\$25,320,261	\$23,248,270	\$56,509,209	\$51,315,914
15	Total Use of Funds	\$55,269,045	\$68,681,625	\$63,955,944	\$62,579,100	\$98,345,749	\$96,875,455
16							
17	Ending Balance²⁹	\$80,839,868	\$59,505,571	\$42,011,166	\$26,390,275	\$15,464,683	\$6,049,972
18	<i>Target Balance</i>	<i>\$22,538,087</i>	<i>\$22,656,338</i>	<i>\$22,652,874</i>	<i>\$22,782,542</i>	<i>\$23,192,592</i>	<i>\$23,980,993</i>
19							
20	Debt Coverage						
21	Net Revenue ³⁰	\$7,125,423	\$4,781,342	\$4,122,125	\$3,600,125	\$2,121,871	(\$991,143)
22	Debt Service	\$1,598,783	\$4,565,778	\$4,736,270	\$4,912,746	\$5,778,254	\$6,347,653
23	Projected Debt Coverage ³¹	4.46	1.05	0.87	0.73	0.37	-0.16
24	<i>Required Debt Coverage</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>

²⁸ Status quo “other revenue” is less than what is shown in **Table 4-12** (which reflects the proposed financial plan) to account for reduced interest earnings due to depletion of interest-bearing reserves. Interest earnings under the status quo and proposed financial plan scenarios are calculated by averaging the beginning and ending reserve balance in each year and then multiplying by the assumed interest rate.

²⁹ Equal to [Line 1 + Line 9 – Line 15]

³⁰ Equal to [(Sum of Lines 4-6) – Line 12]

³¹ Equal to [Line 21 ÷ Line 22]

4.2.7. PROPOSED WATER FINANCIAL PLAN

The Water Enterprise must increase its revenues from water rates over the study period to adequately fund its operating and capital expenditures, meet required debt coverage, and maintain sufficient reserve funding. Raftelis worked closely with Ventura Water staff to identify financial plan options for the Water Commission’s consideration. The selected option of proposed annual revenue adjustments are shown in **Table 4-26**. Revenue adjustments represent annual percent increases in total rate revenue relative to rate revenue generated by the prior year’s water rates.

Table 4-26: Proposed Water Revenue Adjustments

Description	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Effective Date	July 1, 2021	July 1, 2022	July 1, 2023	July 1, 2024	July 1, 2025
Revenue Adjustment	7.0%	7.0%	7.0%	7.0%	7.0%

Table 4-27 combines projected Fund 52 revenues (from **Table 4-12**), O&M expenses (from **Table 4-16**), and debt service (from **Table 4-17**) to generate operating cash flow projections under the proposed financial plan. By implementing the proposed revenue adjustments, we project that the Water Operating Fund (Fund 52) will maintain sufficient operating cash flow through the end of the study period.

Table 4-27: Water Operating Cash Flow (Fund 52) – Proposed Financial Plan

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Water Rate Revenue under Current Rates						
2	Water Rates Subject to Revenue Adjustments	\$29,749,184	\$29,909,829	\$30,071,342	\$30,233,728	\$30,396,990	\$30,561,133
3	Water Rates not Subject to Revenue Adjustments	\$147,095	\$158,180	\$166,474	\$175,504	\$185,342	\$196,066
4							
5	Revenue Adjustments³²						
6	Fiscal Year Revenue Adjustment						
7	FY 2020-21 0.00%	\$0	\$0	\$0	\$0	\$0	\$0
8	FY 2021-22 7.00%		\$2,093,688	\$2,104,994	\$2,116,361	\$2,127,789	\$2,139,279
9	FY 2022-23 7.00%			\$2,252,344	\$2,264,506	\$2,276,735	\$2,289,029
10	FY 2023-24 7.00%				\$2,423,022	\$2,436,106	\$2,449,261
11	FY 2024-25 7.00%					\$2,606,633	\$2,620,709
12	FY 2025-26 7.00%						\$2,804,159
13	Total Adjustments	\$0	\$2,093,688	\$4,357,338	\$6,803,889	\$9,447,263	\$12,302,437
14							
15	Revenue Summary						
16	Water Rates (including Revenue Adjustments)	\$29,896,279	\$32,161,697	\$34,595,154	\$37,213,120	\$40,029,594	\$43,059,637
17	Other Fund 52 Revenue	\$6,161,912	\$6,102,626	\$6,201,007	\$6,222,184	\$6,386,307	\$6,372,116
18	Total Revenue	\$36,058,191	\$38,264,324	\$40,796,161	\$43,435,304	\$46,415,901	\$49,431,753
19							
20	O&M Expenses	\$33,440,262	\$33,913,267	\$33,899,413	\$34,418,084	\$36,058,286	\$39,211,887
21							
22	Debt Service	\$1,598,783	\$4,565,778	\$4,736,270	\$4,912,746	\$5,778,254	\$6,347,653
23							
24	Net Operating Cash Flow³³	\$1,019,146	(\$214,722)	\$2,160,478	\$4,104,474	\$4,579,361	\$3,872,213

³² The increase in rate revenues resulting from each year’s revenue adjustment is calculated individually in Lines 7-12. This is necessary to account for revenue increases resulting from prior year revenue adjustments.

³³ Equal to [Line 18 – Line 20 – Line 22]

Table 4-28 shows projected reserve balances and debt coverage under the proposed financial plan for the entire Water Enterprise, including both the Water Operating Fund (Fund 52) and Water Capital Fund (Fund 72). Sources of funds include status quo revenues (from **Table 4-12**), revenue adjustments (from **Table 4-27**), and grants and debt proceeds (from **Table 4-21**). Use of funds include O&M expenses (from **Table 4-16**), debt service (from **Table 4-17**), and CIP expenditures (from **Table 4-21**). The FY 2020-21 beginning balance reflects actual Water Enterprise reserve balances as of July 1, 2020. All ending balance and debt coverage figures are projected values. Target reserve balances shown are from **Table 4-23**. Under the proposed financial plan, reserve balances and debt coverage are projected to achieve target policies in all years of the rate-setting period.

Table 4-28: Proposed Water Financial Plan Pro Forma (Funds 52 & 72)

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Beginning Balance	\$90,577,325	\$80,839,868	\$61,609,728	\$48,515,488	\$39,797,549	\$38,500,528
2							
3	Source of Funds						
4	Water Rates (including Revenue Adjustments)	\$29,896,279	\$32,161,697	\$34,595,154	\$37,213,120	\$40,029,594	\$43,059,637
5	Other Fund 52 Revenue	\$6,161,912	\$6,102,626	\$6,201,007	\$6,222,184	\$6,386,307	\$6,372,116
6	Other Fund 72 Revenue	\$4,507,495	\$2,534,442	\$1,625,543	\$1,485,856	\$1,392,827	\$1,383,299
7	Grants	\$0	\$0	\$0	\$0	\$5,812,885	\$5,812,885
8	Use of Debt Proceeds	\$4,965,902	\$8,652,720	\$8,440,000	\$8,940,000	\$43,427,115	\$43,427,115
9	Total Source of Funds	\$45,531,587	\$49,451,485	\$50,861,704	\$53,861,160	\$97,048,729	\$100,055,052
10							
11	Use of Funds						
12	O&M Expenses	\$33,440,262	\$33,913,267	\$33,899,413	\$34,418,084	\$36,058,286	\$39,211,887
13	Debt Service	\$1,598,783	\$4,565,778	\$4,736,270	\$4,912,746	\$5,778,254	\$6,347,653
14	Capital Improvement Plan Expenditures	\$20,230,000	\$30,202,580	\$25,320,261	\$23,248,270	\$56,509,209	\$51,315,914
15	Total Use of Funds	\$55,269,045	\$68,681,625	\$63,955,944	\$62,579,100	\$98,345,749	\$96,875,455
16							
17	Ending Balance³⁴	\$80,839,868	\$61,609,728	\$48,515,488	\$39,797,549	\$38,500,528	\$41,680,126
18	<i>Target Balance</i>	<i>\$22,538,087</i>	<i>\$22,656,338</i>	<i>\$22,652,874</i>	<i>\$22,782,542</i>	<i>\$23,192,592</i>	<i>\$23,980,993</i>
19							
20	Debt Coverage						
21	Net Revenue ³⁵	\$7,125,423	\$6,885,498	\$8,522,291	\$10,503,076	\$11,750,443	\$11,603,165
22	Debt Service	\$1,598,783	\$4,565,778	\$4,736,270	\$4,912,746	\$5,778,254	\$6,347,653
23	Projected Debt Coverage ³⁶	4.46	1.51	1.80	2.14	2.03	1.83
24	<i>Required Debt Coverage</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>

³⁴ Equal to [Line 1 + Line 9 – Line 15]

³⁵ Equal to [(Sum of Lines 4-6) – Line 12]

³⁶ Equal to [Line 21 ÷ Line 22]

Figure 4-2 shows projected debt coverage (blue line) relative to the debt coverage requirement (red line) over the study period. Debt coverage is expected to drop sharply in FY 2021-22 due to additional debt service from an anticipated Water Infrastructure Finance and Innovation Act (WIFIA) loan to finance a portion of VenturaWaterPure CIP project costs. Note that debt coverage is projected to drop sharply beyond FY 2025-26 due to the anticipated need for additional debt to finance CIP (see **Appendix B** for ten-year financial plan projections).

Figure 4-2: Proposed Water Financial Plan - Debt Coverage

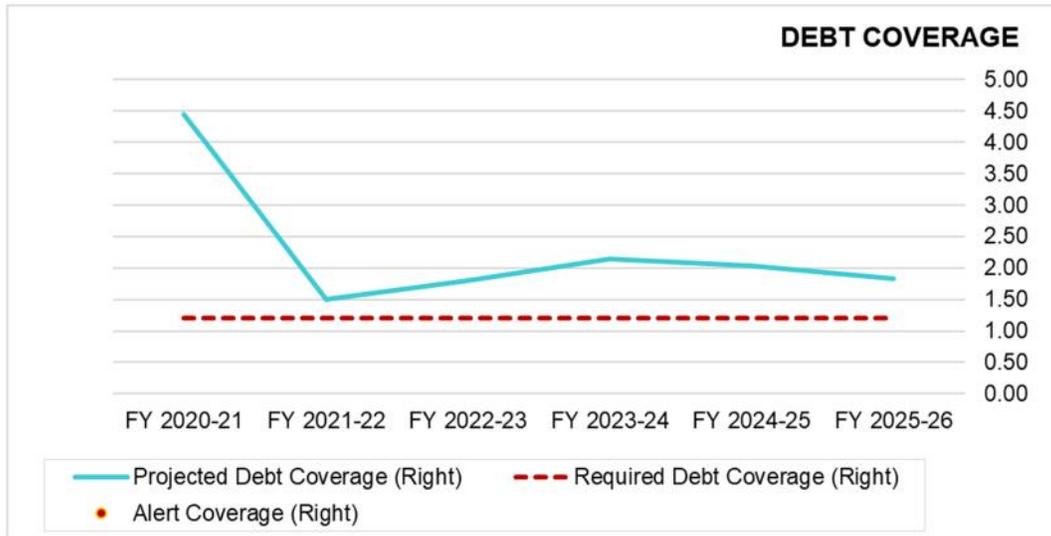


Figure 4-3 shows the Water Enterprise’s projected ending balance under the proposed financial plan. The light blue bars indicate the ending balance. The total reserve target is represented by the red dashed line. The Water Enterprise is projected to continue to draw down its reserves through FY 2024-25 to fund substantial R&R CIP projects exclusive of VenturaWaterPure. By the end of the study period, the Water Enterprise’s reserves are projected to remain above the target amount with the proposed rate increases. Maintaining reserves above the target amount is necessary as additional drawdown of reserves beyond FY 2025-26 is anticipated to fund substantial R&R CIP from FY 2026-27 through FY 2029-30 (see **Appendix B** for ten-year financial plan projections).

Figure 4-3: Proposed Water Financial Plan – Projected Ending Balances

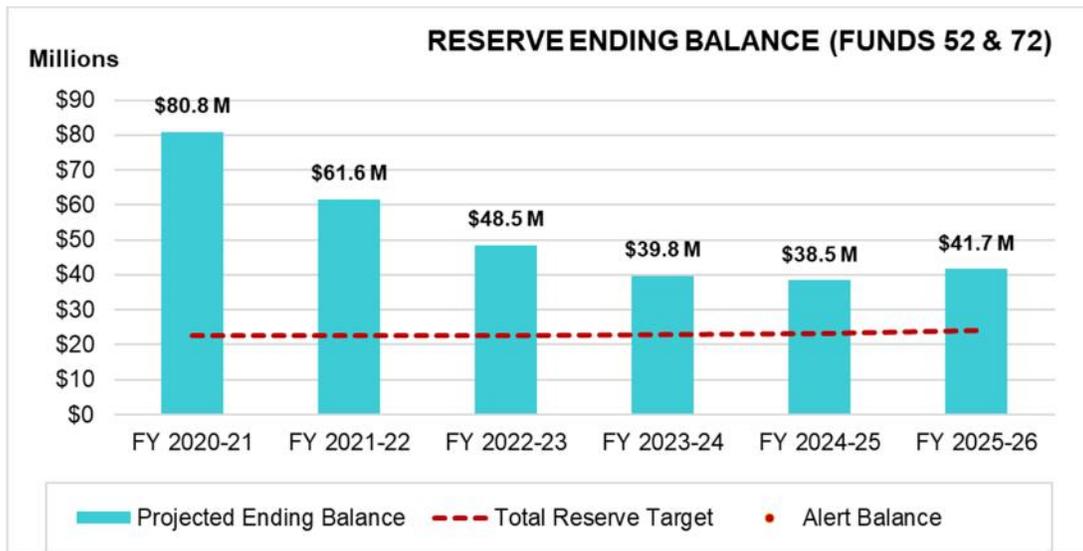
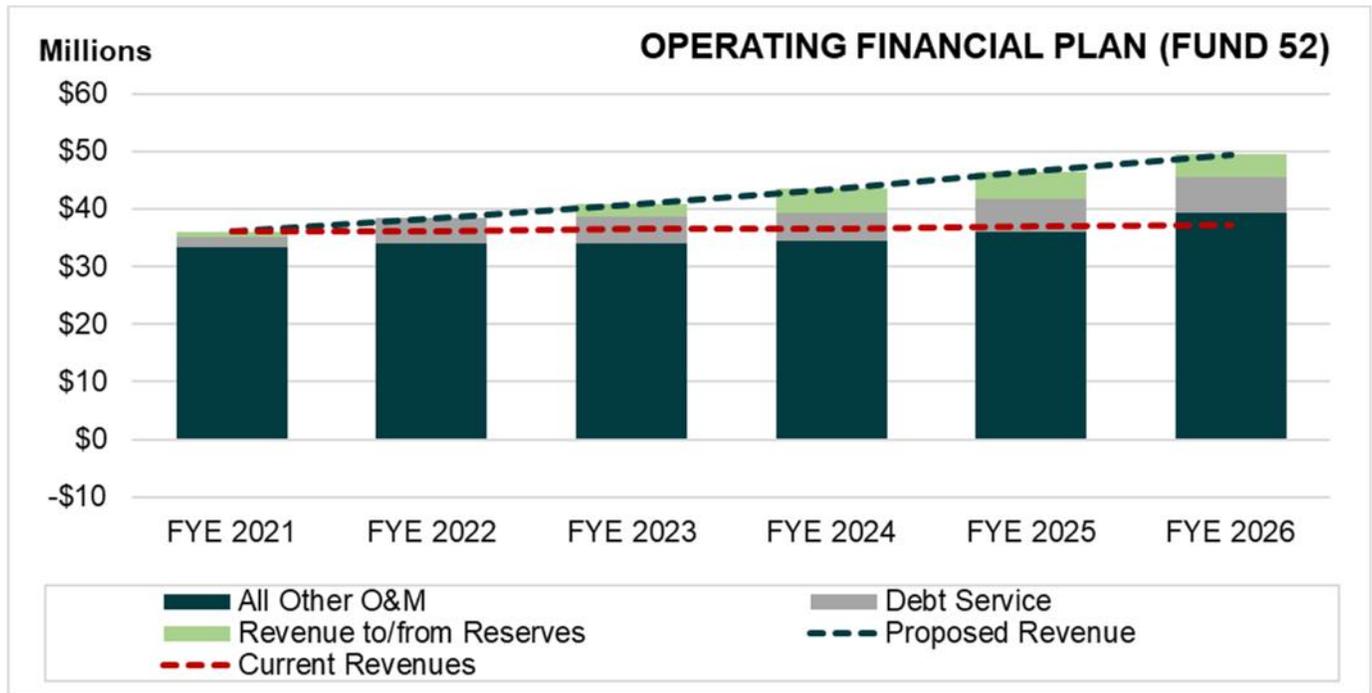


Figure 4-4 shows the proposed versus status quo operating financial plan. Revenues under the proposed financial plan and status quo financial plan are represented by the green and red dashed lines, respectively. Revenue requirements including O&M expenses, debt service, and reserve funding for CIP/other purposes are represented by the various stacked bars. Revenue adjustments are required to generate sufficient revenue to recover O&M expenses and debt service payments over the study period.

Figure 4-4: Proposed vs. Status Quo Water Financial Plan



4.3. Water Cost of Service Analysis

Section 4.3 details the cost of service (COS) analysis performed for the Water Enterprise for FY 2020-21. The COS analysis allocates the overall rate revenue requirement to customer classes based on their proportion of use of and burden on the water system. This provides the basis for the development of proposed water rates through FY 2025-26.

4.3.1. METHODOLOGY

The first step in a COS analysis is to determine the revenue required from water rates. The total revenue requirement results from the financial plan in **Section 4.2**. The framework and methodology utilized to develop the COS analysis and to apportion the revenue requirement to each customer class and tier is informed by the processes outlined in the AWWA’s *Manual M1*.

COS analyses are tailored to meet the specific needs of each water system. However, there are four distinct steps in every COS analysis to recover costs from customers in an accurate, equitable, and defensible manner:

- 1. Cost functionalization:** O&M expenses and capital assets are categorized by their function in the system. Sample functions may include water supply, treatment, distribution, transmission, customer service, etc.

2. **Cost causation component allocation:** Functionalized costs are then allocated to cost causation components based on their burden on the system. The cost causation components include water supply, base delivery, extra-capacity, meters, and customer, among others. The revenue requirement is allocated accordingly to the cost causation components and results in the total share of the revenue requirement attributable to each cost component.
3. **Unit cost development:** The revenue requirement for each cost causation component is divided by the appropriate units of service to determine the unit cost of each.
4. **Revenue requirement distribution:** The unit cost is utilized to distribute the revenue requirement for each cost causation component to customer classes based on each customer class's individual service units.

This method of functionalizing costs is consistent with the AWWA's *Manual M1* and is widely used in the water industry to perform COS analyses.

4.3.2. WATER RATE REVENUE REQUIREMENT

Table 4-29 shows the rate revenue requirement for FY 2020-21 (also referred to as the test year). The revenue requirement is split into operating, capital, and revenue offset categories (Columns C-E), which are later allocated based on O&M expenses and capital assets. The revenue requirements (Lines 2-3) are equal to FY 2020-21 operating expenses plus debt service. The revenue offsets (Lines 7-8) include miscellaneous rate revenue not subject to revenue adjustments and all Fund 52 non-rate revenues. These revenues are applied as offsets to the final rate revenue requirement. The reserve transfer adjustment (Line 12) is equal to FY 2020-21 negative net operating cash flow and represents the additional rate revenue required to build up operating reserves in FY 2020-21. All values are from the proposed financial plan operating cash flow (**Table 4-27**). The final rate revenue requirement (Line 15) is calculated as follows:

$$\text{Total revenue required from rates (Line 15)} = \text{Revenue requirements (Line 4)} - \text{Revenue offsets (Line 9)} - \text{Adjustments (Line 13)}$$

Table 4-29: FY 2020-21 Water Rate Revenue Requirement

[A]	[B]	[C]	[D]	[E]	[F]
Line	Description	Operating Revenue Requirement	Capital Revenue Requirement	Revenue Offsets	Total
1	Revenue Requirements				
2	O&M Expenses	\$33,440,262	\$0	\$0	33,440,262
3	Debt Service	\$0	\$1,598,783	\$0	\$1,598,783
4	Total Revenue Requirements	\$33,440,262	\$1,598,783	\$0	\$35,039,045
5					
6	Less Revenue Offsets				
7	Water Rates not Subject to Revenue Adjustments	\$0	\$0	\$147,095	\$147,095
8	Other Fund 52 Revenue	\$0	\$0	\$6,161,912	\$6,161,912
9	Total Revenue Offsets	\$0	\$0	\$6,309,008	\$6,309,008
10					
11	Less Adjustments				
12	Transfer from (to) Reserves	\$0	(\$1,019,146)	\$0	(\$1,019,146)
13	Total Adjustments	\$0	(\$1,019,146)	\$0	(\$1,019,146)
14					
15	Water Rate Revenue Requirement	\$33,440,262	\$2,617,929	(\$6,309,008)	\$29,749,184

4.3.3.WATER SYSTEM PEAKING FACTORS

A significant portion of the costs of the water system are based on the peaking characteristics of the different customer classes. A water system is designed to meet different requirements, including extra-capacity / peaking costs. Peaking costs are divided into maximum day (Max Day) and maximum hour (Max Hour) demand. The Max Day demand is the maximum amount of water used in a single day over a full year. The Max Hour demand is the maximum use in an hour on the Max Day. For example, storage and treatment components of the water system are designed to handle Max Day requirements while the distribution system is designed for Max Hour demands.

Table 4-30 shows system-wide peaking factors for Ventura Water’s water system, which are used to derive the cost component allocation bases for Base Delivery, Max Day, and Max Hour costs. Base Delivery use is considered average daily demand over one year, which has been normalized to a factor of 1.00 (Column C, Line 1). The Max Day peaking factor (Column C, Line 2) indicates that the Max Day demand is **1.52** times greater than the average daily demand. Similarly, the Max Hour peaking factor (Column C, Line 3) shows that the Max Hour demand is **3.97** times greater than average demand. The allocation bases (Columns D-F) are calculated using the equations outlined below. Columns are represented in these equations as letters, and lines are represented as numbers. For example, Column D, Line 2 is shown as D2.

The Max Day allocations are calculated as follows:

- » Base Delivery: $C1 / C2 \times 100\% = D2$
- » Max Day: $(C2 - C1) / C2 \times 100\% = E2$

The Max Hour allocations are calculated as follows:

- » Base Delivery: $C1 / C3 \times 100\% = D3$
- » Max Day: $(C2 - C1) / C3 \times 100\% = E3$
- » Max Hour: $(C3 - C2) / C3 \times 100\% = F3$

Table 4-30: Water System Peaking Factor Allocations

[A] Line	[B] Description	[C] Factor ³⁷	[D] Base	[E] Max Day	[F] Max Hour	[G] Total
1	Base	1.00	100.0%	0.0%	0.0%	100.0%
2	Max Day	1.52	65.8%	34.2%	0.0%	100.0%
3	Max Hour	3.97	25.2%	13.1%	61.7%	100.0%

4.3.4.FUNCTIONALIZATION AND ALLOCATION OF EXPENSES

After determining the revenue requirement and systemwide peaking allocation basis, the next step of the water COS analysis is to allocate O&M expenses and capital assets to the following functional categories:

- » **Water Supply:** water supply costs relating to Ventura River - Foster Park water, groundwater production, Casitas MWD wholesale water purchases, the State Water Project, and VenturaWaterPure
- » **Storage:** costs related to water storage tanks and reservoirs
- » **Treatment:** costs associated with treating water to drinking water standards
- » **Storage/Treatment:** costs associated specifically with supervisory control and data acquisition (SCADA)
- » **Transmission:** costs associated with the water transmission system (pump stations, etc.)

³⁷ From 2010 Water Master Plan.

- » **Distribution:** costs related to delivering water to customers from storage facilities to the meter
- » **Conservation:** costs associated with water conservation, outreach, and efficiency programs
- » **Customer:** costs of meter reading, billing, and other customer service functions
- » **Meters:** costs of meter maintenance/repair and a share of extra capacity-related costs
- » **Fire Protection:** costs directly attributable to private fire protection
- » **General/Admin:** costs associated with general administration of the Water Enterprise (i.e. indirect costs)
- » **General Operating:** operating costs not directly attributable to the above functions are allocated based on the overall cost functionalization of the capital asset base

The functionalization of costs allows for the allocation of costs to cost causation components. Some cost causation components correspond directly to a functional category listed above. The cost causation components include:

- » **Water Supply:** directly associated with the Water Supply functional category
- » **Base Delivery:** costs associated with providing water under average water demand conditions
- » **Peaking (Max Day and Max Hour):** extra-capacity costs associated with providing water during peak demand conditions
- » **Conservation:** directly associated with the Conservation functional category
- » **Customer:** directly associated with the Customer functional category
- » **Meters:** directly associated with the Meters functional category
- » **Fire Protection:** costs associated with providing water for private fire protection purposes
- » **General:** directly associated with the General/Admin functional category
- » **Revenue Offsets:** miscellaneous revenues applied as offsets to the rate revenue requirement

Table 4-31 shows the basis for allocating each functional category to the various cost causation components. This provides the basis for allocating O&M and capital expenses in the following subsections. Most functional categories are allocated entirely to the corresponding cost causation component. The allocation basis for functional categories not allocated entirely to a single cost causation component is as follows:

- » **Functional categories allocated based on Max Day demand:** Storage, treatment, and transmission infrastructure is designed to accommodate maximum day water demand. Therefore, all Storage, Treatment, Storage/Treatment, and Transmission costs are allocated to the Base Delivery and Max Day cost causation components based on the Max Day allocation from **Table 4-30**.
- » **Functional categories allocated based on Max Hour demand:** Distribution infrastructure is designed to accommodate maximum hour water demand, therefore all Distribution costs are allocated to the Base Delivery, Max Day, and Max Hour cost causation components based on the Max Hour allocation from **Table 4-30**.
- » **General Operating:** General Operating costs are allocated based on the final capital allocation excluding Water Supply and Fire Protection (calculated subsequently in **Table 4-35**, Line 15). The functional breakdown of the Water Enterprise's capital assets is used here as a proxy to allocate O&M costs that cannot be directly attributed to a specific cost causation factor.

Table 4-31: Allocation of Functional Categories to Water Cost Causation Components

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]
Line	Functional Category	Water Supply	Base Delivery	Max Day	Max Hour	Conservation	Customer	Meters	Fire Protection	General	Total
1	Water Supply	100.0%									100.0%
2	Storage <i>(Max Day basis)</i>		65.8%	34.2%	0.0%						100.0%
3	Treatment <i>(Max Day basis)</i>		65.8%	34.2%	0.0%						100.0%
4	Storage/Treatment <i>(Max Day basis)</i>		65.8%	34.2%	0.0%						100.0%
5	Transmission <i>(Max Day basis)</i>		65.8%	34.2%	0.0%						100.0%
6	Distribution <i>(Max Hour basis)</i>		25.2%	13.1%	61.7%						100.0%
7	Conservation					100.0%					100.0%
8	Customer						100.0%				100.0%
9	Meters							100.0%			100.0%
10	Fire Protection								100.0%		100.0%
11	General/Admin									100.0%	100.0%
12	General Operating	0.0%	41.7%	21.7%	26.0%	0.0%	0.0%	5.2%	0.0%	5.5%	100.0%

4.3.5.WATER ENTERPRISE O&M EXPENSE ALLOCATION

The next step of the COS analysis is to develop an allocation basis for the operating revenue requirement based on the functionalization of the Water Enterprise’s O&M expenses. Raftelis worked with Ventura Water staff to assign O&M expenses, by line item, to the most closely associated functional category. **Table 4-32** shows a summary of FY 2020-21 O&M expenses by functional category. This intermediate step is necessary to allocate total O&M expenses to individual cost causation components.

Table 4-32: Summary of Water Enterprise O&M Expenses by Functional Category

[A]	[B]	[C]	[D]
Line	Functional Category	FY 2020-21 O&M Expenses	Percent of Total
1	Water Supply	\$7,598,205	22.7%
2	Storage	\$3,000	0.01%
3	Treatment	\$5,735,923	17.2%
4	Storage/Treatment	\$929,200	2.8%
5	Transmission	\$0	0.0%
6	Distribution	\$4,812,003	14.4%
7	Conservation	\$962,842	2.9%
8	Customer	\$1,599,676	4.8%
9	Meters	\$0	0.0%
10	Fire Protection	\$0	0.0%
11	General/Admin	\$3,648,189	10.9%
12	General Operating	\$8,151,225	24.4%
13	Total O&M Expenses	\$33,440,262	100.0%

Table 4-33 shows the allocation of FY 2020-21 O&M expenses by functional category to each cost causation component. The percentage allocation of each functional category (Columns C-K) to the various cost causation components was determined in **Table 4-31**. Total O&M expenses associated with each functional category (Column L) was determined in **Table 4-32**. The total dollar amount allocated to each cost causation component (Line 13) is determined by multiplying the total expense associated with each functional category by the corresponding percentage allocation and summing across all functional categories.

For example, 100 percent (Column C, Line 1) of Water Supply costs (Column L, Line 1) are allocated to the Water Supply cost causation factor total (Column C, Line 13). The same calculation is performed for the remaining functional categories (i.e. Column C × Column L in Lines 2-12). The subtotals of Column C × Column L in Lines 1-12 are summed to determine the total dollar amount allocated to the Water Supply cost causation factor (Column C, Line 13). The same calculations are repeated for the remaining cost causation components (Columns D-K) to determine the allocation of O&M expenses to each cost causation component (Line 13). The total operating revenue requirement (Column L, Line 13) equals the operating revenue requirement from **Table 4-29**, Column C, Line 15. The O&M allocation percentages (Line 15) represent the proportion of total O&M expenses allocated to each cost causation component (Line 13).

Table 4-33: Allocation of Water Enterprise O&M Expenses to Cost Causation Components

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]
Line	Functional Category	Water Supply	Base Delivery	Max Day	Max Hour	Conservation	Customer	Meters	Fire Protection	General	FY 2020-21 O&M
1	Water Supply	100.0%									\$7,598,205
2	Storage		65.8%	34.2%	0.0%						\$3,000
3	Treatment		65.8%	34.2%	0.0%						\$5,735,923
4	Storage/Treatment		65.8%	34.2%	0.0%						\$929,200
5	Transmission		65.8%	34.2%	0.0%						\$0
6	Distribution		25.2%	13.1%	61.7%						\$4,812,003
7	Conservation					100.0%					\$962,842
8	Customer						100.0%				\$1,599,676
9	Meters							100.0%			\$0
10	Fire Protection								100.0%		\$0
11	General/Admin									100.0%	\$3,648,189
12	General Operating	0.0%	41.7%	21.7%	26.0%	0.0%	0.0%	5.2%	0.0%	5.5%	\$8,151,225
13	Total O&M	\$7,598,205	\$8,995,767	\$4,677,799	\$5,085,054	\$962,842	\$1,599,676	\$423,065	\$0	\$4,097,854	\$33,440,262
14											
15	<i>O&M Allocation</i>	<i>22.7%</i>	<i>26.9%</i>	<i>14.0%</i>	<i>15.2%</i>	<i>2.9%</i>	<i>4.8%</i>	<i>1.3%</i>	<i>0.0%</i>	<i>12.3%</i>	<i>100.0%</i>

4.3.6. WATER ENTERPRISE CAPITAL ALLOCATION

Capital assets are utilized in COS analyses to allocate the capital revenue requirement to the various cost causation components. The distribution of short-term CIP project costs can be heavily weighted to specific cost causation components based on the type of projects. Use of short-term plans to allocate capital costs may cause rates to fluctuate and result in customer confusion. The overall water asset base however is considerably stable in the long-term, and therefore is more representative of long-term capital investment in Ventura Water’s water system. Thus, functionalized capital assets are used to allocate capital costs.

Ventura Water staff provided Raftelis with a detailed asset listing that included the original cost of each individual asset. Raftelis calculated the replacement cost less depreciation (RCLD) of each asset based on net book value using the Engineering News-Record’s 20-City Average Cost Construction Index (CCI) to account for capital cost inflation. As part of the capital asset analysis, Raftelis assigned each individual asset to a functional category with the assistance of Ventura Water staff. Total water asset value (RCLD) by functional category is shown in **Table 4-34**. Percentages are rounded to the nearest one-tenth of one percent.

Table 4-34: Summary of Water Enterprise Capital Assets by Functional Category

[A]	[B]	[C]	[D]
Line	Functional Category	Asset Value (RCLD)	Percent of Total
1	Water Supply	\$13,702,285	7.7%
2	Storage	\$33,726,107	19.0%
3	Treatment	\$34,939,452	19.7%
4	Storage/Treatment	\$782,222	0.4%
5	Transmission	\$7,642,042	4.3%
6	Distribution	\$68,625,891	38.7%
7	Conservation	\$0	0.0%
8	Customer	\$0	0.0%
9	Meters	\$8,469,784	4.8%
10	Fire Protection	\$342,769	0.2%
11	General/Admin	\$9,002,312	5.1%
12	Total Asset Value (RCLD)	\$177,232,866	100.0%

Table 4-35 shows the allocation of capital assets by functional category to each cost causation component. The percentage allocation of each functional category (Columns C-K) to the various cost causation components was determined in **Table 4-31**. Total asset value associated with each functional category (Column L) was determined in **Table 4-34**. The total dollar amount allocated to each cost causation component (Line 12) is determined by multiplying the total asset value associated with each functional category by the corresponding percentage allocation and summing across all functional categories. This is consistent with the methodology used to determine the allocation of O&M expenses to cost causation components in **Table 4-33** (described in detail in **Section 4.3.5**). The final capital allocation percentages (Line 14) represent the proportion of total capital assets allocated to each cost causation component (Line 12).

The capital allocation percentages (Line 14) are used to allocate the total capital revenue requirement. The total capital revenue requirement (Column L, Line 17) equals the capital revenue requirement from **Table 4-29**, Column D, Line 15. This total is allocated to each cost causation component (Columns C-K, Line 17) based on the final capital allocation percentages (Columns C-K, Line 14).

Table 4-35: Allocation of Functionalized Water Capital Assets to Cost Causation Components

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]
Line	Functional Category	Water Supply	Base Delivery	Max Day	Max Hour	Conservation	Customer	Meters	Fire Protection	General	Asset Value (RCLD)
1	Water Supply	100.0%									\$13,702,285
2	Storage		65.8%	34.2%	0.0%						\$33,726,107
3	Treatment		65.8%	34.2%	0.0%						\$34,939,452
4	Storage/ Treatment		65.8%	34.2%	0.0%						\$782,222
5	Transmission		65.8%	34.2%	0.0%						\$7,642,042
6	Distribution		25.2%	13.1%	61.7%						\$68,625,891
7	Conservation					100.0%					\$0
8	Customer						100.0%				\$0
9	Meters							100.0%			\$8,469,784
10	Fire Protection								100.0%		\$342,769
11	General/ Admin									100.0%	\$9,002,312
12	Total Assets	\$13,702,285	\$68,003,109	\$35,361,616	\$42,350,991	\$0	\$0	\$8,469,784	\$342,769	\$9,002,312	\$177,232,866
13											
14	<i>Capital Allocation</i>	<i>7.7%</i>	<i>38.4%</i>	<i>20.0%</i>	<i>23.9%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>4.8%</i>	<i>0.2%</i>	<i>5.1%</i>	<i>100.0%</i>
15	<i>General Operating³⁸</i>	<i>N/A</i>	<i>41.7%</i>	<i>21.7%</i>	<i>26.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>5.2%</i>	<i>N/A</i>	<i>5.5%</i>	<i>100.0%</i>
16											
17	Capital Revenue Requirement	\$202,398	\$1,004,482	\$522,331	\$625,572	\$0	\$0	\$125,108	\$5,063	\$132,974	\$2,617,929

³⁸ Equal to the percent of total assets allocated to each cost causation component excluding Water Supply and Fire Protection. These percentages are used to allocate O&M expenses assigned to the General Operating functional category (in Table 4-33, Line 12)

4.3.7.PRELIMINARY WATER COST OF SERVICE ALLOCATION

Table 4-36 shows the preliminary allocation of the total FY 2020-21 rate revenue requirement to the various cost causation components. The preliminary COS allocations (Column G) are subject to further adjustments based on additional reallocations developed in the following subsections. The results shown in **Table 4-36** are calculated as follows based on intermediate results developed in the preceding subsections:

- 1. Operating Revenue Requirement** (Column C): The total operating revenue requirement consists solely of the Water Enterprise's O&M expenses. The allocation of the total operating revenue requirement to each cost causation component was previously determined in **Table 4-33**, Columns C-K, Line 13.
- 2. Capital Revenue Requirement** (Column D): The total capital revenue requirement consists of debt service and reserve funding for future CIP. The allocation of the total capital revenue requirement to each cost causation component was previously determined in **Table 4-35**, Columns C-K, Line 17).
- 3. Revenue Offsets** (Column E): Total revenue offsets (from **Table 4-29**, Column E, Line 15) are allocated fully to a Revenue Offsets cost causation factor (Column E, Line 10). Note that the Revenue Offsets cost causation factor was not included within the operation or capital revenue requirement allocation, as it pertains exclusively to miscellaneous revenues used to offset the total revenue required from rates.
- 4. Reallocation of General Costs** (Column F): The total General cost allocation equals the operating revenue requirement (Column C, Line 9) and capital revenue requirement (Column D, Line 10) allocated to the General cost causation component. The total General revenue requirement (Column, F, Line 13) is fully reallocated to all other cost causation components on a pro rata basis³⁹ (Column F, Lines 2-8) excluding the Water Supply and Revenue Offsets cost causation components (which General costs do not pertain to). Note that the reallocation results in a shifting of costs between cost causation components but does not change the total rate revenue requirement.
- 5. Preliminary Cost of Service Allocation** (Column G): The preliminary COS allocation to each cost causation component (Column G, Lines 1-10) equals the sum of Columns C-F. Note that the total COS allocation (Column G, Line 11) equals the total FY 2020-21 rate revenue requirement (from **Table 4-29**, Column F, Line 15).

³⁹ The operating (Column C) and capital (Column D) revenue requirements are summed for each cost causation component shown in Lines 2-8. The percentage of the sum falling within each cost causation component (Lines 2-8) is multiplied by total reallocated General costs (Column F, Line 9) to determine the share of General costs reallocated to each cost causation component (Column F, Lines 2-8).

Table 4-36: Preliminary Water Cost of Service Allocation (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]	[G]
Line	Cost Causation Component	Operating Revenue Requirement	Capital Revenue Requirement	Revenue Offsets	Reallocation of General Costs	Preliminary COS Allocation
1	Water Supply	\$7,598,205	\$202,398			\$7,800,603
2	Base Delivery	\$8,995,767	\$1,004,482		\$1,760,926	\$11,761,175
3	Max Day	\$4,677,799	\$522,331		\$915,681	\$6,115,811
4	Max Hour	\$5,085,054	\$625,572		\$1,005,574	\$6,716,200
5	Conservation	\$962,842	\$0		\$169,545	\$1,132,387
6	Customer	\$1,599,676	\$0		\$281,684	\$1,881,361
7	Meters	\$423,065	\$125,108		\$96,527	\$644,700
8	Fire Protection	\$0	\$5,063		\$892	\$5,955
9	General	\$4,097,854	\$132,974		(\$4,230,829)	\$0
10	Revenue Offset			(\$6,309,008)		(\$6,309,008)
11	Total	\$33,440,262	\$2,617,929	(\$6,309,008)	\$29,749,184	\$29,749,184

4.3.8.ALLOCATION OF FIRE PROTECTION COSTS

Water systems provide two types of fire protection: fire flows for fire protection from fire hydrants for firefighting; and fire flows from fire lines for private structures with fire suppression sprinkler systems. In 2020, Senate Bill No. 1386 was enacted into California law, and it added Section 53750.5 to the part of the California Government Code known as the Proposition 218 Omnibus Implementation Act, and it reads as follows:

(a) The Legislature finds and declares all of the following:

(1) Fire service is a different and distinct service from water service, which is one of several other property-related services that aids in the provision of fire service provided to properties.

(2) Hydrants are part of the system of public improvements described in subdivision (n) of Section 53750.

(3) Hydrants are generally designed, installed, and used to provide an immediately available water service to aid in extinguishing fires that threaten property served by a water service provider, and are generally not designed or installed to provide water service to aid in extinguishing fires that threaten property not served by a water service provider or wildfires. Hydrants are also used by a water service provider for water system operations and maintenance.

(4) Hydrants are generally located in proximity to properties served by a water service provider to facilitate water service to those properties. Hydrants and the water distributed through them have a direct relationship to property ownership because hydrants are generally sized based upon property use and then are installed when parcels are developed or connected to a water system.

(5) Hydrants and the water distributed through them are not available to the public at large in substantially the same manner as they are to property owners served by a water service provider because hydrants are designed, installed, and used to serve properties receiving water service, and the public at large does not generally have access to water through those hydrants. Incidental or

other de minimis use of hydrants and the water distributed through them for other purposes does not change their essential character as a property-related service.

(6) Hydrants and the water distributed through them are part of the property-related water service provided to all property owners served by a water service provider. Through hydrants, water is immediately available to those properties to aid in extinguishing a fire that directly threatens them. The cost associated with this aspect of water service is proportionately allocable among properties that may receive a reasonably similar level of service from the immediate availability of water to aid in extinguishing fires that directly or indirectly threaten those properties.

(7) Property-related water service costs may include, but are not limited to, any costs associated with constructing, maintaining, repairing, upgrading, and replacing hydrants, and costs associated with obtaining, treating, and distributing adequate volumes of water to meet the water demands of properties served by the water service provider, including water supplied for firefighting purposes. The fees or charges related to those costs are imposed upon a parcel or person as an incident of property ownership.

(b) The fees or charges for property-related water service imposed or increased pursuant to Section 6 of Article XIII D of the California Constitution may include the costs to construct, maintain, repair, or replace hydrants as needed or consistent with applicable fire codes and industry standards, and may include the cost of water distributed through hydrants. In addition to any other method consistent with Section 6 of Article XIII D of the California Constitution, fees or charges for the aspects of water service related to hydrants and the water distributed through them may be fixed and collected as a separate fee or charge, or included in the other water rates and charges fixed and collected by a public agency, as provided for in Section 53069.9 of the Government Code.

(c) For the purpose of this section, “hydrants” means all hydrants and other infrastructure used to distribute water that aids in the protection of property from fire, and all related or appurtenant infrastructure and facilities owned by a water service provider necessary or convenient for distributing water that aids in the protection of property from fire, including adequately sized and pressurized lines, pumps, and all appurtenances, but does not include privately owned hydrants or other private fire response related infrastructure.

(d) This section is declaratory of existing law.

This provision is declarative of existing law, and clarifies that the costs of water service chargeable to property owners include the cost of infrastructure, such as fire hydrants, that provide fire protection for nearby properties. Raftelis confirmed with Ventura Water staff that this provision is consistent with the City’s operations and use of fire hydrants.

Raftelis performed a fire demand analysis to determine the share of Fire Protection costs allocated to fire hydrants (hydrant fire flow) versus private fire lines (private fire). Ventura Water provided Raftelis with a count of fire hydrants connected to its water system. The projected number of private fire lines in FY 2020-21 was previously shown in **Table 4-5**.

Table 4-37 shows the calculation of equivalent fire demand associated with fire hydrants and private fire lines. Each connection size has a fire flow demand factor similar to the hydraulic capacity factor of a water meter. The

diameter of the connection (in inches) is divided by 6 (to normalize to a 6-inch hydrant connection) and then raised to the power of 2.63 to determine the fire flow demand factor (Column C).⁴⁰ The fire flow demand factor (Column C) is multiplied by the number of connections by size (Column D) to calculate equivalent fire demand (Column E). Total equivalent fire demand is shown for fire hydrants and private fire lines in Lines 3 and 14 respectively.

Table 4-37: Equivalent Fire Demand

[A]	[B]	[C]	[D]	[E]
Line	Connection Size	Demand Factor	Unit Count	Equivalent Fire Demand
1	Public Hydrants			
2	6-inch	1.00	3,341	3,341
3	Subtotal		3,341	3,341
4				
5	Private Fire Lines			
6	1-inch	0.06	2,464	137
7	2-inch	0.06	27	2
8	3-inch	0.16	2	0
9	4-inch	0.34	330	114
10	6-inch	1.00	268	268
11	8-inch	2.13	118	251
12	10-inch	3.83	16	62
13	12-inch	6.19	0	0
14	Subtotal		3,225	833
15				
16	Total		6,566	4,174

Table 4-38 shows the number of equivalent fire demand units associated with fire hydrants and private fire lines (from **Table 4-37**). The proportional share of equivalent fire demand (Column D) provides the basis for which Fire Protection costs are allocated in subsequent steps of the COS analysis.

Table 4-38: Fire Protection Allocation Basis

[A]	[B]	[C]	[D]
Line	Connection Size	Equivalent Fire Demand	% of Equivalent Fire Demand
1	Fire Hydrants	3,341	80.0%
2	Private Fire Lines	833	20.0%
3	Total	4,174	100.0%

4.3.9. PEAKING UNITS OF SERVICE

Peaking units of service are developed to calculate unit peaking costs (Max Day and Max Hour) for select customer classes and provide a basis to reallocate peaking costs to Fire Protection in subsequent steps of the COS analysis. Fire hydrants and private fire lines contribute to system capacity-related costs (i.e. peaking costs), and therefore are reallocated a portion of Max Day and Max Hour costs.

⁴⁰ Per the Hazen-Williams equation and AWWA *Manual M1*

Table 4-39 shows the calculation of peaking units of service for non-fire related water service. Note that reclaimed water use is excluded because the reclaimed water system functions as an independent water system. Additionally, reclaimed water costs are associated with the Wastewater Enterprise. Therefore, reclaimed water is subject to the wastewater cost of service analysis (see **Section 5.3**). **Table 4-39** shows calculations used to attribute peaking costs to specific customer classes based on actual water use patterns. Raftelis estimates Max Day (Column E) and Max Hour (Column H) factors based on actual FY 2018-19 water use and systemwide peaking factors (from **Table 4-30**). Projected FY 2020-21 water use in Column C (from **Table 4-6**)⁴¹ is divided by 365 days to determine average daily water use (Column D). Average daily use in Column D is then multiplied by the Max Day factor (Column E) to determine Max Day demand (Column F). Max Day requirements (Column G) are determined by subtracting average daily water use (Column D) from Max Day demand (Column F). Max Hour requirements (Column J) are similarly calculated. Max Hour demand (Column I) equals average daily water use (Column D) multiplied by the Max Hour factor (Column H). Max Hour requirements (Column J) equal Max Hour demand (Column I) less Max Day demand (Column F).

Table 4-39: Peaking Units by Customer Class

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]
Line	Customer Class	Annual Water Use (HCF)	Average Daily Water Use (HCF)	Max Day Factor	Max Day Demand (HCF/Day)	Max Day Requirements (HCF/Day)	Max Hour Factor	Max Hour Demand (HCF/Day)	Max Hour Requirements (HCF/Day)
1	Residential Tier 1	2,556,176	6,998	1.05	7,316	318	2.73	19,108	11,792
2	Residential Tier 2	833,762	2,283	1.30	2,968	685	3.40	7,751	4,784
3	Residential Tier 3	483,169	1,323	1.45	1,919	596	3.79	5,012	3,093
4	Non-Residential	1,544,580	4,229	1.43	6,037	1,809	3.73	15,769	9,731
5	Non-Residential Irrigation ⁴²	166,992	457	1.65	753	295	4.30	1,966	1,213
6	Untreated	26,666	73	1.43	104	31	3.74	273	168

Table 4-40 shows the methodology⁴³ used to calculate peaking units of service associated with fire protection based on assumptions regarding the duration and water flow rate in gallons per minute (gpm) associated with an urban fire:

$$\text{Max Day Requirements (HCF/day)} = \text{Duration of Fire (hrs)} \times \text{Water Use Rate (gpm)} \times 60 \text{ mins/hr} \div 748.05 \text{ gallons/HCF}$$

$$\text{Max Hour Requirements (HCF/day)} = [\text{Water Use Rate (gpm)} \times 60 \text{ mins/hr} \times 24 \text{ hrs/day} \div 748.05 \text{ gallons/HCF}] - \text{Max Day Requirements (HCF/day)}$$

Table 4-40: Peaking Units for Fire Protection

[A]	[B]	[C]
Line	Description	Value
1	Duration of Fire (Hours)	4.0
2	Water Use Rate (gallons per minute)	4,500
3	Max Day Requirements (HCF/Day)	1,444
4	Max Hour Requirements (HCF/Day)	7,219

⁴¹ Note Residential Tier 3 water use differs from the values shown in **Table 4-6**. The values shown account for proposed rate structure changes discussed in further detail in **Section 4.4** (see **Table 4-47**).

⁴² Includes use from both Non-Residential Irrigation and Institutional/Interruptible (from **Table 4-6**), as the study proposes to consolidate these two customer classes into a single Non-Residential Irrigation class (see **Section 4.4**).

⁴³ Per the AWWA Manual M1.

Table 4-41 shows the distribution of Fire Protection Max Day and Max Hour requirements (from Table 4-40) to public hydrants versus private fire lines based on proportional equivalent fire demand (from Table 4-38).

Table 4-41: Allocation of Peaking Units to Public and Private Fire Protection

[A] Line	[B] Description	[C] Value
1	Max Day Requirements (HCF/Day)	1,444
2	<i>Allocation to Hydrant Fire Protection (80.0%)</i>	<i>1,156</i>
3	<i>Allocation to Private Fire Protection (20.0%)</i>	<i>288</i>
4		
5	Max Hour Requirements (HCF/Day)	7,219
6	<i>Allocation to Hydrant Fire Protection (80.0%)</i>	<i>5,778</i>
7	<i>Allocation to Private Fire Protection (20.0%)</i>	<i>1,441</i>

Peaking units of service (from Table 4-39 and Table 4-41) are summarized below in Table 4-42. The percentage of Max Day and Max Hour Requirements attributed to each customer class is shown in Columns D and E respectively.

Table 4-42: Summary of Total Peaking Units

[A] Line	[B] Customer Class	[C] Max Day Requirements (HCF/Day)	[D] % of Max Day Requirements	[E] Max Hour Requirements (HCF/Day)	[F] % of Max Hour Requirements
1	Residential Tier 1	318	6.1%	11,792	31.0%
2	Residential Tier 2	685	13.2%	4,784	12.6%
3	Residential Tier 3	596	11.5%	3,093	8.1%
4	Non-Residential	1,809	34.9%	9,731	25.6%
5	Non-Residential Irrigation	295	5.7%	1,213	3.2%
6	Untreated	31	0.6%	168	0.4%
7	Fire Hydrants	1,156	22.3%	5,778	15.2%
8	Private Fire Lines	288	5.6%	1,441	3.8%
9	Total	5,178	100.0%	38,000	100.0%

4.3.10.ADJUSTED WATER COST OF SERVICE

Table 4-43 shows the adjusted allocation of the water rate revenue requirement to the various cost causation components. The adjusted COS allocations (Column H) incorporates adjustments to the preliminary COS allocations developed in Section 4.3.7, and ultimately provides the underlying basis for FY 2020-21 rate calculations shown subsequently in Section 4.5. The results shown in Table 4-43 are calculated as follows based on intermediate results developed in the preceding subsections:

- 1. Preliminary Cost of Service Allocation** (Column C): The preliminary COS allocations were previously developed in Section 4.3.7. (see Table 4-36, Column G, Lines 1-11). The General cost causation component is excluded because all General costs were previously reallocated to other cost causation components.

2. **Reallocation of Fire Hydrant Costs** (Column D): Fire protection costs associated with fire flow for fire hydrants are reallocated to the Meters cost causation component to recover these extra-capacity costs from all metered connections. Preliminary Max Day (Column C, Line 3) and Max Hour costs (Column C, Line 4) associated with fire hydrants are reallocated from Max Day (Column D, Line 3) and Max Hour (Column D, Line 4) to Meters (Column D, Line 7) based on the percentage of peaking units associated with fire flow for fire hydrants (**Table 4-42**, Column D and F, Line 7). Note that the reallocation results in a shifting of costs between cost causation components but does not change the total rate revenue requirement.
3. **Reallocation of Private Fire Costs** (Column E): Preliminary peaking costs (Column C, Lines 3-4) associated with private fire protection are reallocated from Max Day (Column E, Line 3) and Max Hour (Column E, Line 4) to Fire Protection (Column E, Line 8) based on the percentage of peaking units associated with private fire lines (**Table 4-42**, Column D and F, Line 8). Note that the reallocation results in a shifting of costs between cost causation components but does not change the total rate revenue requirement.
4. **Reallocation of Peaking Costs to Meters** (Column F): Ventura Water collects approximately 30 percent of its water rate revenues from fixed Water Service Charges and Fire Line Service Charges. Without any additional cost reallocation, this updated COS analysis would reduce the proportion of revenues from fixed charges to approximately 19 percent. This would reduce revenue stability and increase the risk of revenue insufficiency resulting from decreases in water sales. To maintain the existing proportion of 30 percent fixed (from Water Service Charges and Fire Line Service Charges) and 70 percent variable (from Water Volume Rates), Raftelis reallocates one third of Max Day costs (sum of Columns C-E, Line 3) and Max Hour costs (sum of Columns C-E, Line 4) from Max Day (Column F, Line 3) and Max Hour (Column F, Line 4) to Meters (Column F, Line 7). Utilities invest in, and continuously maintain, facilities to provide capacity to meet all levels of water consumption, including peak demand. These costs must be recovered regardless of the amount of water used during a given period, so peaking costs are generally considered as fixed water system costs. To balance between affordability and revenue stability, it is a common practice that a portion of peaking, or extra-capacity, costs are recovered by fixed charges, along with customer-related costs and meter-related costs.
5. **Reallocation of Revenue Offsets** (Column G): Revenue offsets directly related to water supply-related functions are reallocated from the Revenue Offsets cost causation component (Column G, Line 9) to the Water Supply cost causation component (Column G, Line 1). Water supply-related revenue offsets include State Water Project recoverable expenditures (from **Table 4-12**), Casitas Direct wholesale pass-through revenues (from **Table 4-10**), and The Saticoy Club's estimated contribution to the golf course's share of Saticoy Country Club System groundwater assessments.⁴⁴ A portion of revenue offsets are also reallocated from the Revenue Offset cost causation component (Column G, Line 9) to the Untreated Offset cost causation component (Column G, Line 10). The addition of the Untreated Offset cost causation component is necessary to isolate a portion of revenue offsets for the specific purpose of offsetting treatments costs initially allocated to Untreated Water customers.⁴⁵

⁴⁴ Total Saticoy Country Club System groundwater supply costs (from **Table 4-16**) multiplied by the The Saticoy Club golf course's projected share of total Saticoy Country Club System water use in FY 2020-21. The Saticoy Club golf course is not directly metered – their usage is calculated by Ventura Water staff by subtracting billed residential customer usage from total System usage measured from metered groundwater wells that serve the entire System; The Saticoy Club is invoiced directly by Ventura Water based on the total costs to operate and maintain the System, pursuant to the terms of a co-ownership agreement of the System with the City.

⁴⁵ The reallocation of revenue offsets to the Untreated Offset is calculated by multiplying total projected Untreated Water use in FY 2020-21 (from **Table 4-6**) by the estimated average treatment cost per HCF (from **Table 4-64**).

6. **Adjusted Cost of Service Allocation** (Column H): The final COS allocation (Column H) equals the sum of Columns C to G. This represents the final adjusted allocation of the total water revenue requirement (from **Table 4-29**, Column F, Line 15) to the various cost causation components.

Table 4-43: Adjusted Cost of Service Allocation (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Line	Cost Causation Component	Preliminary COS Allocation	Reallocation of Fire Hydrant Costs	Reallocation of Private Fire Costs	Reallocation of Peaking to Meters	Reallocation of Revenue Offsets	Adjusted COS Allocation
1	Water Supply	\$7,800,603				(\$1,186,068)	\$6,614,535
2	Base Delivery	\$11,761,175					\$11,761,175
3	Max Day	\$6,115,811	(\$1,364,889)	(\$340,372)	(\$1,470,183)		\$2,940,367
4	Max Hour	\$6,716,200	(\$1,021,185)	(\$254,660)	(\$1,813,451)		\$3,626,903
5	Conservation	\$1,132,387					\$1,132,387
6	Customer	\$1,881,361					\$1,881,361
7	Meters	\$644,700	\$2,386,074		\$3,283,635		\$6,314,410
8	Fire Protection	\$5,955		\$595,032			\$600,987
9	Revenue Offset	(\$6,309,008)				\$1,222,516	(\$5,086,491)
10	Untreated Offset					(\$36,449)	(\$36,449)
11	Total	\$29,749,184	\$0	\$0	\$0	\$0	\$29,749,184

4.3.11. WATER COST ALLOCATION TO CUSTOMER CLASSES

The final cost of service allocation determines how much revenue must be generated from Ventura Water's water rates and charges. Each cost causation component is recovered by either a fixed charge or Water Volume Rate, by customer class (see **Table 4-44**). The basis for specific exclusions is described in further detail in **Section 4.5**.

Table 4-44: Recovery of Cost Causation Components by Charge Type

[A]	[B]	[C]
Line	Cost Causation Component	Associated Charge
1	Water Supply	Water Volume Rates (excluding reclaimed water)
2	Base Delivery	Water Volume Rates (excluding reclaimed water)
3	Max Day	Water Volume Rates (excluding reclaimed water)
4	Max Hour	Water Volume Rates (excluding reclaimed water)
5	Conservation	Water Volume Rates (excluding reclaimed water)
6	Customer	Water Service Charges; Fire Line Service Charges
7	Meters	Water Service Charges
8	Fire Protection	Fire Line Service Charges
9	Revenue Offset	Water Volume Rates (excluding reclaimed water)
10	Untreated Offset	Untreated Water Volume Rates

Table 4-45 shows projected rate revenues by charge and customer class for FY 2020-21 (based on the prior COS analysis) and for FY 2020-21 (based on the updated COS analysis presented in this section). All proposed COS projections for FY 2020-21 are for illustrative purposes to demonstrate the impact of the updated COS allocations on each customer class. However, no changes to current rates will be implemented prior to FY 2021-22. Note that the results shown are based on detailed calculations that are dependent on rate design considerations addressed subsequently in **Section 4.5**.

Table 4-45: Cost to Serve by Water Customer Class

[A]	[B]	[C]	[D]	[E]	[F]
Line	Charge/Customer Class	Current COS FY 2020-21 (\$)	Proposed COS FY 2020-21 (\$)	Current COS FY 2020-21 (%)	Proposed COS FY 2020-21 (%)
1	Fixed Service Charges				
2	Water Service Charges	\$8,133,433	\$8,146,543	27.3%	27.4%
3	Fire Line Service Charges	\$788,564	\$650,214	2.7%	2.2%
4	Subtotal	\$8,921,997	\$8,796,757	30.0%	29.6%
5					
6	Variable Water Volume Rates				
7	Residential	\$13,950,665	\$13,530,526	46.9%	45.5%
9	Non-Residential	\$6,210,484	\$6,540,497	20.9%	22.0%
10	Non-Residential Irrigation & Institutional/Interruptible	\$558,307	\$804,682	1.9%	2.7%
11	Untreated Water	\$107,732	\$76,722	0.4%	0.3%
12	Subtotal	\$20,827,187	\$20,952,427	70.0%	70.4%
13					
14	Total	\$29,749,184	\$29,749,184	100.0%	100.0%

4.4. Proposed Water Rate Structure Modifications

Raftelis worked closely with Ventura Water staff and the Water Commission to evaluate potential changes to the existing water rate structure. All proposed water rates presented in subsequent sections incorporate the following recommended revisions to the existing water rate structure.

- 1. Adjust Rate Schedule to Reflect Monthly Billing Basis:** Ventura Water plans to transition from billing on a bimonthly basis to a monthly basis beginning in July 2021. Therefore, all proposed fixed charges and residential tier allotments shown are on a monthly basis.
- 2. Consolidation of Non-Residential Irrigation and Institutional/Interruptible customer classes into a single Non-Residential Irrigation customer class:** Institutional/Interruptible water use is associated with water accounts used exclusively for outdoor Non-Residential Irrigation purposes. Raftelis recommends that the Institutional/Interruptible customer class and Non-Residential Irrigation customer classes are consolidated into a single Non-Residential Irrigation customer class. This will simplify the rate structure and harmonize rates due to the existing similarities between the two customer classes in terms of their water use characteristics. Both existing classes' water demands are for dedicated irrigation purposes (i.e. no indoor demands) which are distinct from other users whose metered connections are solely for indoor use (for example, certain master metered commercial and multi-family residential users) or for indoor and outdoor use (for example Single Family Residential connections). This approach to grouping like customer classes and differentiating unlike customer classes is consistent with cost of service principles, industry standards, and rate setting in California.

3. **Elimination of Outside City (County) Surcharge:** Raftelis recommends that Ventura Water eliminate the current surcharge per HCF of water for customers residing outside of City Limits due to a reduced water cost differential compared to the previous Rate Study. This will simplify the rate structure and improve the defensibility and customer understanding of future water rates, while having a minimal effect on Inside City rates.
4. **Differentiate Fire Line Service Charges for Single Family Residential Customers:** Private fire lines associated with single family residential accounts do not receive a separate bill for the Fire Line Service Charge. Therefore, Raftelis recommends that single family residential customers with U-branch fire lines are charged a unique rate to properly offset billing costs already paid by those customers via the Water Service Charge.
5. **Update Residential Tier Allotments:** Raftelis recommends that the rate structure for residential Water Volume Rates be consolidated from four tiers to three tiers. A three-tier rate structure allows for tier allotments to be based on efficient indoor water use for Tier 1, average outdoor water demands for Tier 2, and all use greater than average outdoor use for Tier 3. A well-defined three-tier rate structure is typically easier for customers to understand and may result in less revenue volatility compared to a four-tier rate structure. Current and proposed residential monthly tier allotments and the underlying basis for each is described in detail in **Table 4-46**.

Table 4-46: Proposed Changes to Residential Tier Allotments

Description	Current Monthly Allotment (per Dwelling Unit)	Current Basis	Proposed Monthly Allotment (per Dwelling Unit)	Proposed Basis
Single Family Residential				
Tier 1	0-3 HCF	Essential minimal indoor water needs for health and sanitation	0-6 HCF	Efficient indoor water use (based on single family residential average monthly water use during winter in FY 2018-19)
Tier 2	4-7 HCF	Remaining indoor water use	7-12 HCF	Average peak summer water use (based on single family residential average monthly water use during summer peak in FY 2018-19)
Tier 3	8-15 HCF	Outdoor water use below Tier 4	>12 HCF	All use in excess of Tier 2
Tier 4	>15 HCF	Top 15% of water use targeted for conservation	N/A	N/A
Multiple Family Residential				
Tier 1	0-3 HCF	Essential minimal indoor water use	0-5 HCF	Proposed Single Family Residential Tier 1 modified to account for smaller average household size, per dwelling unit
Tier 2	4-5 HCF	Remaining indoor water use	6-10 HCF	Proposed Single Family Residential Tier 2 modified to account for smaller average household size, per dwelling unit
Tier 3	6-8 HCF	Outdoor water use below Tier 4	>10 HCF	All use in excess of Tier 2
Tier 4	>8 HCF	Top 10% of water use targeted for conservation	N/A	N/A

Table 4-47 shows estimated residential water use by tier under the current four-tier rate structure and proposed three-tier rate structure. All projections are based on detailed account-level analysis of FY 2018-19 residential water use. Raftelis projects that nearly two thirds of all residential water use will fall within Tier 1 under the proposed three-tier residential rate structure.

Table 4-47: Projected FY 2020-21 Residential Water Use by Tier – Current versus Proposed

Description	Current Water Use by Tier (HCF)	Proposed Water Use by Tier (HCF)	Current Water Use by Tier (%)	Proposed Water Use by Tier (%)	% Change
Residential Tier 1	1,638,560	2,556,176	42.3%	66.0%	56.0%
Residential Tier 2	1,172,329	833,762	30.3%	21.5%	-28.9%
Residential Tier 3	814,817	483,169	21.0%	12.5%	-40.7%
Residential Tier 4	247,402	N/A	6.4%	0.0%	-100.0%
Total	3,873,107	3,873,107	100.0%	100.0%	0.0%

4.5. Proposed Water Rates

Section 4.5 shows detailed calculations of proposed water rates through FY 2025-26. All proposed rates are first calculated directly from the results of the COS analysis (in **Section 4.3**) for FY 2020-21 (i.e. the “test year”). Note however that proposed rates will not be implemented until FY 2021-22. Therefore, all FY 2020-21 “COS” rates and charges shown represent intermediate results of the rate design process but will not actually be implemented during FY 2020-21. However, FY 2020-21 “COS” rates and charges must be calculated to provide a basis for proposed rates for FY 2021-22 through FY 2025-26 (shown in **Section 0**).

4.5.1. WATER SERVICE CHARGES (TEST YEAR FY 2020-21)

Table 4-48 shows the calculation of equivalent meters, which is necessary to differentiate Water Service Charges by meter size. Meter capacity ratios (Column D) are first calculated by dividing meter capacity (Column C) by 30 gallons per minute (gpm). Meter capacity ratios (Column D) are then multiplied by the number of water meters at each meter size in Column E (from **Table 4-5**) to determine equivalent meters (Column F). Equivalent meters in this study are based on AWWA-rated hydraulic capacities⁴⁶ and are calculated to represent the potential demand on the water system relative to a base meter size.

Table 4-48: Number of Equivalent Meters (Test Year FY 2020-21)

[A] Line	[B] Meter Size	[C] Meter Capacity (gpm)	[D] Meter Capacity Ratio	[E] Number of Meters	[F] Number of Equivalent Meters
1	3/4-inch water meter	30	1.00	25,198	25,198
2	1-inch water meter	50	1.67	2,500	4,167
3	1.5-inch water meter	100	3.33	956	3,187
4	2-inch water meter	160	5.33	738	3,936
5	3-inch water meter	350	11.67	116	1,349
6	4-inch water meter	630	21.00	70	1,478
7	6-inch water meter	1,300	43.33	74	3,224
8	8-inch water meter	2,400	80.00	7	563
9	10-inch water meter	3,800	126.67	2	255
10	12-inch water meter	5,000	166.67	0	0
11	Total			29,662	43,357

⁴⁶ From the AWWA’s *Manual of Water Supply Practices M22: Sizing Water Service Lines and Meters (Third Edition)*.

Water Service Charges are designed to recover costs associated with the Customer and Meters cost causation components. **Table 4-49** shows the calculation of unit charges for the Customer and Meters cost causation components by dividing the total revenue requirement associated with each cost causation component (from **Table 4-43**, Column H) by the number of billing units.

Customer unit charges are calculated per customer bill. Meter unit charges are calculated per equivalent meter. Equivalent meters are used to allocate meter-related costs appropriately and equitably. Larger meters impose larger demand, are more expensive to install, maintain, and replace than smaller meters, and have greater capacity potential within the water system.

Table 4-49: Water Service Charge Unit Charge Calculation (Test Year FY 2020-21)

Description	Customer	Meters
COS Allocation	\$1,881,361	\$6,314,410
Billing Units	365,512 Bills ⁴⁷	520,286 Annual Equivalent Meters ⁴⁸
Unit Charge (per Month)	\$5.15 per Bill	\$12.14 per Equivalent Meter

Table 4-50 shows the detailed calculation of monthly Water Service Charges for the test year based on Customer and Meters unit charges. Customer costs do not vary by meter size. Therefore, the Customer unit rate is applied uniformly to all Water Service Charges (Column D). Because Meters costs vary by meter size based on hydraulic capacity, AWWA capacity ratios in Column C (from **Table 4-48**, Columns D) are used to differentiate Meters unit charges by meter size. The Meters charges (Column E) are calculated by multiplying the Meters unit charge (from **Table 4-49**) by the AWWA capacity ratio (Column C). COS monthly Water Service Charges (Column F) equal the sum of Columns D-E, and are compared to current FY 2020-21 charges in Columns G-I.

Table 4-50: Water Service Charge Calculation (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
Line	Meter Size	Meter Capacity Ratio	Customer	Meters	COS Monthly Charge	Current Monthly Charge	Difference (\$)	Difference (%)
1	3/4-inch water meter	1.00	\$5.15	\$12.14	\$17.28	\$16.85	\$0.44	2.6%
2	1-inch water meter	1.67	\$5.15	\$20.23	\$25.37	\$25.52	(\$0.14)	-0.6%
3	1.5-inch water meter	3.33	\$5.15	\$40.45	\$45.60	\$47.19	(\$1.59)	-3.4%
4	2-inch water meter	5.33	\$5.15	\$64.73	\$69.87	\$73.21	(\$3.34)	-4.6%
5	3-inch water meter	11.67	\$5.15	\$141.59	\$146.74	\$155.59	(\$8.85)	-5.7%
6	4-inch water meter	21.00	\$5.15	\$254.86	\$260.01	\$276.99	(\$16.98)	-6.1%
7	6-inch water meter	43.33	\$5.15	\$525.91	\$531.06	\$567.49	(\$36.43)	-6.4%
8	8-inch water meter	80.00	\$5.15	\$970.91	\$976.06	\$1,044.42	(\$68.36)	-6.5%
9	10-inch water meter	126.67	\$5.15	\$1,537.28	\$1,542.43	\$1,651.43	(\$109.00)	-6.6%
10	12-inch water meter	166.67	\$5.15	\$2,022.73	\$2,027.88	\$2,171.72	(\$143.84)	-6.6%

⁴⁷ Equal to [29,662 water meters plus 797 fire lines not associated with Single Family Residential accounts] multiplied by 12 monthly billing periods per year.

⁴⁸ Equal to 43,357 equivalent meter units multiplied by 12 monthly billing periods per year.

4.5.2. FIRE LINE SERVICE CHARGES (TEST YEAR FY 2020-21)

Fire Service Charges are designed to recover costs associated with the Customer and Fire Protection cost causation components. **Table 4-51** shows the calculation of unit charges for the Customer and Fire Protection cost causation components by dividing the total revenue requirement associated with each cost causation component (from **Table 4-43**, Column H) by the number of billing units.

Customer unit charges were previously calculated in **Table 4-49** but are shown again below. Fire Protection unit charges are calculated per fire demand equivalent (from Table 4-37). Fire demand equivalents are used to allocate Fire Protection costs by connection size because larger connections are more expensive to install, maintain, and replace than smaller fire lines, and also have greater capacity potential on the water system.

Table 4-51: Fire Line Service Charge Unit Charge Calculation (Test Year FY 2020-21)

Description	Customer	Fire Protection
COS Allocation	\$1,881,361	\$600,987
Billing Units	365,512 Bills ⁴⁹	9,998 Fire Demand Equivalents ⁵⁰
Unit Charge (per Month)	\$5.15 per Bill	\$60.11 per Fire Demand Equivalents

Table 4-52 shows the detailed calculation of monthly Fire Service Charges for the test year based on Customer and Fire Protection unit charges. U-branch fire lines associated with single family residential accounts do not receive separate bills specifically for the Fire Line Service Charge. Therefore, no Customer unit charge is applied to single family residential U-branch fire lines. All other fire lines are subject to the Customer unit charge, which is applied uniformly to all connection sizes (Column D). Because Fire Protection costs vary by connection size based on capacity, equivalent fire demand factors in Column C (from **Table 4-37**, Columns C) are used to differentiate Fire Protection unit charges by connection size. The Fire Protection charges (Column E) are calculated by multiplying the Fire Protection unit charge (from **Table 4-51**) by the equivalent fire demand factors (Column C). COS monthly Fire Line Service Charges (Column F) equal the sum of Columns D-E, and are compared to current FY 2020-21 charges in Columns G-I.

Table 4-52: Fire Line Service Charge Calculation (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
Line	Connection Size	Equivalent Fire Demand	Customer	Fire Protection	COS Monthly Charge	Current Monthly Charge	Difference (\$)	Difference (%)
1	1-inch single family residential U-branch fire line	0.06	\$0.00	\$3.34	\$3.34	\$4.40	(\$1.05)	-23.9%
2	1-inch fire line	0.06	\$5.15	\$3.34	\$8.49	\$4.40	\$4.10	93.2%
3	2-inch fire line	0.06	\$5.15	\$3.34	\$8.49	\$4.40	\$4.10	93.2%
4	3-inch fire line	0.16	\$5.15	\$9.71	\$14.86	\$12.75	\$2.11	16.6%
5	4-inch fire line	0.34	\$5.15	\$20.69	\$25.84	\$27.15	(\$1.30)	-4.8%
6	6-inch fire line	1.00	\$5.15	\$60.11	\$65.26	\$78.84	(\$13.58)	-17.2%
7	8-inch fire line	2.13	\$5.15	\$128.10	\$133.24	\$168.01	(\$34.76)	-20.7%
8	10-inch fire line	3.83	\$5.15	\$230.36	\$235.51	\$302.13	(\$66.61)	-22.0%
9	12-inch fire line	6.19	\$5.15	\$372.10	\$377.25	\$488.01	(\$110.76)	-22.7%

⁴⁹ Equal to [29,662 water meters plus 797 fire lines not categorized as Single Family Residential U-branch lines] multiplied by 12 monthly billing periods per year.

⁵⁰ Equal to 833 Fire Demand Equivalents multiplied by 12 monthly billing periods per year.

4.5.3.WATER VOLUME RATES (TEST YEAR FY 2020-21)

Water Volume Rates are designed to recover the portion of the rate revenue requirement allocated to the following cost causation components: Water Supply, Base Delivery, Peaking (Max Day and Max Hour), Conservation, Revenue Offset, and Untreated Offset. However, the costs associated with each cost causation component listed above are not uniformly applied to each customer class. Customer classes are only subject to each unit cost if the service they receive contributes to the Water Enterprise incurring costs associated with that specific cost causation component. **Table 4-53** shows which unit costs (Columns C-H) each customer class/tier (Lines 1-6) is subject to. Note that reclaimed water rates (which are calculated in the wastewater rate study) are excluded from the proposed Water Volume Rate calculations shown in this section.

Table 4-53: Allocation of Unit Costs to Customer Classes

[A] Line	[B] Customer Class/Tier	[C] Water Supply	[D] Base Delivery	[E] Peaking	[F] Conser- vation	[G] Revenue Offset	[H] Untreated Offset
1	Residential Tier 1	✓	✓	✓		✓	
2	Residential Tier 2	✓	✓	✓	✓	✓	
3	Residential Tier 3	✓	✓	✓	✓	✓	
4	Non-Residential	✓	✓	✓	✓	✓	
5	Non-Residential Irrigation	✓	✓	✓	✓	✓	
6	Untreated	✓	✓	✓	✓	✓	✓

Water Supply Unit Rate

Water supply unit rates are applied equally to all customer classes. Residential Water Supply unit rates are differentiated by tier, however. **Table 4-54** shows the preliminary calculation of Water Supply unit rates before differentiation by residential tier. The revenue requirement associated with the Water Supply cost causation component (from **Table 4-43**, Column H, Line 1) is divided by total billed water use excluding reclaimed water (from **Table 4-6**) to determine the preliminary Water Supply unit rate.

Table 4-54: Preliminary Water Supply Unit Rate

Description	Water Supply
COS Allocation	\$6,614,535
Billing Units	5,611,346 HCF
Unit Rate (per HCF)	\$1.179

Table 4-55 shows the differentiation of residential Water Supply unit rates by preferentially allocating less expensive water supplies to lower tiers. The Water Supply COS allocation is first broken down by supply source (Line 1). Revenue offsets reallocated to the Water Supply cost causation component (from **Table 4-43**, Column G, Line 1) are then applied (Line 2) to determine the net revenue requirement associated with each water supply source (Line 3). Unit costs per acre-foot (Line 13) are then calculated by dividing each supply source’s net revenue requirement (Line 3) by total water supply available to meet billed water use (Line 11).

The residential customer class is then allocated 68.9% of available supply from each source because residential water use is equal to 68.9% of total water use. The residential water supply Line (16) is then allocated to Tiers 1-3. Tier 1 represents efficient indoor water use and is therefore preferentially allocated supplies from the cheapest

source (Ventura River - Foster Park) and then the next cheapest source (groundwater). Tier 2 represents average outdoor use of the class and is therefore allocated all remaining groundwater available to residential customers. Tier 3 represents use greater than the average of the class and is therefore allocated water from the highest cost source of supply (Casitas MWD).

Residential water supply costs (Lines 25-28) are then calculated by multiplying unit costs (Line 13) by the water supply allocations by tier (Lines 19-21). Water supply costs associated with the State Water Project (Column F), VenturaWaterPure (Column G), and unbilled water use for fire training, etc. (Line 31) are uniformly allocated to all units of water regardless of customer class or tier. The adjusted water supply cost allocations by tier (Column H, Lines 40-42) is determined by adding unbilled water supply cost allocations (Lines 34-36) to water supply costs by tier (Lines 25-27). See **Table 4-55** footnotes for additional information.

Table 4-55: Residential Water Supply Cost Allocation by Tier (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Line	Description	Ventura River (Foster Park)	Groundwater	Casitas MWD	State Water Project	Ventura WaterP ure	Total
1	Water Supply Revenue Requirement	\$0	\$3,358,450	\$2,282,172	\$2,110,000	\$49,981	\$7,800,603
2	Water Supply Offset	\$0	(\$89,614) ⁵¹	(\$96,453) ⁵²	(\$1,000,000) ⁵³	\$0	(\$1,186,068)
3	Net Water Supply Revenue Requirement	\$0	\$3,268,836	\$2,185,718	\$1,110,000	\$49,981	\$6,614,535
4							
5	Water Supply						
6	Water Supply (AF)	1,573	10,014	2,561	0	0	14,148
7	Assumed Water Loss	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
8							
9	Water Supply after Loss (AF) ⁵⁴	1,463	9,313	2,381	0	0	13,157
10	Less Saticoy Country Club Golf Course Demand (AF)	0	261	0	0	0	261
11	Water Supply after Loss excl. Saticoy Country Club Golf Course (AF)	1,463	9,052	2,381	0	0	12,896
12							
13	Unit Cost after Loss (\$/AF)	\$0.00	\$361.11	\$917.84	\$86.07	\$3.88	\$512.90
14							
15	Residential Water Supply Allocation (%)	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%
16	Residential Water Supply Allocation (AF)	1,009	6,241	1,642	0	0	8,891
17							
18	Residential Water Supply⁵⁵						
19	Tier 1	1,009	4,860	0	0	0	3,590
20	Tier 2	0	1,381	533	0	0	1,171
21	Tier 3	0	0	1,109	0	0	678
22	Total (AF)	1,009	6,241	1,642	0	0	8,891
23							
24	Residential Water Supply Costs						

⁵¹ The Saticoy Club golf course's estimated share of groundwater assessment costs.

⁵² Pass-through revenue from Casitas Direct customers.

⁵³ State Water Project recoverable expenditures.

⁵⁴ Equal to [Line 6 ÷ (100%-7%)]

⁵⁵ Residential water use equals 68.9% of total water use, and is therefore allocated 68.9% of the supply from each source.

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Line	Description	Ventura River (Foster Park)	Groundwater	Casitas MWD	State Water Project	Ventura WaterP ure	Total
25	Tier 1	\$0	\$1,754,852	\$0	\$505,076	\$22,743	\$2,282,671
26	Tier 2	\$0	\$498,847	\$488,872	\$164,744	\$7,418	\$1,159,881
27	Tier 3	\$0	\$0	\$1,018,072	\$95,470	\$4,299	\$1,117,840
28	Total	\$0	\$2,253,699	\$1,506,944	\$765,290	\$34,460	\$4,560,392
29							
30	Unbilled Water Use (AF) ⁵⁶	2	10	3	0	0	15
31	Unbilled Water Supply Costs	\$0	\$3,683	\$2,463	\$1,251	\$56	\$7,453
32							
33	Unbilled Water Supply Cost Allocation						
34	Tier 1 (45.6% of total water use)	\$0	\$1,678	\$1,122	\$570	\$26	\$3,395
35	Tier 2 (14.9% of total water use)	\$0	\$547	\$366	\$186	\$8	\$1,107
36	Tier 3 (8.6% of total water use)	\$0	\$317	\$212	\$108	\$5	\$642
37	Total	\$0	\$2,542	\$1,700	\$863	\$39	\$5,144
38							
39	Adjusted Water Supply Cost Allocation						
40	Tier 1	\$0	\$1,756,529	\$1,122	\$505,646	\$22,768	\$2,286,066
41	Tier 2	\$0	\$499,395	\$489,238	\$164,929	\$7,426	\$1,160,989
42	Tier 3	\$0	\$317	\$1,018,284	\$95,577	\$4,304	\$1,118,482
44	Total	\$0	\$2,256,241	\$1,508,644	\$766,153	\$34,499	\$4,565,536

⁵⁶ Water use for fire training and other miscellaneous water uses not subject to billing

Table 4-56 shows the calculation of residential Water Supply unit rates by tier. Each tier’s water supply cost allocation (from **Table 4-55**) is divided by the water use in the respective tier (from **Table 4-47**) to determine the Water Supply unit rate.

Table 4-56: Residential Water Supply Unit Rates by Tier

Residential Tier	Water Supply Cost Allocation	Water Use (HCF)	Water Supply Unit Rate (per HCF)
Tier 1	\$2,286,066	2,556,176	\$0.894
Tier 2	\$1,160,989	833,762	\$1.392
Tier 3	\$1,118,482	483,169	\$2.315

Table 4-57 summarizes the proposed Water Supply unit rates by customer class and tier based on **Table 4-56** for residential customers and **Table 4-54** for all other customer classes.

Table 4-57: Water Supply Unit Rates by Customer Class and Tier

Customer Class/Tier	Water Supply Unit Rate (per HCF)
Residential Tier 1	\$0.894
Residential Tier 2	\$1.392
Residential Tier 3	\$2.315
Non-Residential	\$1.179
Non-Residential Irrigation	\$1.179
Untreated	\$1.179

Base Delivery Unit Rate

Base Delivery unit rates are applied uniformly to all customer classes and tiers as these are costs for providing water during average daily demand conditions. **Table 4-58** shows the calculation of Base Delivery unit rates. The revenue requirement associated with the Base Delivery cost causation component (from **Table 4-43**, Column H, Line 2) is divided by total billed water use excluding reclaimed water (from **Table 4-6**) to determine the Base Delivery unit rate.

Table 4-58: Base Delivery Unit Rate

Description	Base Delivery
COS Allocation	\$11,761,175
Billing Units (HCF)	5,611,346
Unit Rate (\$ / HCF)	\$2.096

Peaking Unit Rate

Peaking unit rates vary by customer class and tier based on peak water use characteristics. Before unit rates can be differentiated by customer class and tier, **Table 4-59** shows the calculation of Max Day and Max Hour unit costs. The revenue requirement associated with the Max Day and Max Hour cost causation components (from **Table 4-43**, Column H, Lines 3-4) is divided by total Max Day and Max Hour requirements not associated with fire protection (from **Table 4-42**, Columns C and E, Lines 1-6) to determine the Max Day and Max Hour unit costs .

Table 4-59: Peaking Unit Costs

Description	Max Day	Max Hour
COS Allocation	\$2,940,367	\$3,626,903
Billing Units	3,734 HCF/Day	30,782 HCF/Day
Unit Cost (HCF/Day)	\$787.42	\$117.83

Table 4-60 shows the development of Peaking unit rates for each customer class and tier. Total Max Day and Max Hour unit costs are allocated to each customer class and tier based on Max Day and Max Hour requirements, respectively. Max Day requirements in Column C (from **Table 4-42**, Column C) are multiplied by the Max Day unit cost (from **Table 4-59**) to determine allocated Max Day costs (Column D). Max Hour requirements in Column E (from **Table 4-42**, Column E) are multiplied by the Max Hour unit cost (from **Table 4-59**) to determine allocated Max Hour costs (Column F). Total allocated peaking costs (Column G) equal the sum of allocated Max Day costs (Column D) and allocated Max Hour costs (Column F). The Peaking unit rate (Column I) is calculated by dividing total allocated peaking costs (Column G) by projected FY 2020-21 water use in Column C (from **Table 4-47** for residential customers and **Table 4-6** for all other customer classes).

Table 4-60: Peaking Unit Rates

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
Line	Customer Class/Tier	Max Day Requirements (HCF/Day)	Allocated Max Day Costs	Max Hour Requirements (HCF/Day)	Allocated Max Hour Costs	Total Allocated Peaking Costs	FY 2020-21 Water Use (HCF)	Peaking Unit Rate (\$/HCF)
1	Residential Tier 1	318	\$250,080	11,792	\$1,389,444	\$1,639,524	2,556,176	\$0.641
2	Residential Tier 2	685	\$539,444	4,784	\$563,637	\$1,103,081	833,762	\$1.323
3	Residential Tier 3	596	\$469,303	3,093	\$364,423	\$833,727	483,169	\$1.726
4	Non-Residential	1,809	\$1,424,175	9,731	\$1,146,628	\$2,570,803	1,544,580	\$1.664
5	Non-Residential Irrigation	295	\$232,573	1,213	\$142,925	\$375,498	166,992	\$2.249
6	Untreated	31	\$24,791	168	\$19,845	\$44,636	26,666	\$1.674

Conservation Unit Rate

Conservation unit rates are applied equally to all non-Residential customer classes. Residential Conservation unit rates are differentiated by tier, however. **Table 4-61** shows the preliminary calculation of Conservation unit rates before differentiation by residential tier. The revenue requirement associated with the Conservation cost causation component (from **Table 4-43**, Column H, Line 5) is divided by total billed water use excluding reclaimed water (from **Table 4-6**) to determine the uniform Conservation unit rate.

Table 4-61: Preliminary Conservation Unit Rate

Description	Conservation
COS Allocation	\$1,132,387
Billing Units	5,611,346 HCF
Unit Rate (per HCF)	\$0.202

Conservation costs are applied to all customer classes, but are differentiated by residential tier. This is necessary because conservation efforts are generally aimed at curtailing outdoor water use that is represented by Tier 2 and Tier 3. Tier 1 use represents essential indoor use that conservation and efficiency efforts typically do not aim to address. Therefore, Raftelis recommends that no Conservation costs are allocated to Tier 1. The Water Commission expressed support for this recommendation. **Table 4-62** shows the calculation of Conservation unit rates for the residential tiers. Because Conservation costs are allocated to all customer classes proportionally, the residential customer class must recover its fair share of Conservation costs based on total class water use.

Total Single Family Residential water use in Line 5 (from **Table 4-47**) is multiplied by the uniform Conservation unit rate in Line 7 (from **Table 4-61**) to determine the total Conservation revenue requirement for residential customers (Line 9). Tier 1 water use (Line 1) is subtracted from total residential water use (Line 5) to determine the adjusted units of service (Line 11) subject to the Conservation component. The adjusted unit rate (Line 13) equals the residential Conservation revenue requirement (Line 9) divided by the adjusted units of service (Line 11). This represents the Conservation unit rate to be applied to Tier 2 and Tier 3 (Lines 16-17). Tier 1 is excluded from Conservation cost recovery (Line 15).

Table 4-62: Residential Conservation Unit Rates by Tier

[A]	[B]	[C]	[D]
Line	Description	FY 2020-21	Notes
1	Residential Water Use (HCF)		
2	Tier 1	2,556,176	
3	Tier 2	833,762	
4	Tier 3	483,169	
5	Total Residential Water Use (HCF)	3,873,107	
6			
7	Conservation Unit Cost (per HCF)	\$0.202	
8			
9	Residential Conservation Revenue Requirement	\$781,605	= Line 5 × Line 7
10			
11	Adjusted Units of Service (<i>Tier 2-3 Water Use only</i>)	1,316,931	= Line 5 - Line 1
12			
13	Adjusted Unit Rate (<i>Tier 2-3 only</i>)	\$0.594	= Line 9 ÷ Line 11
14			
15	Tier 1 Conservation Unit Rate	\$0.000	
16	Tier 2 Conservation Unit Rate	\$0.594	= Line 13
17	Tier 3 Conservation Unit Rate	\$0.594	= Line 13

Table 4-63 summarizes the proposed Conservation unit rates by customer class and tier based on Table 4-62 for residential customers and **Table 4-61** for all other customer classes.

Table 4-63: Conservation Unit Rates by Customer Class and Tier

Customer Class/Tier	Conservation Unit Rate (per HCF)
Residential Tier 1	\$0.000
Residential Tier 2	\$0.594
Residential Tier 3	\$0.594
Non-Residential	\$0.202
Non-Residential Irrigation	\$0.202
Untreated	\$0.202

Revenue Offset Unit Rate

Revenue Offset unit rates are applied equally to all customer classes and tiers. **Table 4-64** shows the calculation of Revenue Offset unit rates. The revenue requirement associated with the Revenue Offset cost causation component (from **Table 4-43**, Column H, Line 9) is divided by total billed water use excluding reclaimed water (from **Table 4-6**) to determine the Revenue Offset unit rate.

Table 4-64: Revenue Offset Unit Rate

Description	Revenue Offset
COS Allocation	(\$5,086,491)
Billing Units (HCF)	5,611,346
Unit Rate (per HCF)	(\$0.906)

Untreated Offset Unit Rate

The Untreated Offset unit rate is only applied to Untreated Water customers to offset any treatment-related costs allocated to the Untreated Water customer class via the Base Delivery, Max Day, and Max Hour cost causation components. **Table 4-65** shows the calculation of the Untreated Offset unit rate. Total operating and capital revenue requirements assigned to the Treatment functional category are divided by total water sales requiring treatment by Ventura Water⁵⁷ to determine an average unit cost of water treatment and therefore the Untreated Offset unit rate.

⁵⁷ Water supplied by Casitas MWD is treated before delivery to Ventura Water’s water system.

Table 4-65: Untreated Offset Unit Rate

Description	Untreated Offset
Treatment Functional Category	
O&M Revenue Requirement ⁵⁸	\$5,735,923
Capital Revenue Requirement ⁵⁹	\$516,095
Total	\$6,252,018
Water Sales (excl. Casitas Supply)⁶⁰	4,574,021 HCF
Untreated Offset Unit Rate (per HCF)	\$1.367

Water Volume Rate Calculation (Test Year FY 2020-21)

Table 4-66 shows the calculation of Water Volume Rates for the test year. No revenue adjustments are incorporated into the COS rates shown, which are designed to collect the same amount of revenue as current water rates. Unit rates are applied to each customer class in accordance with **Table 4-53**. The COS rate (Column I) is calculated by summing the following unit rates (Columns C-H):

- » Water Supply Unit Rates (from **Table 4-57**)
- » Base Delivery Unit Rates (from **Table 4-58**)
- » Peaking Unit Rates (from **Table 4-60**)
- » Conservation Unit Rates (from **Table 4-63**)
- » Revenue Offset Unit Rates (from **Table 4-64**)
- » Untreated Offset Unit Rates (from **Table 4-65**)

⁵⁸ From **Table 4-32**.

⁵⁹ Equal to total capital revenue requirement in FY 2020-21 (\$2,617,929) multiplied by percent of total asset value associated with the Treatment functional category (19.7%).

⁶⁰ From **Table 4-7**.

Table 4-66: Water Volume Rates Calculation (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]
Line	Customer Class	Supply Unit Rate	Base Delivery Unit Rate	Peaking Unit Rate	Conservation Unit Rate	Revenue Offset Unit Rate	Untreated Offset Unit Rate	COS Rate Per HCF	Current Rate per HCF (Stage 2)	Difference (\$)	Difference (%)
1	Residential Tier 1	\$0.894	\$2.096	\$0.641	\$0.000	(\$0.906)	\$0.000	\$2.73	\$2.77	(\$0.04)	-1.6%
2	Residential Tier 2	\$1.392	\$2.096	\$1.323	\$0.594	(\$0.906)	\$0.000	\$4.50	\$3.12	\$1.38	44.2%
3	Residential Tier 3	\$2.315	\$2.096	\$1.726	\$0.594	(\$0.906)	\$0.000	\$5.82	\$4.62	\$1.20	26.0%
4	Non-Residential	\$1.179	\$2.096	\$1.664	\$0.202	(\$0.906)	\$0.000	\$4.23	\$3.98	\$0.25	6.4%
5	Non-Residential Irrigation	\$1.179	\$2.096	\$2.249	\$0.202	(\$0.906)	\$0.000	\$4.82	\$4.25	\$0.57	13.4%
6	Untreated Water	\$1.179	\$2.096	\$1.674	\$0.202	(\$0.906)	(\$1.367)	\$2.88	\$3.44	(\$0.56)	-16.4%

Proposed Five-Year Water Rate Schedule Table 4-67 shows the proposed five-year schedule of water rates for FY 2021-22 to FY 2025-26. Proposed FY 2021-22 water rates were calculated by increasing COS Water Service Charges (from **Table 4-49**), Fire Line Service Charges (from **Table 4-50**), and Water Volume Rates (from **Table 4-66**) by the proposed FY 2021-22 revenue adjustment of 7 percent (from **Table 4-26**). All proposed rates in subsequent years are then increased by 7 percent per year based on the schedule of proposed revenue adjustments (from **Table 4-26**). All proposed rates are rounded up to the nearest cent to ensure adequate revenue recovery. Current FY 2020-21 water rates (from **Table 4-1**) are also shown. Current fixed charges are shown on a monthly basis. Current Water Volume Rates are Water Shortage Stage 2 rates. Proposed rates reflect non-shortage / new baseline supply and demand conditions. Note that Water Volume Rates for reclaimed water customers are presented in **Table 4-67**, but are calculated as part of the wastewater rate study in **Section 5**.

Table 4-67: Proposed Five-Year Water Rate Schedule

Description	Current	Proposed July 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Monthly Water Service Charge						
3/4-inch water meter	\$16.85	\$18.50	\$19.79	\$21.18	\$22.66	\$24.25
1-inch water meter	\$25.52	\$27.16	\$29.06	\$31.09	\$33.27	\$35.59
1.5-inch water meter	\$47.19	\$48.80	\$52.21	\$55.87	\$59.78	\$63.96
2-inch water meter	\$73.21	\$74.77	\$80.00	\$85.60	\$91.60	\$98.01
3-inch water meter	\$155.59	\$157.02	\$168.01	\$179.77	\$192.35	\$205.81
4-inch water meter	\$276.99	\$278.22	\$297.69	\$318.53	\$340.83	\$364.69
6-inch water meter	\$567.49	\$568.24	\$608.01	\$650.57	\$696.11	\$744.84
8-inch water meter	\$1,044.42	\$1,044.39	\$1,117.50	\$1,195.72	\$1,279.42	\$1,368.98
10-inch water meter	\$1,651.43	\$1,650.40	\$1,765.93	\$1,889.54	\$2,021.81	\$2,163.34
12-inch water meter	\$2,171.72	\$2,169.84	\$2,321.73	\$2,484.25	\$2,658.14	\$2,844.21
Monthly Fire Line Service Charge						
1-inch single family residential U-branch fire line	\$4.40	\$3.58	\$3.83	\$4.10	\$4.39	\$4.69
1-inch fire line	\$4.40	\$9.09	\$9.73	\$10.41	\$11.13	\$11.91
2-inch fire line	\$4.40	\$9.09	\$9.73	\$10.41	\$11.13	\$11.91
3-inch fire line	\$12.75	\$15.90	\$17.02	\$18.21	\$19.48	\$20.84
4-inch fire line	\$27.15	\$27.65	\$29.59	\$31.66	\$33.88	\$36.25
6-inch fire line	\$78.84	\$69.83	\$74.72	\$79.95	\$85.54	\$91.53
8-inch fire line	\$168.01	\$142.58	\$152.56	\$163.24	\$174.66	\$186.89
10-inch fire line	\$302.13	\$252.00	\$269.64	\$288.52	\$308.71	\$330.32
12-inch fire line	\$488.01	\$403.66	\$431.92	\$462.15	\$494.50	\$529.11
Water Volume Rates (per HCF)						
Single Family Residential						
<i>Tier 1 (Current: 0-3 HCF per month / Proposed: 0-6 HCF per month)</i>	\$2.77	\$2.92	\$3.13	\$3.34	\$3.58	\$3.83
<i>Tier 2 (Current: 4-7 HCF per month / Proposed: 7-12 HCF per month)</i>	\$3.12	\$4.82	\$5.16	\$5.52	\$5.90	\$6.31
<i>Tier 3 (Current: 8-15 HCF per month / Proposed: >12 HCF per month)</i>	\$4.62	\$6.24	\$6.67	\$7.14	\$7.64	\$8.17
<i>Tier 4 (Current: >15 HCF per month / Proposed: N/A)</i>	\$7.73	N/A	N/A	N/A	N/A	N/A
Multiple Family Residential						
<i>Tier 1 (Current: 0-3 HCF per month / Proposed: 0-5 HCF per month)</i>	\$2.77	\$2.92	\$3.13	\$3.34	\$3.58	\$3.83
<i>Tier 2 (Current: 4-5 HCF per month / Proposed: 6-10 HCF per month)</i>	\$3.12	\$4.82	\$5.16	\$5.52	\$5.90	\$6.31
<i>Tier 3 (Current: 6-8 HCF per month / Proposed: >10 HCF per month)</i>	\$4.62	\$6.24	\$6.67	\$7.14	\$7.64	\$8.17
<i>Tier 4 (Current: >8 HCF per month / Proposed: N/A per month)</i>	\$7.73	N/A	N/A	N/A	N/A	N/A
Non-Residential	\$3.98	\$4.54	\$4.85	\$5.19	\$5.56	\$5.94
Non-Residential Irrigation	\$4.25	\$5.16	\$5.52	\$5.91	\$6.32	\$6.76
Institutional/Interruptible	\$3.29	N/A	N/A	N/A	N/A	N/A
Untreated Water	\$3.44	\$3.08	\$3.30	\$3.53	\$3.78	\$4.04
Reclaimed Water	\$0.95	\$1.16	\$1.23	\$1.31	\$1.38	\$1.47
Outside City Limits Surcharge (per HCF)						
All Customer Classes	\$0.60	N/A	N/A	N/A	N/A	N/A

4.6. Proposed Water Shortage Surcharges

4.6.1. WATER SHORTAGE EVENT CONTINGENCY PLAN UPDATE

Ventura Water conducted a Water Shortage Rate Study in 2015 to establish a system of implementing increased Water Volume Rates during declared water shortage stages. This was necessary to recover revenue shortfalls resulting from reduced water sales during the recent drought. Water shortage stages are currently declared based on criteria outlined in Ventura Water’s 2015 Water Shortage Event Contingency Plan. Stage 3 Water Volume Rates were implemented upon adoption of the 2015 Water Shortage Rate Study and were in effect until June 2020. Stage 2 rates have been effect since July 2020.

Ventura Water is in the process of updating the 2015 Water Shortage Event Contingency Plan, which will incorporate updated criteria for declaring water shortage stages (see **Table 4-68**). The 2020 Water Shortage Contingency Plan compares current supply and current demand, instead of current supply and normal supply as was done in the 2015 Water Shortage Event Contingency Plan. Current demand will be estimated using the most recent five years of customer demands plus projected demands due to annual growth. The key impact of the 2020 Water Shortage Event Contingency Plan update will be that water shortage stages are less likely to be declared in the future. Based on new baseline water demand and projected supply conditions, it is anticipated that the current Stage 2 declaration will be rescinded, and no Water Shortage rates will be implemented in FY 2021-22.

Table 4-68: Current versus Updated Water Shortage Stages

Water Shortage Stage	Demand Reduction Goal	Trigger
2015 Water Shortage Event Contingency Plan (Current supply and normal supply comparison)		
Stage 1	10% Voluntary	Annual supply projection is 10% below baseline supply
Stage 2	10% Mandatory	Annual supply projection is 10-19% below baseline supply
Stage 3	20% Mandatory	Annual supply projection is 20-29% below baseline supply
Stage 4	30% Mandatory	Annual supply projection is 30-39% below baseline supply
Stage 5	40% Mandatory	Annual supply projection is 40-49% below baseline supply
Stage 6	50% Mandatory	Annual supply projection is below 50% baseline supply
Updated Water Shortage Event Contingency Plan (Current supply and current demand comparison)		
Stage 1	10% Voluntary	Annual supply projection is between 0 and 10% below demand projection
Stage 2	10% Mandatory	Annual supply projection is greater than or equal to 10% and less than 20% below demand projection
Stage 3	20% Mandatory	Annual supply projection is greater than or equal to 20% and less than 30% below demand projection
Stage 4	30% Mandatory	Annual supply projection is greater than or equal to 30% and less than 40% below demand projection
Stage 5	40% Mandatory	Annual supply projection is greater than or equal to 40% and less than 50% below demand projection
Stage 6	50% Mandatory	Annual supply projection is greater than or equal to 50% below demand projection

4.6.2. PROPOSED CHANGES TO WATER SHORTAGE RATE STRUCTURE

Raftelis recommends that Ventura Water update its existing structure of Water Shortage Rates to account for updates to the 2015 Water Shortage Event Contingency Plan and also to simplify the existing water shortage rate structure. Under the current schedule of Water Shortage Rates, Water Volume Rates increase with each subsequent

water shortage stage beginning with Stage 2. In place of adjusting Water Volume Rates with each stage, Raftelis recommends that Ventura Water maintain the same base condition Water Volume Rates (from **Table 4-67**) at each stage, and communicate the shortage conditions as Water Shortage Surcharges, assessed separately during Shortage Stages 2-6. This change does not affect the revenue needs in shortage; it is recommended to more clearly communicate to customers the impact of water shortage conditions on each bill.

Additionally, Raftelis recommends harmonizing the tier allotments in shortage and non-shortage to simplify the schedule of shortage surcharges and to improve customer understanding. Currently, in shortage conditions, the first Residential tier is split in to two tiers, which yields a four-tier rate structure in shortage and a three-tier structure in non-shortage. The proposed Water Shortage Surcharges maintain the same three-tier structure and the same allotments in shortage and non-shortage conditions. These recommended changes to the structure are proposed to take effect in conjunction with the non-shortage / base rate proposal in FY 2021-22.

4.6.3.CALCULATION OF PROPOSED WATER SHORTAGE SURCHARGES

This subsection shows detailed calculations of proposed Water Shortage Surcharges through FY 2025-26. All proposed surcharges are first calculated for FY 2020-21 (i.e. the “test year”) to maintain consistency with the water COS analysis. Note however that the first year that surcharges would be adopted (but not implemented) is FY 2021-22. Therefore, all “proposed” FY 2020-21 surcharges shown represent cost of service results in the current fiscal year. Surcharges must be calculated for the FY 2020-21 test year to provide a basis for proposed surcharges for FY 2021-22 through FY 2025-26.

Water shortage rates are designed to recover net revenue shortfalls during periods of reduced water sales. The first step in the development of Water Shortage Surcharges is to estimate reductions in water use at each water shortage stage. **Table 4-69** shows projected reductions in FY 2020-21 water use by customer class and tier. Reductions were estimated in consultation with Ventura Water staff relying on a mix of prior study assumptions, actual reductions during recent shortage conditions, and professional judgment. All reductions shown are relative to “base” (non-shortage) water use projections (from **Table 4-47** for residential customers and **Table 4-6** for all other customer classes).

Table 4-69: Projected Water Use Reduction by Water Shortage Stage (FY 2020-21)

Description	Base	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Water Use Reduction						
Single Family Residential						
Tier 1	N/A	8%	15%	23%	33%	45%
Tier 2	N/A	15%	35%	55%	75%	85%
Tier 3	N/A	30%	50%	75%	90%	95%
Multiple Family Residential						
Tier 1	N/A	6%	11%	17%	24%	34%
Tier 2	N/A	8%	18%	28%	38%	43%
Tier 3	N/A	30%	50%	75%	90%	95%
Non-Residential	N/A	7%	14%	21%	28%	35%
Non-Residential Irrigation	N/A	20%	35%	55%	75%	90%
Untreated	N/A	15%	35%	50%	65%	80%
Total Water Use Reduction	N/A	10%	20%	30%	40%	50%
Water Use (HCF)						
Single Family Residential						
Tier 1	1,563,606	1,446,335	1,329,065	1,211,795	1,055,434	859,983
Tier 2	510,010	433,509	331,507	229,505	127,503	76,502
Tier 3	295,553	206,887	147,777	73,888	29,555	14,778
Multiple Family Residential						
Tier 1	992,570	936,303	880,035	823,767	748,744	654,965
Tier 2	323,752	298,903	265,770	232,637	199,504	182,938
Tier 3	187,616	131,331	93,808	46,904	18,762	9,381
Non-Residential	1,544,580	1,436,460	1,328,339	1,220,218	1,112,098	1,003,977
Non-Residential Irrigation	166,992	133,594	108,545	75,146	41,748	16,699
Untreated	26,666	22,666	17,333	13,333	9,333	5,333
Total Water Use (HCF)	5,611,346	5,045,987	4,502,177	3,927,193	3,342,680	2,824,554

Table 4-70 shows the detailed calculation of Water Shortage Surcharges as a percent of base Water Volume Rates. Stage 1 is omitted because Stage 1 calls for a voluntary 10 percent reduction in water demand. The net revenue loss to be recovered by Water Shortage Surcharges is based on three components:

- 1. Total rate revenue loss:** As water sales decrease with each subsequent stage, revenues from Water Volume Rates also decline. Raftelis projected annualized Water Volume Rate revenues in FY 2020-21 under each stage based on proposed FY 2020-21 Water Volume Rates (from Table 4-66) and projected water demand by customer class and stage (from Table 4-69).
- 2. Additional Water Shortage Costs:** Ventura Water staff provided Raftelis with projected cost increases at each stage to implement further conservation efforts.
- 3. Variable O&M Cost Savings:** During periods of reduced water sales, the Water Enterprise will experience modest decreases in variable operating costs. Raftelis estimated variable weighted average costs of water supply, electricity, and water treatment chemicals to project O&M costs savings at each stage.

The total net revenue loss equals the sum of the three aforementioned components and represents the additional revenue required from Water Shortage Surcharges at each stage. Dividing the net revenue loss by annualized Water Volume Rate revenue under “base rates” results in the proposed FY 2020-21 Water Shortage Surcharges (as a percent of base rates).

Table 4-70: Calculation of Water Shortage Surcharges (Test Year FY 2020-21)

Description	Base	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Revenue Loss						
Projected Water Sales (HCF)	5,611,346	5,045,987	4,502,177	3,927,193	3,342,680	2,824,554
% Change in Projected Water Sales from Base	0%	-10%	-20%	-30%	-40%	-50%
Annualized Rate Revenue under Base Rates	\$20,952,427	\$18,549,180	\$16,311,726	\$13,897,189	\$11,606,378	\$9,783,480
Total Rate Revenue Loss	\$0	\$2,403,247	\$4,640,701	\$7,055,238	\$9,346,048	\$11,168,947
Additional Water Shortage Costs						
Professional Services	\$0	\$100,000	\$200,000	\$200,000	\$300,000	\$300,000
Advertising	\$0	\$20,000	\$30,000	\$50,000	\$60,000	\$60,000
Conservation Hardware	\$0	\$0	\$5,000	\$10,000	\$10,000	\$10,000
Total Additional Costs	\$0	\$120,000	\$235,000	\$260,000	\$370,000	\$370,000
Variable O&M Cost Savings						
Projected Water Loss	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Supply Reduction (HCF)	0	607,913	1,192,654	1,810,917	2,439,426	2,996,550
Weighted Average Variable Supply Cost (\$/HCF)	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67
Weighted Average Variable Electrical Cost (\$/HCF)	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22
Weighted Average Variable Chemical Cost (\$/HCF)	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04
Projected Supply Savings	\$0	(\$408,176)	(\$800,795)	(\$1,215,920)	(\$1,637,926)	(\$2,012,000)
Projected Electrical Savings	\$0	(\$134,793)	(\$264,448)	(\$401,536)	(\$540,895)	(\$664,427)
Projected Chemical Savings	\$0	(\$22,302)	(\$43,754)	(\$66,436)	(\$89,494)	(\$109,932)
Total Change in O&M	\$0	(\$565,271)	(\$1,108,997)	(\$1,683,892)	(\$2,268,314)	(\$2,786,360)
Net Revenue Loss	\$0	\$1,957,975	\$3,766,704	\$5,631,346	\$7,447,734	\$8,752,588
Surcharge (% of Base Rate)		10.6%	23.1%	40.5%	64.2%	89.5%

Table 4-71 shows the calculation of Water Shortage Surcharges per HCF at each stage for the test year (FY 2020-21). Surcharges per HCF are equal to the COS Water Volume Rates (from Table 4-66) multiplied by the corresponding surcharge percentages at each stage (from Table 4-70). This approach ensures that surcharges by class, tier, and stage are proportional to the cost of service analysis and the cost to service each respective user. In this way the results of the cost of service are maintained through shortage conditions and over the five-year rate-setting period.

Table 4-71: Calculated Water Shortage Stage Surcharges per HCF (Test Year FY 2020-21)

Description	COS Base Rate	Stage 2 Surcharge	Stage 3 Surcharge	Stage 4 Surcharge	Stage 5 Surcharge	Stage 6 Surcharge
Water Shortage Surcharge (% of Base Rates)	N/A	10.6%	23.1%	40.5%	64.2%	89.5%
Customer Class/Tier						
Residential Tier 1	\$2.73	\$0.29	\$0.63	\$1.10	\$1.75	\$2.44
Residential Tier 2	\$4.50	\$0.47	\$1.04	\$1.82	\$2.89	\$4.02
Residential Tier 3	\$5.82	\$0.61	\$1.34	\$2.36	\$3.74	\$5.21
Non-Residential	\$4.23	\$0.45	\$0.98	\$1.72	\$2.72	\$3.79
Non-Residential Irrigation	\$4.82	\$0.51	\$1.11	\$1.95	\$3.09	\$4.31
Untreated	\$2.88	\$0.30	\$0.66	\$1.17	\$1.85	\$2.57

Table 4-72 shows the proposed five-year schedule of Water Shortage Surcharges for FY 2021-22 to FY 2025-26. Proposed FY 2021-22 surcharges were calculated by increasing the COS surcharges for the test year (from Table 4-71 by the proposed FY 2021-22 revenue adjustment of 7 percent (from Table 4-26). All proposed surcharges in subsequent years are then increased by 7 percent per year based on the schedule of proposed revenue adjustments (from Table 4-26). All proposed surcharges are rounded up to the nearest cent to ensure adequate revenue recovery.

Table 4-72: Proposed Five-Year Schedule of Water Shortage Surcharges

Proposed Water Shortage Surcharges (per HCF)	Proposed July 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Revenue Adjustment	7.0%	7.0%	7.0%	7.0%	7.0%
Stage 1 (10% Voluntary Reduction)					
Residential Tier 1	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Residential Tier 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Residential Tier 3	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Non-Residential	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Non-Residential Irrigation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Untreated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Stage 2 (10% Mandatory Reduction)					
Residential Tier 1	\$0.31	\$0.33	\$0.36	\$0.38	\$0.41
Residential Tier 2	\$0.51	\$0.55	\$0.59	\$0.63	\$0.67
Residential Tier 3	\$0.66	\$0.71	\$0.76	\$0.81	\$0.87
Non-Residential	\$0.48	\$0.52	\$0.55	\$0.59	\$0.63
Non-Residential Irrigation	\$0.55	\$0.59	\$0.63	\$0.67	\$0.72
Untreated	\$0.33	\$0.35	\$0.38	\$0.40	\$0.43
Stage 3 (20% Mandatory Reduction)					
Residential Tier 1	\$0.68	\$0.73	\$0.78	\$0.83	\$0.89
Residential Tier 2	\$1.12	\$1.19	\$1.28	\$1.37	\$1.46
Residential Tier 3	\$1.44	\$1.54	\$1.65	\$1.77	\$1.89
Non-Residential	\$1.05	\$1.12	\$1.20	\$1.29	\$1.38
Non-Residential Irrigation	\$1.20	\$1.28	\$1.37	\$1.46	\$1.57
Untreated	\$0.72	\$0.77	\$0.82	\$0.88	\$0.94
Stage 4 (30% Mandatory Reduction)					
Residential Tier 1	\$1.19	\$1.27	\$1.36	\$1.45	\$1.55
Residential Tier 2	\$1.96	\$2.09	\$2.24	\$2.39	\$2.56
Residential Tier 3	\$2.53	\$2.71	\$2.90	\$3.10	\$3.31
Non-Residential	\$1.84	\$1.97	\$2.11	\$2.25	\$2.41
Non-Residential Irrigation	\$2.09	\$2.24	\$2.40	\$2.56	\$2.74
Untreated	\$1.25	\$1.34	\$1.43	\$1.53	\$1.64
Stage 5 (40% Mandatory Reduction)					
Residential Tier 1	\$1.88	\$2.01	\$2.15	\$2.30	\$2.46
Residential Tier 2	\$3.09	\$3.31	\$3.54	\$3.79	\$4.05
Residential Tier 3	\$4.00	\$4.28	\$4.58	\$4.90	\$5.25
Non-Residential	\$2.91	\$3.12	\$3.33	\$3.57	\$3.82
Non-Residential Irrigation	\$3.31	\$3.55	\$3.79	\$4.06	\$4.34
Untreated	\$1.98	\$2.12	\$2.27	\$2.43	\$2.59
Stage 6 (50% Mandatory Reduction)					
Residential Tier 1	\$2.61	\$2.80	\$2.99	\$3.20	\$3.42
Residential Tier 2	\$4.31	\$4.61	\$4.94	\$5.28	\$5.65
Residential Tier 3	\$5.58	\$5.97	\$6.39	\$6.83	\$7.31
Non-Residential	\$4.06	\$4.34	\$4.65	\$4.97	\$5.32
Non-Residential Irrigation	\$4.62	\$4.94	\$5.29	\$5.66	\$6.05
Untreated	\$2.76	\$2.95	\$3.16	\$3.38	\$3.62

5. Wastewater Rate Study

5.1. Key Inputs and Assumptions

Raftelis developed a wastewater rate model in Microsoft Excel to project financial calculations over the next ten fiscal years with projections shown in this section through the five-year rate-setting period of FY 2025-26 (i.e. the “study period”). Please refer to **Appendix C** for ten-year financial plan projections through FY 2029-30. The City’s fiscal year spans from July 1 through June 30. Projections in future years were generally made based on actual or estimated FY 2018-19 or FY 2019-20 data using key assumptions outlined below. Assumptions were discussed with and reviewed by Ventura Water, Public Works, and Finance staff to ensure that the City wastewater system’s unique characteristics are accurately accounted for. Note that most table values shown throughout this report are rounded to the last digit shown and may therefore not sum precisely to the totals shown.

5.1.1. CURRENT WASTEWATER RATES

Table 5-1 shows the wastewater rates currently in effect in FY 2020-21, which were developed during the prior rate study in 2014. Rates and charges vary by customer class. Residential customers are subject to a bimonthly Fixed Charge per dwelling unit plus a variable Flow Charge based on average winter water use (subject to a maximum or “cap”). Commercial customers and churches also pay a bimonthly Fixed Charge plus a variable Flow Charge based on actual water use each billing period. Schools pay a bimonthly charge per average daily attendance (ADA). Industrial customers pay three different charges: per million gallons of wastewater flows, per 1,000 pounds of chemical oxygen demand (COD), and per 1,000 pounds of suspended solids (SS) based on actual measurement of each industrial customer’s wastewater discharge. All customers are currently subject to an Estuary Protection Charge equal to 10 percent of each wastewater bill. Wastewater rates have not changed since July 2017. All current charges are shown on a bimonthly basis. However, Ventura Water plans to transition from bimonthly to monthly billing beginning in July 2021. All proposed rates and charges presented in subsequent sections of this report are therefore shown in monthly terms.

Table 5-1: Current Wastewater Rate Schedule

Description	FY 2020-21
Single Family Residential	
Bimonthly Fixed Charge	\$25.68
Flow Charge (per HCF) ⁶¹	\$3.76
Multiple Family Residential	
Bimonthly Fixed Charge (per dwelling unit)	\$19.01
Flow Charge (per HCF) ⁶²	\$3.76
Commercial	
Bimonthly Fixed Charge	\$25.68
Flow Charge (per HCF)	
Group 1	\$4.94
Group 2	\$5.63
Group 3	\$7.24
Group 4	\$8.94
Group 5	\$7.94
Group 6	\$1.73
Churches	
Bimonthly Fixed Charge	\$25.68
Flow Charge (per HCF)	\$3.70
Schools	
Bimonthly Charge (per ADA)	\$201.28
Industrial	
Flow (per million gallons)	\$5,814.85
Chemical Oxygen Demand (per 1,000 lbs.)	\$224.18
Suspended Solids (per 1,000 lbs.)	\$484.93
Estuary Protection Charge	
All Customer Classes (% of WW Bill)	10%

Commercial customers are currently subject to the same Fixed Charge. However, Flow Charges vary based on commercial establishment type to account for differences in wastewater discharge flow and strength characteristics. Currently, the City classifies its non-residential users into six major groups. Churches, schools, and industrial customers are in their own separate groups. Group 1 consists of non-residential customers with low strength wastewater, such as laundromats, car washes, professional offices, retail establishments, gym, theaters, etc. Group 2 consists of customers with low-medium strength such as hotels and motels without dining facilities and commercial laundries. Group 3 consists of customers with medium strength such as hotels with dining facilities. Group 4 consists of medium-high strength customers, including groceries with garbage grinders and mortuaries. Group 5 consists of high strength customers, such as restaurants, bakeries and multi-use shopping centers. Group 6 consists of plant nurseries, which is considered low strength but typically uses a lot of water for Non-Residential Irrigation purposes. It is appropriate to consider nurseries, churches, and schools as separate customer classes since their water usage and wastewater generation differs greatly from other non-residential customers. Raftelis finds that

⁶¹ Single family residential wastewater customers are currently charged based on average winter water usage subject to a cap of 30 HCF per bimonthly billing period, or 15 HCF per month.

⁶² Multiple family residential wastewater customers are currently charged based on average winter water usage subject to a cap of 24 HCF per bimonthly billing period per dwelling unit, or 12 HCF per month.

the existing non-residential customer classification is consistent with industry standards and publicly available wastewater strength data; thus, Raftelis is not proposing any changes to the classifications. **Table 5-2** defines the six commercial groups by establishment type.

Table 5-2: Current Wastewater Commercial Customer Classification

Commercial Customer Classification	Types of Establishments
Group 1	Laundromats, Car Wash, Professional Offices, Convalescent Homes, Wholesale Establishments, Offices, Retail Establishments, Public Buildings, Barber & Beauty Shops, Gas Stations & Garages, Bars without Dining Facilities, Theaters, Gyms, Hospitals, Grocery Stores without Garbage Grinders
Group 2	Hotels & Motels w/o Dining Facilities, Commercial Laundries
Group 3	Hotels with Dining Facilities
Group 4	Mortuaries, Grocery Stores with Garbage Grinders
Group 5	Bakeries, Restaurants, Multi-Use Shopping Centers
Group 6	Plant Nurseries

5.1.2.WASTEWATER ENTERPRISE FINANCIAL ASSUMPTIONS

Inflationary assumptions shown in **Table 5-3** are used to escalate projected non-rate revenues and operations and maintenance (O&M) expenses beyond FY 2020-21. For O&M expenses, the general inflation rate is consistent with long-term changes in the Consumer Price Index (CPI). Salary and benefit inflationary increases were provided by Ventura Water and Finance staff, as wastewater utility personnel cost increases are typically agency-specific. All other O&M expense inflationary assumptions were developed by Raftelis based on professional judgement. The capital inflation factor is used to adjust uninflated capital project cost estimates provided to Raftelis by Ventura Water staff. All inflationary assumptions are consistent with inflationary assumptions used in the water rate study.

Table 5-3: Wastewater Enterprise Inflationary Assumptions

Inflationary Categories	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Non-Rate Revenues					
Miscellaneous	0.00%	0.00%	0.00%	0.00%	0.00%
Expenses					
General	3.00%	3.00%	3.00%	3.00%	3.00%
Salaries	5.38%	3.87%	3.53%	3.53%	1.08%
Benefits	5.38%	3.87%	3.53%	3.53%	1.08%
Utilities	5.00%	5.00%	5.00%	5.00%	5.00%
Chemicals	5.00%	5.00%	5.00%	5.00%	5.00%
Capital	4.00%	4.00%	4.00%	4.00%	4.00%

Additional financial assumptions relating to interest earnings are shown in **Table 5-4**. Interest earnings on cash reserves are projected assuming a one percent annual interest rate.

Table 5-4: Additional Wastewater Enterprise Financial Assumptions

Description	Value
Interest Earnings	
Annual Interest Rate	1.0%

5.1.3.PROJECTED WASTEWATER BILLING UNITS OF SERVICE

Wastewater connection growth projections are necessary to estimate wastewater rate revenues over the study period. Ventura Water staff provided Raftelis with the number of billing units by customer class for FY 2018-19. Raftelis then applied a 0.54% annual account growth rate⁶³ to all billing units to develop projections over the study period (see **Table 5-5**). No additional demand factor was applied to billed wastewater flows to ensure sufficiently conservative rate revenue projections and to maintain consistency with water demand projections. All billing units shown below are based on the current wastewater rate structure.

Table 5-5: Projected Wastewater Billing Units Under Existing Rate Structure

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Projected Annual Growth	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%
Fixed Charge Billing Units						
Single Family Residential (# of connections)	21,680	21,797	21,915	22,033	22,152	22,272
Multiple Family Residential (# of dwelling units)	20,686	20,797	20,910	21,023	21,136	21,250
Commercial (# of connections)	1,814	1,824	1,834	1,844	1,854	1,864
Churches (# of connections)	59	59	60	60	60	61
Schools (# of ADAs)	282	284	285	287	288	290
Billed Wastewater Flows (HCF)						
Single Family Residential	1,778,075	1,753,808	1,775,477	1,774,171	1,784,408	1,788,898
Multiple Family Residential	1,260,388	1,267,194	1,274,037	1,280,916	1,287,833	1,294,788
Commercial Group 1	645,694	649,181	652,687	656,211	659,755	663,317
Commercial Group 2	58,536	58,852	59,170	59,490	59,811	60,134
Commercial Group 3	42,020	42,247	42,475	42,705	42,935	43,167
Commercial Group 4	18,241	18,340	18,439	18,539	18,639	18,739
Commercial Group 5	196,453	197,513	198,580	199,652	200,730	201,814
Commercial Group 6	0	0	0	0	0	0
Churches	14,554	14,633	14,712	14,791	14,871	14,951
Industrial Billing Units						
Flow (million gallons)	31.90	32.08	32.25	32.42	32.60	32.78
Chemical Oxygen Demand (1,000 lbs.)	171.81	172.74	173.67	174.61	175.55	176.50
Suspended Solids (1,000 lbs.)	82.98	83.43	83.88	84.33	84.78	85.24
Reclaimed Water Use (HCF)						
All Reclaimed Customers	258,036	259,430	260,831	262,239	263,655	265,079

5.2. Wastewater Financial Plan

Section 5.2 details the development of a proposed Wastewater Enterprise financial plan for Ventura Water over the study period. The following subsections include estimates and projections of annual revenues, O&M expenses, debt service payments, capital expenditures, and reserve funding through FY 2025-26. The overall purpose of the

⁶³ Consistent with water connection growth assumptions from water rate study. Assumptions are from Ventura Water's 2020 Comprehensive Water Resources Report. The growth rate is provided to Ventura Water staff by Planning staff and is based on the Department of Finance historical data for population.

financial plan is to determine annual wastewater rate revenues required to achieve sufficient cash flow, maintain adequate reserves, and meet debt coverage requirements.

5.2.1.WASTEWATER ENTERPRISE REVENUE UNDER CURRENT RATES

The Wastewater Enterprise’s revenue sources consist of wastewater rates, connection fees, interest earnings on cash reserves, and other non-rate revenues. The rate revenue projections shown in this section assume that current FY 2020-21 wastewater rates are effective throughout the study period, and therefore represent estimated revenues in the absence of any wastewater rate increases. This status quo scenario provides a baseline from which Raftelis evaluated the need for revenue adjustments (i.e. gross rate revenue increases).

Calculated Wastewater Rate Revenues

Raftelis projected annual wastewater rate revenues over the study period based on current FY 2020-21 water rates (from **Table 5-2**) and projected number of billing units (from **Table 5-5**). **Table 4-8** shows projected wastewater rate revenues under current rates over the study period, calculated as follows:

$$\text{Fixed Charge Revenue} = [\text{FY 2020-21 bimonthly charge}] \times [\text{Number of connections or dwelling units}] \times [6 \text{ Bills per year}]$$

$$\text{Variable Rate Revenue} = [\text{FY 2020-21 unit rate}] \times [\text{Number of billing units}]$$

Table 5-6: Projected Rate Revenues under Current Wastewater Rates

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Fixed Charges						
Single Family Residential	\$3,340,495	\$3,358,534	\$3,376,670	\$3,394,904	\$3,413,236	\$3,431,668
Multiple Family Residential	\$2,359,400	\$2,372,141	\$2,384,951	\$2,397,829	\$2,410,778	\$2,423,796
Commercial	\$279,517	\$281,026	\$282,544	\$284,069	\$285,603	\$287,146
Churches	\$9,111	\$9,160	\$9,210	\$9,260	\$9,310	\$9,360
Schools	\$340,592	\$342,431	\$344,280	\$346,139	\$348,008	\$349,887
Subtotal	\$6,329,115	\$6,363,292	\$6,397,654	\$6,432,201	\$6,466,935	\$6,501,857
Flow Charges						
Single Family Residential	\$6,685,561	\$6,594,317	\$6,675,794	\$6,670,885	\$6,709,375	\$6,726,257
Multiple Family Residential	\$4,739,058	\$4,764,649	\$4,790,378	\$4,816,246	\$4,842,254	\$4,868,402
Commercial Group 1	\$3,189,730	\$3,206,955	\$3,224,273	\$3,241,684	\$3,259,189	\$3,276,788
Commercial Group 2	\$329,558	\$331,338	\$333,127	\$334,926	\$336,735	\$338,553
Commercial Group 3	\$304,226	\$305,869	\$307,521	\$309,181	\$310,851	\$312,529
Commercial Group 4	\$163,078	\$163,959	\$164,844	\$165,734	\$166,629	\$167,529
Commercial Group 5	\$1,559,834	\$1,568,257	\$1,576,726	\$1,585,240	\$1,593,800	\$1,602,407
Commercial Group 6	\$0	\$0	\$0	\$0	\$0	\$0
Churches	\$53,849	\$54,140	\$54,433	\$54,727	\$55,022	\$55,319
Subtotal	\$17,024,895	\$16,989,483	\$17,127,095	\$17,178,622	\$17,273,855	\$17,347,784
Industrial Charges						
Flow	\$185,521	\$186,522	\$187,530	\$188,542	\$189,560	\$190,584
Chemical Oxygen Demand	\$38,516	\$38,724	\$38,933	\$39,143	\$39,355	\$39,567
Suspended Solids	\$40,239	\$40,456	\$40,674	\$40,894	\$41,115	\$41,337
Subtotal	\$264,275	\$265,702	\$267,137	\$268,579	\$270,030	\$271,488
Reclaimed Water Sales						
All Reclaimed Customers	\$245,135	\$246,458	\$247,789	\$249,127	\$250,472	\$251,825
Estuary Protection Charges						
All Customers	\$2,386,342	\$2,386,494	\$2,403,967	\$2,412,853	\$2,426,129	\$2,437,295
Total	\$26,249,761	\$26,251,429	\$26,443,642	\$26,541,383	\$26,687,422	\$26,810,249

Other Wastewater Enterprise Revenues

Table 5-7 shows all other Wastewater Enterprise revenues. All FY 2020-21 other revenues are based on the City's FY 2020-21 budget and escalated annually by the miscellaneous inflation rate (from Table 5-3), except where noted otherwise. Interest revenue is estimated in the financial plan model beginning in FY 2020-21 based on projected fund balances and the assumed interest rate (from Table 5-4).

Table 5-7: Other Wastewater Enterprise Revenues

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Wastewater Operating Fund (51) – Other Revenues						
Interest Earnings	\$179,931	\$193,366	\$228,899	\$273,806	\$326,499	\$372,591
Other Miscellaneous Revenue	\$531,700	\$531,700	\$531,700	\$531,700	\$531,700	\$531,700
Subtotal	\$711,631	\$725,066	\$760,599	\$805,506	\$858,199	\$904,291
Wastewater Capital Fund (71) – Other Revenues						
Wastewater Connection Fees ⁶⁴	\$908,417	\$908,417	\$908,417	\$908,417	\$908,417	\$908,417
Interest Earnings	\$255,019	\$76,290	\$0	\$0	\$0	\$0
Subtotal	\$1,163,436	\$984,707	\$908,417	\$908,417	\$908,417	\$908,417
Estuary Protection Fund (75) – Other Revenues						
Interest Earnings	\$135,712	\$149,001	\$150,491	\$151,996	\$153,516	\$155,051
Subtotal	\$135,712	\$149,001	\$150,491	\$151,996	\$153,516	\$155,051
Total	\$2,010,780	\$1,858,775	\$1,819,507	\$1,865,919	\$1,920,132	\$1,967,760

Summary of Projected Wastewater Enterprise Revenues

Table 5-8 shows a summary of all projected Wastewater Enterprise revenues under current rates over the study period. This includes all projected revenues shown in Table 5-6 and Table 5-7. This revenue summary represents expected revenues in the absence of any rate increase over the study period.

Table 5-8: Summary of Projected Wastewater Enterprise Revenues Under Current Rates

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Wastewater Operating Fund (51)						
Wastewater Rates	\$23,863,419	\$23,864,936	\$24,039,675	\$24,128,530	\$24,261,292	\$24,372,954
Interest Earnings	\$179,931	\$193,366	\$228,899	\$273,806	\$326,499	\$372,591
Other Miscellaneous Revenue	\$531,700	\$531,700	\$531,700	\$531,700	\$531,700	\$531,700
Subtotal	\$24,575,050	\$24,590,002	\$24,800,274	\$24,934,036	\$25,119,491	\$25,277,245
Wastewater Capital Fund (71)						
Wastewater Connection Fees	\$908,417	\$908,417	\$908,417	\$908,417	\$908,417	\$908,417
Interest Earnings	\$255,019	\$76,290	\$0	\$0	\$0	\$0
Subtotal	\$1,163,436	\$984,707	\$908,417	\$908,417	\$908,417	\$908,417
Estuary Protection Fund (75)						
Estuary Protection Charges	\$2,386,342	\$2,386,494	\$2,403,967	\$2,412,853	\$2,426,129	\$2,437,295
Interest Earnings	\$135,712	\$149,001	\$150,491	\$151,996	\$153,516	\$155,051
Subtotal	\$2,522,054	\$2,535,495	\$2,554,459	\$2,564,849	\$2,579,645	\$2,592,347
Total	\$28,260,541	\$28,110,204	\$28,263,150	\$28,407,303	\$28,607,554	\$28,778,009

⁶⁴ Wastewater connection fees equal the annual average of actuals over the last four fiscal years through FY 2019-20.

5.2.2.WASTEWATER ENTERPRISE OPERATIONS & MAINTENANCE EXPENSES

Table 5-9 shows a summary of all Wastewater Enterprise O&M expenses over the study period. O&M expenditures include the cost of operating and maintaining wastewater collection, treatment, and disposal facilities. O&M expenses also include the costs of providing technical services such as laboratory services and other administrative costs of the wastewater system. These costs are a normal obligation of the system, and are met from operating revenues as they are incurred. It is projected that O&M expenses will increase by approximately 4.75 percent per year on average over the study period. All five-year O&M expenses were provided by Ventura Water and Finance staff in current dollars and then adjusted for inflation by Raftelis (based on inflationary assumptions shown in **Table 5-3**). Additional Wastewater Enterprise O&M expenses associated with VenturaWaterPure are shown in detail in **Appendix A**. Note the approximate \$2.5M increase in additional O&M in FY 20225-26 when VenturaWaterPure is anticipated to begin operations.

Table 5-9: Projected Wastewater Enterprise O&M Expenses

O&M Expenses	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
Rev Mgmt - Wastewater (22051)	\$500,000	\$515,000	\$530,450	\$546,364	\$562,754	\$579,637
Wastewater Operations (64101)	\$8,875,521	\$6,784,811	\$7,017,603	\$7,096,130	\$7,257,484	\$7,281,539
Wastewater Maintenance (64111)	\$5,569,530	\$6,393,103	\$6,347,698	\$6,849,984	\$7,320,589	\$7,809,385
Wastewater Environmental compliance (64115)	\$773,403	\$994,639	\$958,476	\$1,098,807	\$909,041	\$927,399
Wastewater Treatment (64121)	\$5,552,243	\$5,917,508	\$6,281,542	\$6,420,955	\$6,688,063	\$6,902,691
Wastewater Estuary Phase III (64125)	\$300,000	\$618,000	\$636,540	\$655,636	\$675,305	\$695,564
Wastewater Laboratory (64131)	\$1,708,446	\$1,873,426	\$1,939,960	\$2,163,154	\$2,084,734	\$2,297,487
VenturaWaterPure O&M	\$36,002	\$195,402	\$202,627	\$209,571	\$216,749	\$2,767,943
Total O&M Expenses	\$23,315,145	\$23,291,889	\$23,914,896	\$25,040,600	\$25,714,720	\$29,261,646
<i>% Change</i>		-0.10%	2.67%	4.71%	2.69%	13.79%

5.2.3.WASTEWATER ENTERPRISE DEBT

Table 5-10 shows the Wastewater Enterprise’s projected debt service obligations over the study period. Existing debt service consists of the City’s 2020 Wastewater Refunding Bonds, which were recently issued to refinance the City’s 2012 Wastewater Revenue Bonds and 2014 Wastewater Revenue Bonds. This refinancing of existing bonds is projected to reduce the Wastewater Enterprise’s existing debt service payments by approximately \$300K per year over the study period. Proposed Wastewater Enterprise debt service associated with VenturaWaterPure is also shown (see **Appendix A** for details). Note that proposed debt service for VenturaWaterPure represents preliminary projections based on the best information available at the time this study.

Table 5-10: Wastewater Enterprise Debt Service

Debt Service	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Existing Debt Service						
2020 Wastewater Revenue Refunding Bonds - Series A	\$1,537,437	\$2,200,792	\$2,197,979	\$2,199,107	\$2,202,363	\$2,199,464
Subtotal	\$1,537,437	\$2,200,792	\$2,197,979	\$2,199,107	\$2,202,363	\$2,199,464
Proposed Debt Service for VenturaWaterPure						
WIFIA Loan	\$0	\$80,899	\$195,776	\$314,697	\$838,096	\$838,096
SRF Loan	\$0	\$0	\$0	\$0	\$66,322	\$529,958
Revenue Bond	\$0	\$0	\$0	\$0	\$0	\$417,597
Subtotal	\$0	\$80,899	\$195,776	\$314,697	\$904,418	\$1,785,651
Total	\$1,537,437	\$2,281,691	\$2,393,755	\$2,513,805	\$3,106,780	\$3,985,115

Table 5-11 shows existing debt proceeds available to fund capital expenditures (excluding VenturaWaterPure) and proposed debt proceeds to fund VenturaWaterPure Projects (see **Appendix A** for details). Amounts are shown in the year the proceeds are assumed to be spent to fund capital projects.

Table 5-11: Wastewater Enterprise – Use of Debt Proceeds

Use of Debt Proceeds	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Existing Debt Proceeds	\$2,037,251	\$2,037,251	\$0	\$0	\$0	\$0
Proposed Debt Proceeds for VenturaWaterPure	\$0	\$4,228,000	\$5,760,000	\$5,760,000	\$29,472,885	\$29,472,885
Total	\$2,037,251	\$6,265,251	\$5,760,000	\$5,760,000	\$29,472,885	\$29,472,885

5.2.4.WASTEWATER ENTERPRISE CAPITAL IMPROVEMENT PLAN

Table 5-12 shows Ventura Water’s planned capital improvement plan (CIP) for the Wastewater Enterprise excluding VenturaWaterPure, amounting to approximately \$8.4M per year on average over the study period. Significant CIP expenditures exclusive of VenturaWaterPure are anticipated to continue over the next ten years, highlighting the need to maintain adequate reserves to fund substantial CIP projects beyond FY 2025-26.

Table 5-13 shows the Wastewater Enterprise’s share of VenturaWaterPure Program CIP project costs, amounting to approximately \$14.5M per year on average over the study period. VenturaWaterPure capital projects include injection/extraction wells, pump stations, a new advanced water purification facility, conveyance pipelines, ocean outfall, wetlands restoration, and land acquisition to site the new treatment plant (see **Appendix A** for details).

Table 5-12: Wastewater Enterprise Capital Improvement Plan Excluding VenturaWaterPure

CIP #	Project Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
96947	Harbor Force Main - San Pedro to Figueroa	\$450,000	\$0	\$0	\$0	\$0	\$0
96928	Wastewater Plant - Aeration Blowers	\$4,700,000	\$4,524,000	\$0	\$0	\$0	\$0
96922	Transfer Station - Seaside Land Acquisition	\$100,000	\$1,560,000	\$0	\$0	\$0	\$0
96918	Wastewater Plant - Digester Improvement	\$5,499,745	\$0	\$0	\$0	\$0	\$0
96952	Sewerlines Repair/Replacement - South Victoria Avenue Area	\$0	\$520,000	\$540,800	\$2,924,646	\$3,041,632	\$0
96874	Wastewater Plant - Tertiary Filter Replacement	\$1,200,000	\$1,248,000	\$12,979,200	\$13,498,368	\$0	\$0
74103	Upgrade of Co-Generation System	\$0	\$520,000	\$2,163,200	\$2,812,160	\$0	\$0
74090	Wastewater Plant - Secondary Clarifier Improvements	\$0	\$0	\$108,160	\$2,137,242	\$2,222,731	\$0
74098	Wastewater Plant - Increase of Anoxic Tank Capacity	\$0	\$0	\$0	\$0	\$0	\$608,326
	Total	\$11,949,745	\$8,372,000	\$15,791,360	\$21,372,416	\$5,264,364	\$608,326

Table 5-13: Wastewater Enterprise Capital Improvement Plan - VenturaWaterPure

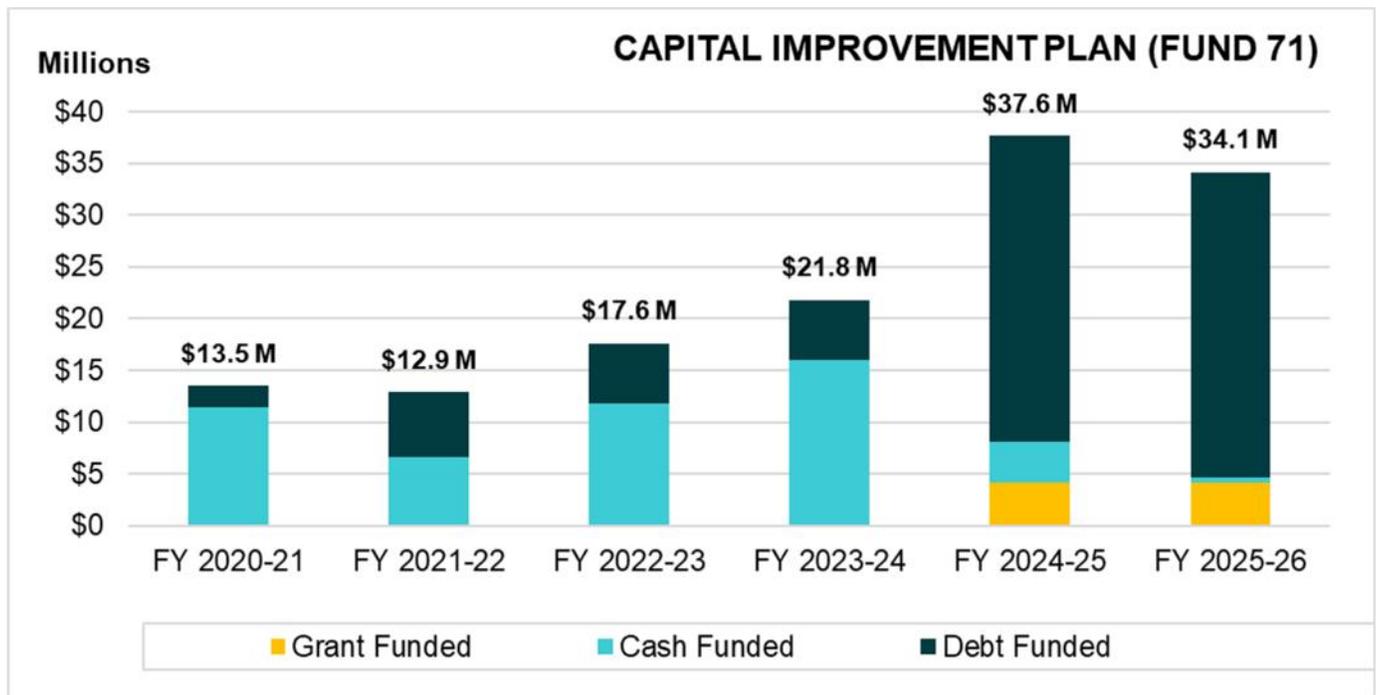
CIP #	Project Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
97934	Injection/Extraction Wells	\$0	\$0	\$0	\$0	\$0	\$0
73122	Pump Stations	\$37,500	\$250,000	\$350,000	\$350,000	\$1,700,000	\$1,700,000
96945	Advanced Water Purification Facility	\$725,000	\$2,500,000	\$3,500,000	\$3,500,000	\$21,000,000	\$21,000,000
96940	Pipelines	\$313,500	\$528,000	\$660,000	\$660,000	\$3,960,000	\$3,960,000
96939	Wetlands Improvements	\$0	\$0	\$0	\$0	\$0	\$0
96938	Outfall	\$375,000	\$950,000	\$1,250,000	\$1,250,000	\$7,000,000	\$7,000,000
96935	Land	\$100,000	\$2,367,500	\$0	\$0	\$0	\$0
	Total	\$1,551,000	\$6,595,500	\$5,760,000	\$5,760,000	\$33,660,000	\$33,660,000

Table 5-14 shows the assumed funding sources for Wastewater Enterprise CIP projects over the study period. Estimated grant funding for the Wastewater Enterprise’s share of VenturaWaterPure CIP is included in FY 2024-25 and FY 2025-26 (see **Appendix A** for details). Existing debt proceeds (from **Table 5-11**) are assumed to fund CIP projects exclusive of VenturaWaterPure in FY 2020-21 and FY 2021-22. Proposed debt proceeds (from **Table 5-11**) are assumed to fund most of the Wastewater Enterprise’s VenturaWaterPure Program CIP projects over the next five years. All remaining CIP not funded by grants or debt is assumed to be funded by Wastewater Enterprise cash reserves generated from rates (i.e. pay-as-you-go). **Figure 5-1** shows a summary of total Wastewater Enterprise CIP expenditures (including VenturaWaterPure) by funding source over the study period.

Table 5-14: Wastewater Enterprise Capital Improvement Plan Proposed Funding

Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Capital Improvement Plan Excluding VenturaWaterPure						
Grant Funded	\$0	\$0	\$0	\$0	\$0	\$0
Debt Funded	\$2,037,251	\$2,037,251	\$0	\$0	\$0	\$0
Pay-as-you-go	\$9,912,494	\$4,241,749	\$11,843,520	\$16,029,312	\$3,948,273	\$456,245
Subtotal	\$11,949,745	\$6,279,000	\$11,843,520	\$16,029,312	\$3,948,273	\$456,245
Capital Improvement Plan - VenturaWaterPure						
Grant Funded	\$0	\$0	\$0	\$0	\$4,187,115	\$4,187,115
Debt Funded	\$0	\$4,228,000	\$5,760,000	\$5,760,000	\$29,472,885	\$29,472,885
Pay-as-you-go	\$1,551,000	\$2,367,500	\$0	\$0	\$0	\$0
Subtotal	\$1,551,000	\$6,595,500	\$5,760,000	\$5,760,000	\$33,660,000	\$33,660,000
Total	\$13,500,745	\$12,874,500	\$17,603,520	\$21,789,312	\$37,608,273	\$34,116,245

Figure 5-1: Wastewater Enterprise Capital Improvement Plan



5.2.5.WASTEWATER ENTERPRISE FINANCIAL POLICIES

Required Debt Coverage

The Wastewater Enterprise is required to meet debt service coverage requirements on its outstanding wastewater revenue bonds. The required debt coverage ratio is 1.20, meaning that the Wastewater Enterprise’s net operating revenues (i.e. total revenues less operating expenses) must amount to at least 1.20 times the amount of annual debt service. Failure to meet debt service coverage results in a technical default, which without foreseeable remedial action such as implementing rate increases, could result in a downgrade of credit rating, higher costs in future debt issuance, or even denial of credit.

Reserve Targets

Adequate cash reserves are required to meet operating, capital, and debt service requirements. No changes are proposed to Ventura Water’s existing wastewater reserve policies. Operating reserves provide funds to meet ongoing cash flow requirements related to operating expenses. The current operating reserve target is equal to 25 percent of annual O&M expenses, or three months of working capital. Capital reserves are maintained to provide available funds for CIP projects. Ventura Water’s current capital reserve target is equal to the ten-year annual average of CIP project costs (R&R projects only). **Table 5-15** summarizes the Wastewater Enterprise’s key financial policies relevant to this rate study. **Table 5-16** shows projected operating and capital reserve targets over the study period based on the policies outlined above.

Table 5-15: Wastewater Enterprise Financial Policies

Financial Policy	Target/Requirement
Debt Coverage	
Target Debt Coverage Ratio	1.20
Reserve Targets	
Operating Reserve Target	25% of annual O&M expenses
Capital Reserve Target	Annual average capital expenditures (R&R only)

Table 5-16: Projected Wastewater Enterprise Reserve Targets

Reserve Target	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Operating Reserve ⁶⁵	\$5,828,786	\$5,822,972	\$5,978,724	\$6,260,150	\$6,428,680	\$7,315,411
Capital Reserve ⁶⁶	\$8,868,579	\$8,868,579	\$8,868,579	\$8,868,579	\$8,868,579	\$8,868,579
Total	\$14,697,365	\$14,691,551	\$14,847,303	\$15,128,729	\$15,297,259	\$16,183,990

5.2.6.STATUS QUO WASTEWATER FINANCIAL PLAN

To evaluate the need for revenue adjustments (i.e. increases to gross rate revenues), Raftelis first developed a status quo financial plan. The status quo financial plan assumes that current FY 2020-21 rates remain unchanged over the study period. **Table 5-17** combines projected Fund 51 revenues (from **Table 5-8**), O&M expenses (from **Table 5-9**), and debt service (from **Table 5-10**) to generate operating cash flow projections under the status quo. In the absence

⁶⁵ Equal to 25% of annual projected O&M expenses (from **Table 5-9**).

⁶⁶ Equal to annual average projected Wastewater Enterprise CIP expenditures through FY 2029-30 (excluding VenturaWaterPure CIP projects).

of any revenue adjustments, the Wastewater Operating Fund (Fund 51) will fail to generate sufficient revenue to recover O&M expenses and debt service over the study period.

Table 5-17: Wastewater Operating Cash Flow (Fund 51) – Status Quo Financial Plan

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Revenue						
2	WW Rates (excl. Estuary Protection Charges)	\$23,863,419	\$23,864,936	\$24,039,675	\$24,128,530	\$24,261,292	\$24,372,954
3							
4	Revenue Adjustments						
5	Fiscal Year	Revenue Adjustment					
6	FY 2020-21	0.00%	\$0	\$0	\$0	\$0	\$0
7	FY 2021-22	0.00%		\$0	\$0	\$0	\$0
8	FY 2022-23	0.00%			\$0	\$0	\$0
9	FY 2023-24	0.00%				\$0	\$0
10	FY 2024-25	0.00%					\$0
11	FY 2025-26	0.00%					\$0
12	Total Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
13							
14	Revenue Summary						
15	WW Rates (incl. Revenue Adjustments)	\$23,863,419	\$23,864,936	\$24,039,675	\$24,128,530	\$24,261,292	\$24,372,954
16	Other Fund 51 Revenue ⁶⁷	\$711,631	\$705,258	\$692,423	\$670,873	\$637,651	\$576,858
17	Total Revenue	\$24,575,050	\$24,570,194	\$24,732,098	\$24,799,403	\$24,898,943	\$24,949,812
18							
19	O&M Expenses	\$23,315,145	\$23,291,889	\$23,914,896	\$25,040,600	\$25,714,720	\$29,261,646
20							
21	Debt Service	\$1,537,437	\$2,281,691	\$2,393,755	\$2,513,805	\$3,106,780	\$3,985,115
22							
23	Net Operating Cash Flow⁶⁸	(\$277,531)	(\$1,003,386)	(\$1,576,553)	(\$2,755,001)	(\$3,922,557)	(\$8,296,949)

Table 5-18 shows projected reserve balances and debt coverage under the status quo financial plan for the entire Wastewater Enterprise, including the Wastewater Operating Fund (Fund 51), Wastewater Capital Fund (Fund 72), and Estuary Protection Fund (Fund 75). Sources of funds include revenues (from **Table 5-8**) as well as grants and debt proceeds (from **Table 5-14**). Use of funds include O&M expenses (from **Table 5-9**), debt service (from **Table 5-10**), and CIP expenditures (from **Table 5-14**). The FY 2020-21 beginning balance reflects actual Wastewater Enterprise reserve balances as of July 1, 2020. All ending balance and debt coverage figures are projected values. Target reserve balances shown are from **Table 5-16**.

Under the status-quo financial plan, reserves are projected to fall below target by the end of FY 2023-24. Debt coverage is projected to fall below the required ratio beginning in FY 2024-25, in part due to significant increases in debt service for VenturaWaterPure. The status quo financial plan is insufficient to meet the Wastewater Enterprise's

⁶⁷ Status quo "other revenue" is less than what is shown in **Table 5-8** (which reflects the proposed financial plan) to account for reduced interest earnings due to depletion of interest-bearing reserves. Interest earnings under the status quo and proposed financial plan scenarios are calculated by averaging the beginning and ending reserve balance in each year and then multiplying by the assumed interest rate.

⁶⁸ Equal to [Line 17 – Line 19 – Line 21]

financial needs over the study period. This demonstrates a clear need for revenue adjustments over the study period to increase rate revenues and ensure financial sustainability.

Table 5-18: Status Quo Wastewater Financial Plan Pro Forma (Funds 51, 71, & 75)

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Beginning Balance	\$51,379,367	\$43,323,832	\$39,243,331	\$29,322,138	\$14,071,540	\$9,774,021
2							
3	Source of Funds						
4	WW Rates (including Revenue Adjustments)	\$23,863,419	\$23,864,936	\$24,039,675	\$24,128,530	\$24,261,292	\$24,372,954
5	Estuary Protection Charges	\$2,386,342	\$2,386,494	\$2,403,967	\$2,412,853	\$2,426,129	\$2,437,295
6	Other Fund 51 Revenue ⁶⁹	\$711,631	\$717,191	\$728,427	\$731,321	\$722,899	\$687,275
7	Other Fund 71 Revenue	\$1,163,436	\$984,707	\$908,417	\$908,417	\$908,417	\$908,417
8	Other Fund 75 Revenue	\$135,712	\$149,001	\$150,491	\$151,996	\$153,516	\$155,051
9	Grants	\$0	\$0	\$0	\$0	\$4,187,115	\$4,187,115
10	Use of Debt Proceeds	\$2,037,251	\$6,265,251	\$5,760,000	\$5,760,000	\$29,472,885	\$29,472,885
11	Total Source of Funds	\$30,297,792	\$34,367,579	\$33,990,978	\$34,093,118	\$62,132,254	\$62,220,993
12							
13	Use of Funds						
14	O&M Expenses	\$23,315,145	\$23,291,889	\$23,914,896	\$25,040,600	\$25,714,720	\$29,261,646
15	Debt Service	\$1,537,437	\$2,281,691	\$2,393,755	\$2,513,805	\$3,106,780	\$3,985,115
16	Capital Improvement Plan Expenditures	\$13,500,745	\$12,874,500	\$17,603,520	\$21,789,312	\$37,608,273	\$34,116,245
17	Total Use of Funds	\$38,353,327	\$38,448,080	\$43,912,171	\$49,343,716	\$66,429,773	\$67,363,005
18							
19	Ending Balance⁷⁰	\$43,323,832	\$39,243,331	\$29,322,138	\$14,071,540	\$9,774,021	\$4,632,008
20	<i>Target Balance</i>	<i>\$14,697,365</i>	<i>\$14,691,551</i>	<i>\$14,847,303</i>	<i>\$15,128,729</i>	<i>\$15,297,259</i>	<i>\$16,183,990</i>
21							
22	Debt Coverage						
23	Net Revenue ⁷¹	\$4,945,397	\$4,810,440	\$4,316,082	\$3,292,518	\$2,757,534	(\$700,653)
24	Debt Service	\$1,537,437	\$2,281,691	\$2,393,755	\$2,513,805	\$3,106,780	\$3,985,115
25	Projected Debt Coverage ⁷²	3.22	2.11	1.80	1.31	0.89	-0.18
26	<i>Required Debt Coverage</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>

5.2.7. PROPOSED WASTEWATER FINANCIAL PLAN

The Wastewater Enterprise must increase its revenues from wastewater rates over the study period to adequately fund its operating and capital expenditures, meet required debt coverage, and maintain sufficient reserve funding. Raftelis worked closely with Ventura Water and Finance staff to identify financial plan options for the Water Commission’s consideration. The selected option of proposed annual revenue adjustments are shown in **Table 5-19**. Revenue adjustments represent annual percent increases in total rate revenue relative to rate revenue generated by the prior year’s wastewater rates.

⁶⁹ Status quo “other revenue” is less than what is shown in **Table 5-8** (which reflects the proposed financial plan) to account for reduced interest earnings due to depletion of interest-bearing reserves. Interest earnings under the status quo and proposed financial plan scenarios are calculated by averaging the beginning and ending reserve balance in each year and then multiplying by the assumed interest rate.

⁷⁰ Equal to [Line 1 + Line 11 – Line 17]

⁷¹ Equal to [(Sum of Lines 4-8) – Line 14]

⁷² Equal to [Line 23 ÷ Line 24]

Table 5-19: Proposed Wastewater Revenue Adjustments

Description	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Effective Date	July 1, 2021	July 1, 2022	July 1, 2023	July 1, 2024	July 1, 2025
Revenue Adjustment	6.0%	6.0%	6.0%	6.0%	6.0%

Table 5-20 combines projected Fund 51 revenues (from **Table 5-8**), O&M expenses (from **Table 5-9**), and debt service (from **Table 5-10**) to generate operating cash flow projections under the proposed financial plan. By implementing the proposed revenue adjustments, we project that the Wastewater Operating Fund (Fund 51) will maintain sufficient operating cash flow through the end of the study period.

Table 5-20: Wastewater Operating Cash Flow (Fund 51) – Proposed Financial Plan

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Revenue						
2	WW Rates ⁷³	\$23,863,419	\$26,251,429	\$26,443,642	\$26,541,383	\$26,687,422	\$26,810,249
3							
4	Revenue Adjustments						
5	Fiscal Year	Revenue Adjustment					
6	FY 2020-21	0.00%	\$0	\$0	\$0	\$0	\$0
7	FY 2021-22	0.00%		\$1,575,086	\$1,586,619	\$1,592,483	\$1,601,245
8	FY 2022-23	0.00%			\$1,681,816	\$1,688,032	\$1,697,320
9	FY 2023-24	0.00%				\$1,789,314	\$1,799,159
10	FY 2024-25	0.00%					\$1,907,109
11	FY 2025-26	0.00%					\$2,030,839
12	Total Adjustments	\$0	\$1,575,086	\$3,268,434	\$5,069,829	\$7,004,833	\$9,067,912
13							
14	Revenue Summary						
15	WW Rates (incl. Revenue Adjustments)	\$23,863,419	\$27,826,515	\$29,712,077	\$31,611,212	\$33,692,255	\$35,878,161
16	Other Fund 51 Revenue	\$711,631	\$725,066	\$760,599	\$805,506	\$858,199	\$904,291
17	Total Revenue	\$24,575,050	\$28,551,581	\$30,472,675	\$32,416,718	\$34,550,454	\$36,782,453
18							
19	O&M Expenses	\$23,315,145	\$23,291,889	\$23,914,896	\$25,040,600	\$25,714,720	\$29,261,646
20							
21	Debt Service	\$1,537,437	\$2,281,691	\$2,393,755	\$2,513,805	\$3,106,780	\$3,985,115
22							
23	Net Operating Cash Flow⁷⁴	(\$277,531)	\$2,978,002	\$4,164,025	\$4,862,314	\$5,728,953	\$3,535,693

Table 5-21 shows projected reserve balances and debt coverage under the proposed financial plan for the entire Wastewater Enterprise, including the Wastewater Operating Fund (Fund 51), Wastewater Capital Fund (Fund 72), and Estuary Protection Fund (Fund 75). Sources of funds include revenues (from **Table 5-8**), revenue adjustments (from **Table 5-20**), and grants and debt proceeds (from **Table 5-14**). Use of funds include O&M expenses (from **Table 5-9**), debt service (from **Table 5-10**), and CIP expenditures (from **Table 5-14**). The FY 2020-21 beginning

⁷³ Includes Estuary Protection Charge revenue beginning in FY 2021-22. Beginning in FY 2021-22, the Estuary Protection Charge is proposed to be eliminated as a separate charge. Revenue currently recovered by the Estuary Protection Charge will be recovered by all other wastewater rates and charges.

⁷⁴ Equal to [Line 17 – Line 19 – Line 21]

balance reflects actual Wastewater Enterprise reserve balances as of July 1, 2020. All ending balance and debt coverage figures are projected values. Target reserve balances shown are from **Table 5-16**. Under the proposed financial plan, reserve balances and debt coverage are projected to achieve target policies in all years of the rate-setting period.

Table 5-21: Proposed Wastewater Financial Plan Pro Forma (Funds 51, 71, & 75)

Line	Description	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Beginning Balance	\$51,379,367	\$43,323,832	\$40,826,293	\$34,205,706	\$24,099,121	\$26,941,735
2							
3	Source of Funds						
4	WW Rates (including Revenue Adjustments)	\$23,863,419	\$27,826,515	\$29,712,077	\$31,611,212	\$33,692,255	\$35,878,161
5	Estuary Protection Charges	\$2,386,342	N/A	N/A	N/A	N/A	N/A
6	Other Fund 51 Revenue	\$711,631	\$725,066	\$760,599	\$805,506	\$858,199	\$904,291
7	Other Fund 71 Revenue	\$1,163,436	\$984,707	\$908,417	\$908,417	\$908,417	\$908,417
8	Other Fund 75 Revenue	\$135,712	\$149,001	\$150,491	\$151,996	\$153,516	\$155,051
9	Grants	\$0	\$0	\$0	\$0	\$4,187,115	\$4,187,115
10	Use of Debt Proceeds	\$2,037,251	\$6,265,251	\$5,760,000	\$5,760,000	\$29,472,885	\$29,472,885
11	Total Source of Funds	\$30,297,792	\$35,950,540	\$37,291,584	\$39,237,131	\$69,272,387	\$71,505,922
12							
13	Use of Funds						
14	O&M Expenses	\$23,315,145	\$23,291,889	\$23,914,896	\$25,040,600	\$25,714,720	\$29,261,646
15	Debt Service	\$1,537,437	\$2,281,691	\$2,393,755	\$2,513,805	\$3,106,780	\$3,985,115
16	Capital Improvement Plan Expenditures	\$13,500,745	\$12,874,500	\$17,603,520	\$21,789,312	\$37,608,273	\$34,116,245
17	Total Use of Funds	\$38,353,327	\$38,448,080	\$43,912,171	\$49,343,716	\$66,429,773	\$67,363,005
18							
19	Ending Balance⁷⁵	\$43,323,832	\$40,826,293	\$34,205,706	\$24,099,121	\$26,941,735	\$31,084,651
20	<i>Target Balance</i>	<i>\$14,697,365</i>	<i>\$14,691,551</i>	<i>\$14,847,303</i>	<i>\$15,128,729</i>	<i>\$15,297,259</i>	<i>\$16,183,990</i>
21							
22	Debt Coverage						
23	Net Revenue ⁷⁶	\$4,945,397	\$6,393,401	\$7,616,688	\$8,436,532	\$9,897,667	\$8,584,276
24	Debt Service	\$1,537,437	\$2,281,691	\$2,393,755	\$2,513,805	\$3,106,780	\$3,985,115
25	Projected Debt Coverage ⁷⁷	3.22	2.80	3.18	3.36	3.19	2.15
26	<i>Required Debt Coverage</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>	<i>1.20</i>

⁷⁵ Equal to [Line 1 + Line 11 – Line 17]

⁷⁶ Equal to [(Sum of Lines 4-8) – Line 14]

⁷⁷ Equal to [Line 23 ÷ Line 24]

Figure 5-2 shows projected debt coverage (blue line) relative to the debt coverage requirement (red line) over the study period. Fluctuations in debt coverage over the study period are largely due to assumed new debt service to finance VenturaWaterPure project costs. Debt coverage remains above the requirement throughout the study period.

Figure 5-2: Proposed Wastewater Financial Plan - Debt Coverage

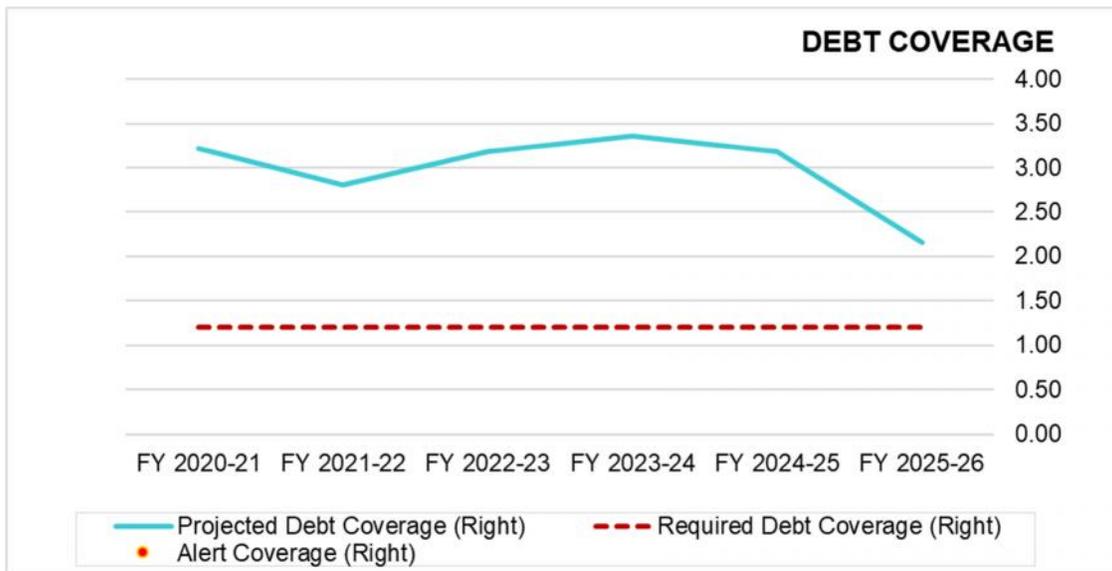


Figure 5-3 shows the Wastewater Enterprise’s projected ending balance under the proposed financial plan. The light blue bars indicate the ending balance. The total reserve target is represented by the red dashed line. The Wastewater Enterprise is projected to draw down its reserves through FY 2023-24 to fund substantial R&R CIP projects exclusive of VenturaWaterPure. By the end of the study period, the Wastewater Enterprise’s reserves are projected to remain above the target amount with the proposed rate increases. Maintaining reserves above the target amount is necessary as additional drawdown of reserves beyond FY 2025-26 is anticipated to fund substantial R&R CIP from FY 2026-27 through FY 2029-30 (see Appendix C for ten-year financial plan projections).

Figure 5-3: Proposed Wastewater Financial Plan – Projected Ending Balances

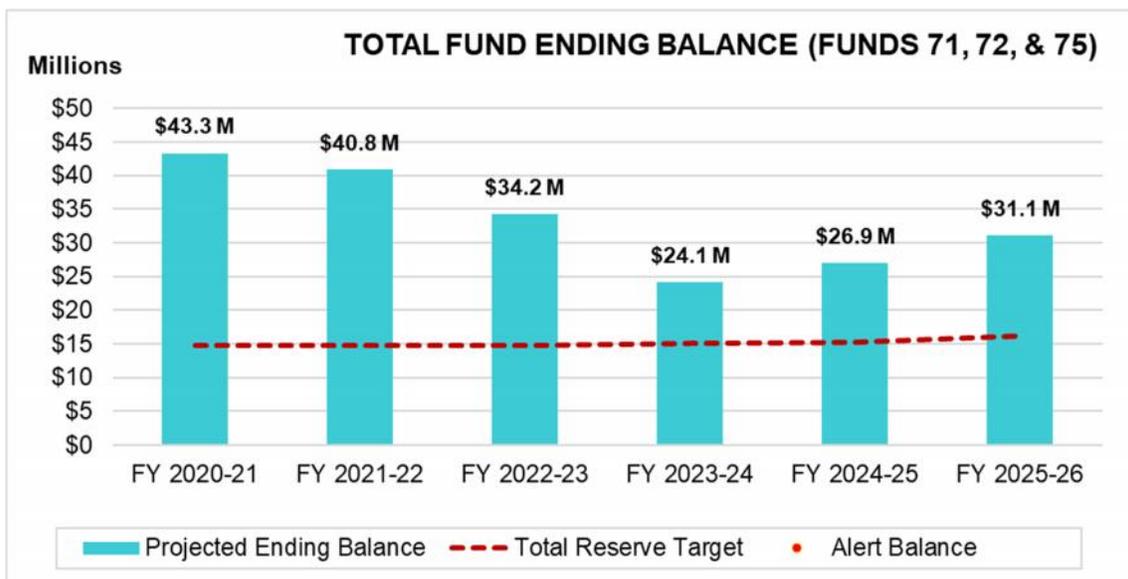
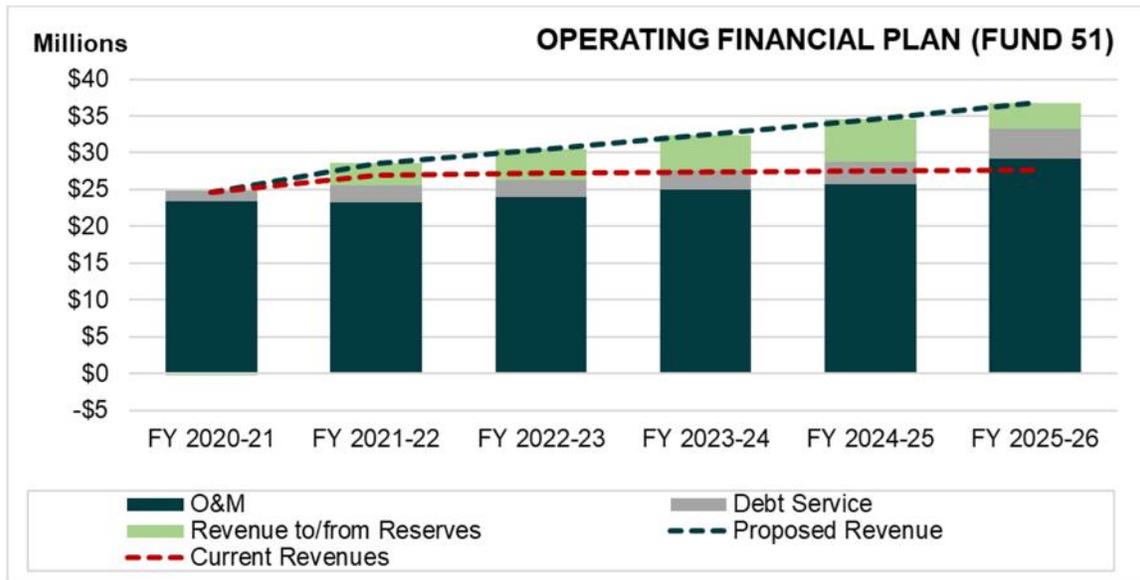


Figure 5-4 shows the proposed versus status quo operating financial plan. Revenues under the proposed financial plan and status quo financial plan are represented by the green and red dashed lines, respectively. Revenue requirements including O&M expenses, debt service, and reserve funding for CIP/other purposes are represented by the various stacked bars. Revenue adjustments are required to generate sufficient revenue to recover O&M expenses and debt service payments over the study period.

Figure 5-4: Proposed vs. Status Quo Wastewater Financial Plan



5.3. Wastewater Cost of Service Analysis

Section 5.3 details the cost of service (COS) analysis performed for the Wastewater Enterprise for FY 2020-21. The COS analysis allocates the overall rate revenue requirement to customer classes based on their proportion of use of and burden on the wastewater system. This provides the basis for the development of proposed wastewater rates through FY 2025-26. Note that reclaimed water cost allocations are included in this section as part of the wastewater COS analysis rather than the water COS analysis.

5.3.1. METHODOLOGY

The first step in a COS analysis is to determine the revenue required from wastewater rates. The total revenue requirement results from the wastewater financial plan in **Section 5.2**. The methodology to develop the COS analysis and to apportion the revenue requirement to user classes is informed by the WEF’s Manual of Practice (MOP) No. 27 *Financing and Charges for Wastewater Systems*. COS analyses are tailored to meet the specific needs of each wastewater system. However, there are four distinct steps in every COS analysis to recover costs from customers in an accurate, equitable, and defensible manner:

- 1. Cost functionalization:** O&M expenses and capital assets are categorized by their function in the wastewater system. Sample functions may include collection, treatment, and customer service, among others.
- 2. Cost causation component allocation:** Functionalized costs are then allocated to cost causation components based on their burden on the wastewater system. The cost causation components include flow, biological

oxygen demand (BOD), and suspended solids (SS), among other specific cost components. The revenue requirement is allocated accordingly to the cost causation components and results in the total share of the revenue requirement attributable to each cost component.

3. **Mass balance analysis:** The flow and strength (BOD and SS) of wastewater treatment plant (WWTP) influent is attributed to each customer class based on water use data and wastewater generation and strength assumptions that vary by user classification. This analysis estimates the burden each customer class places on the wastewater system.
4. **Revenue requirement distribution:** The mass balance analysis is utilized to distribute the revenue requirement for each cost causation component unit cost to customer classes based on each customer class's individual burden on the wastewater system.

5.3.2.WASTEWATER RATE REVENUE REQUIREMENT

Table 5-22 shows the determination of the wastewater rate revenue requirement for FY 2020-21 (also referred to as the test year). The revenue requirement is split into operating and capital categories (Columns C-D), which are later allocated based on O&M expenses and capital assets. The revenue requirements (Lines 2-4) include FY 2020-21 O&M expenses, debt service, and Estuary Protection Charges.⁷⁸ The revenue offsets (Line 8) include all Fund 51 non-rate revenues. These revenues are applied as offsets to the final rate revenue requirement. The reserve transfer adjustment (Line 12) is equal to FY 2020-21 negative net operating cash flow under the proposed financial plan, and accounts for the drawdown of operating reserves in FY 2020-21. All values are from the proposed wastewater financial plan operating cash flow (Table 5-20). The final rate revenue requirement (Line 15) is calculated as follows:

Total revenue required from rates (Line 15) = Revenue requirements (Line 5) - Revenue offsets (Line 9) - Adjustments (Line 13)

Table 5-22: FY 2020-21 Wastewater Rate Revenue Requirement

[A]	[B]	[C]	[D]	[E]
Line	Description	Operating Revenue Requirement	Capital Revenue Requirement	Total
1	Revenue Requirements			
2	O&M Expenses	\$23,315,145	\$0	\$23,315,145
3	Debt Service	\$0	\$1,537,437	\$1,537,437
4	Estuary Protection Charges	\$0	\$2,386,342	\$2,386,342
5	Total Revenue Requirements	\$23,315,145	\$3,923,779	\$27,238,924
6				
7	Less Revenue Offsets			
8	Other Fund 51 Revenue	\$711,631	\$0	\$711,631
9	Total Revenue Offsets	\$711,631	\$0	\$711,631
10				
11	Less Adjustments			
12	Transfer from (to) Reserves	\$0	\$277,531	\$277,531
13	Total Adjustments	\$0	\$277,531	\$277,531
14				
15	Water Rate Revenue Requirement	\$22,603,514	\$3,646,248	\$26,249,761

⁷⁸ Because Estuary Protection Charges are to be eliminated, proposed wastewater rates must recover additional revenue currently generated by Estuary Protection Charges. There is no effect however on the Wastewater Enterprise's revenue requirement.

5.3.3.FUNCTIONALIZATION AND ALLOCATION OF EXPENSES

After determining the revenue requirement, the next step of the wastewater COS analysis is to allocate O&M expenses and capital assets to the following functional categories:

- » **Treatment:** costs associated with the wastewater treatment facilities to treat wastewater to tertiary standards and disposal
- » **Collection:** costs related to the system of collection and transport of wastewater discharges from customers to the wastewater treatment plan
- » **Customer:** costs of billing, revenue collections, and other customer services functions
- » **Reclaimed Water:** costs directly attributable to the reclaimed water system only (such as reclaimed water distribution)
- » **General:** costs for general administration and operational expenses or any other costs that do not clearly relate to another functional category (i.e. indirect costs)

The functionalization of costs allows for the allocation of costs to cost causation components. Some cost causation components correspond directly to a functional category listed above. The cost causation components include:

- » **Flow:** costs that vary based on the quantity of wastewater generated
- » **Biological Oxygen Demand:** costs that vary based on the BOD strength parameter of wastewater; Biological oxygen demand is a measure of wastewater strength based on the amount of organic matter contained in wastewater prior to treatment and generally defined in terms of milligrams per liter (mg/L) or parts per million (ppm).
- » **Suspended Solids:** costs that vary based on the SS strength parameter of wastewater; Suspended Solids are a measure of wastewater strength based on the amount of solid particles in suspension in wastewater prior to treatment also generally expressed in milligrams per liter (mg/L) or parts per million (ppm).
- » **Customer:** directly associated with the Customer functional category
- » **General:** directly associated with the General functional category

Table 5-23 shows the basis for allocating each functional category to the various cost causation components. This provides the basis for allocating O&M and capital expenses in the following subsections. The Treatment functional category is first allocated to the Reclaimed Water functional category based on reclaimed water's share of costs pertaining to tertiary treatment.⁷⁹ Remaining Treatment costs are then allocated 60 percent to Flow, 20 percent to Biological Oxygen Demand, and 20 percent to Suspended Solids based on Raftelis' estimate of the wastewater treatment plant's cost drivers to treat wastewater to tertiary standards. The Collection functional category is allocated entirely to the Flow cost causation component because collection-related costs depend on the quantity of wastewater rather than the quality (strength) of wastewater. The Customer, Reclaimed Water, and General functional categories are allocated entirely to the corresponding cost causation component.

⁷⁹ Tertiary wastewater treatment is necessary for Ventura Water to meet its VWRP NPDES Permit requirements and to produce reclaimed water. Tertiary treatment capital assets comprise an estimated 36.5 percent of all treatment capital assets. Raftelis estimates that approximately 6.6 percent of wastewater influent from wastewater customers is delivered to customers as reclaimed water after tertiary treatment. Therefore, the Reclaimed Water cost causation component is allocated [$36.5\% \times 6.6\% = 2.4\%$] of all treatment-related costs.

Table 5-23: Allocation of Functional Categories to Wastewater Cost Causation Components

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
Line	Functional Category	Flow	Biological Oxygen Demand	Suspended Solids	Customer	Reclaimed Water	General	Total
1	Treatment ⁸⁰	58.5%	19.5%	19.5%		2.4%		100.0%
2	Collection	100.0%	0.0%	0.0%				100.0%
3	Customer				100.0%			100.0%
4	Reclaimed Water					100.0%		100.0%
5	General						100.0%	100.0%

5.3.4.WASTEWATER ENTERPRISE O&M EXPENSE ALLOCATION

The next step of the COS analysis is to develop an allocation basis for the operating revenue requirement based on the functionalization of the Water Enterprise’s O&M expenses. Raftelis worked with Ventura Water and Finance staff to assign wastewater O&M expenses by line item to the most closely associated functional category. **Table 5-24** summarizes FY 2020-21 wastewater O&M expenses by functional category. This intermediate step is necessary to allocate wastewater O&M expenses to individual cost causation components.

Table 5-24: Summary of Wastewater Enterprise O&M Expenses by Functional Category

[A]	[B]	[C]	[D]
Line	Functional Category	FY 2020-21 O&M Expenses	Percent of Total
1	Treatment	\$7,296,691	31.3%
2	Collection	\$6,050,362	26.0%
3	Customer	\$6,192,044	26.6%
4	Reclaimed Water	\$15,000	0.1%
5	General	\$3,761,047	16.1%
6	Total O&M Expenses	\$23,315,145	100.0%

Table 5-25 shows the allocation of FY 2020-21 O&M expenses by functional category to each cost causation component. The percentage allocation of each functional category (Columns C-H) to the various cost causation components was determined in **Table 5-23**. Total O&M expenses associated with each functional category (Column I) were determined in **Table 5-24**. The total dollar amount allocated to each cost causation component (Line 6) is determined by multiplying the total expense associated with each functional category by the corresponding percentage allocation and summing across all functional categories.

For example, 58.5 percent (Column C, Line 1) of Treatment costs (Column I, Line 1) are allocated to the Flow cost causation factor total (Column C, Line 6). The same calculation is performed for the remaining functional categories (i.e. Column C × Column I in Lines 2-5). The subtotals of Column C × Column I in Lines 1-5 are summed to determine the total dollar amount allocated to the Flow cost causation component (Column C, Line 6). The same calculations are repeated for the remaining cost causation components (Columns D-H) to determine the allocation of O&M expenses to each cost causation component (Line 6). The O&M allocation percentages (Line 8) represent the proportion of O&M expenses allocated to each cost causation component (Line 6). The O&M allocation percentages (Line 8) are used to allocate the total operating revenue requirement (O&M expenses less

⁸⁰ Flow = [(100%-2.4%) × 60%]; Biological oxygen demand = [(100%-2.4%) × 20%]; Suspended solids = [(100%-2.4%) × 20%]. Reclaimed Water’s share of 2.4% is removed from each of the treatment-related cost causation components.

revenue offsets). The total operating revenue requirement (Column I, Line 10) equals the operating revenue requirement from **Table 5-22**, Column C, Line 15. This total is allocated to each cost causation component (Columns C-H, Line 10) based on O&M allocation percentages (Columns C-H, Line 8).

Table 5-25: Allocation of Wastewater Enterprise O&M Expenses to Cost Causation Components

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
Line	Functional Category	Flow	Biological Oxygen Demand	Suspended Solids	Customer	Reclaimed Water	General	FY 2020-21 O&M
1	Treatment	58.5%	19.5%	19.5%		2.4%		\$7,296,691
2	Collection	100.0%	0.0%	0.0%				\$6,050,362
3	Customer				100.0%			\$6,192,044
4	Reclaimed Water					100.0%		\$15,000
5	General						100.0%	\$3,761,047
6	Total O&M	\$10,322,536	\$1,424,058	\$1,424,058	\$6,192,044	\$191,400	\$3,761,047	\$23,315,145
7								
8	<i>O&M Allocation</i>	<i>44.3%</i>	<i>6.1%</i>	<i>6.1%</i>	<i>26.6%</i>	<i>0.8%</i>	<i>16.1%</i>	<i>100.0%</i>
9								
10	Operating Revenue Requirement	\$10,007,469	\$1,380,593	\$1,380,593	\$6,003,049	\$185,558	\$3,646,252	\$22,603,514

5.3.5. WASTEWATER ENTERPRISE CAPITAL ALLOCATION

Capital assets are utilized in COS analyses to allocate the capital revenue requirement to the various cost causation components. The distribution of short-term CIP project costs can be heavily weighted to specific cost causation components based on the type of projects. Use of short-term plans to allocate capital costs may cause rates to fluctuate and result in customer confusion. The overall wastewater asset base however is considerably stable in the long-term, and therefore is more representative of long-term capital investment in Ventura Water’s wastewater system. Thus, functionalized capital assets are used to allocate capital costs.

Ventura Water and Finance staff provided Raftelis with a detailed asset listing that included the original cost of each individual wastewater asset. Raftelis calculated the replacement cost less depreciation (RCLD) of each asset based on net book value using the Engineering News-Record’s 20-City Average Cost Construction Index (CCI) to account for capital cost inflation. As part of the capital asset analysis, Raftelis assigned each individual asset to a functional category with the assistance of Ventura Water and Finance staff. Total wastewater asset value (RCLD) by functional category is shown in **Table 5-26**. Percentages are rounded to the nearest one-tenth of one percent.

Table 5-26: Summary of Wastewater Enterprise Capital Assets by Functional Category

[A]	[B]	[C]	[D]
Line	Functional Category	Asset Value (RCLD)	Percent of Total
1	Treatment	\$70,242,270	50.4%
2	Collection	\$65,873,711	47.3%
3	Customer	\$0	0.0%
4	Reclaimed Water	\$454,501	0.3%
5	General	\$2,793,831	2.0%
6	Total Asset Value (RCLD)	\$139,364,313	100.0%

Table 5-27 shows the allocation of capital assets by functional category to each cost causation component. The percentage allocation of each functional category (Columns C-H) to the various cost causation components was determined in **Table 5-23**. Total capital assets associated with each functional category (Column I) were determined in **Table 5-26**. The total dollar amount allocated to each cost causation component (Line 6) is determined by multiplying the total asset value associated with each functional category by the corresponding percentage allocation and summing across all functional categories. This is consistent with the methodology used to determine the allocation of O&M expenses to cost causation components in **Table 5-25**.

The capital allocation percentages (Line 8) represent the proportion of capital assets allocated to each cost causation component (Line 6). The capital allocation percentages (Line 8) are used to allocate the total capital revenue requirement in Column I, Line 10 (which was calculated in **Table 5-22**, Column D, Line 15). This total is allocated to each cost causation component (Columns C-H, Line 10) based on capital allocation percentages (Columns C-H, Line 8).

Table 5-27: Allocation of Functionalized Wastewater Capital Assets to Cost Causation Components

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]
Line	Functional Category	Flow	Biological Oxygen Demand	Suspended Solids	Customer	Reclaimed Water	General	Asset Value (RCLD)
1	Treatment	58.5%	19.5%	19.5%		2.4%		\$70,242,270
2	Collection	100.0%	0.0%	0.0%				\$65,873,711
3	Customer				100.0%			\$0
4	Reclaimed Water					100.0%		\$454,501
5	General						100.0%	\$2,793,831
6	Total Assets	\$107,000,194	\$13,708,828	\$13,708,828	\$0	\$2,152,633	\$2,793,831	\$139,364,313
7								
8	<i>Capital Allocation</i>	<i>76.8%</i>	<i>9.8%</i>	<i>9.8%</i>	<i>0.0%</i>	<i>1.5%</i>	<i>2.0%</i>	<i>100.0%</i>
9								
10	Capital Revenue Requirement	\$2,799,492	\$358,670	\$358,670	\$0	\$56,320	\$73,096	\$3,646,248

5.3.6.WASTEWATER COST OF SERVICE ALLOCATION

Table 5-28 shows the allocation of the total FY 2020-21 wastewater rate revenue requirement to the various cost causation components. The COS allocations (Column F) provide the basis for FY 2020-21 rate calculations shown in **Section 5.5**. The results shown in **Table 5-28** are calculated as follows based on intermediate results developed in the preceding subsections:

- 1. Operating Revenue Requirement** (Column C): The total operating revenue requirement consists of the Wastewater Enterprise’s O&M expenses less revenue offsets. The allocation of the total operating revenue requirement to each cost causation component was previously determined in **Table 5-25**, Columns C-H, Line 10.
- 2. Capital Revenue Requirement** (Column D): The total capital revenue requirement consists of debt service and revenue currently generated by Estuary Protection Charges less projected draw down of operating reserves. The allocation of the total capital revenue requirement to each cost causation component was previously determined in **Table 5-27**, Columns C-H, Line 10).
- 3. Reallocation of General Costs** (Column E): The total General cost allocation equals the operating revenue requirement (Column C, Line 6) and capital revenue requirement (Column D, Line 6) allocated to the General cost causation component. The total General revenue requirement (Column, E, Line 6) is fully reallocated to all other cost causation components on a pro rata basis (Column F, Lines 2-5).⁸¹ Note that the reallocation results in a shifting of costs between cost causation components but does not change the total rate revenue requirement.
- 4. Final Cost of Service Allocation** (Column F): The final COS allocation to each cost causation component (Column F, Lines 1-7) equals the sum of Columns C-E. Note that the total COS allocation (Column F, Line 7) equals the total FY 2020-21 wastewater rate revenue requirement (from **Table 5-22**, Column E, Line 15).

Table 5-28: Wastewater Cost of Service Allocation (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]
Line	Cost Causation Component	Operating Revenue Requirement	Capital Revenue Requirement	Reallocation of General Costs	COS Allocation
1	Flow	\$10,007,469	\$2,799,492	\$2,114,189	\$14,921,150
2	Biological Oxygen Demand	\$1,380,593	\$358,670	\$287,120	\$2,026,382
3	Suspended Solids	\$1,380,593	\$358,670	\$287,120	\$2,026,382
4	Customer	\$6,003,049	\$0	\$990,991	\$6,994,039
5	Reclaimed Water	\$185,558	\$56,320	\$39,930	\$281,808
6	General	\$3,646,252	\$73,096	(\$3,719,348)	\$0
7	Total	\$22,603,514	\$3,646,248	\$0	\$26,249,761

⁸¹ The operating (Column C) and capital (Column D) revenue requirements are summed for each cost causation component shown in Lines 1-5. The percentage of this sum falling within each cost causation component (Lines 1-5) is multiplied by total reallocated General costs (Column E, Line 6) to determine the share of General costs reallocated to each cost causation component (Column E, Lines 1-5).

5.3.7.MASS BALANCE ANALYSIS

The next step of the wastewater COS analysis is to attribute flow and strength loadings entering Ventura Water's wastewater treatment plant to various user classifications. This is necessary to eventually allocate the Flow, Biological Oxygen Demand, and Suspended Solids cost causation components to each customer class for recovery by the proposed wastewater rates.

Table 5-29 shows Raftelis' mass balance analysis of the Ventura Water Reclamation Facility based on plant influent data for FY 2018-19. The result is attribution of flow and strength loadings to each customer class. All numerical values in green represent inputs or assumptions to the analysis. All numerical values in black represent values calculated by Raftelis based on inputs and assumptions in green. See footnotes to **Table 5-29** for additional detail. Key inputs and assumptions include:

- » Total FY 2018-19 wastewater flows entering the wastewater treatment plant (from Ventura Water staff)
- » Measurements of FY 2018-19 strength concentration for BOD and SS (from Ventura Water staff)
- » Detailed FY 2018-19 flow and strength measurements for all industrial customers (from Ventura Water staff)
- » FY 2018-19 water use associated with non-residential wastewater customers (from Ventura Water staff)
- » Assumed strength concentrations for commercial (non-residential) customers, churches, and schools (estimated by Raftelis based on wastewater loading factors used by Los Angeles County Sanitation District)
- » Residual plant influent is attributable to Residential class wastewater generation. That is the difference between net plant influent and estimated wastewater generation from all non-residual sources is Residential wastewater flow. After applying all residual wastewater generation to Residential customers, Raftelis estimates that the residential wastewater discharge factor for Ventura Water's wastewater service area is approximately 45 gallons per capita per day, which is well within the bounds of industry norms.

Table 5-29: FY 2018-19 Mass Balance Analysis

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Line	Description	Flow (HCF)	Biological Oxygen Demand (mg/L)	Suspended Solids (mg/L)	Flow (MG) ⁸²	Biological Oxygen Demand (lbs) ⁸³	Suspended Solids (lbs)
1	Treatment Plant Summary						
2	Total Plant Influent	3,581,345	286	280	2,679	6,385,989	6,266,648
3	Less Inflow/Infiltration ⁸⁴	179,067	150	150	134	167,670	167,670
4	Net Plant Influent	3,402,278	293	287	2,545	6,218,319	6,098,977
5							
6	Non-Residential Influent						
7	Commercial Group 1	638,777	174	112	478	691,932	448,074
8	Commercial Group 2	57,909	310	120	43	112,198	43,496
9	Commercial Group 3	41,570	600	400	31	155,697	103,798
10	Commercial Group 4	18,046	800	800	13	90,120	90,120
11	Commercial Group 5	194,348	812	506	145	985,352	613,995
12	Commercial Group 6 ⁸⁵	0	174	112	0	0	0
13	Industrial ⁸⁶	42,196	323	313	32	84,984	82,532
14	Schools	67,139	130	100	50	54,484	41,911
15	Churches ⁸⁷	10,799	150	150	8	10,111	10,111
16	Total Non-Residential Influent	1,070,784	327	215	801	2,184,878	1,434,036
17							
18	Residual Influent						
19	Residential ⁸⁸	2,331,494	277	321	1,744	4,033,441	4,664,941
20	Total Residential Influent⁸⁹	2,331,494	277	321	1,744	4,033,441	4,664,941

Note: All values in green are inputs; all values in black are calculated

⁸² Conversion factor: one (1) hundred cubic feet = 0.000748 million gallons.

⁸³ Conversion factor: one (1) milligram per liter = 8.35 pounds per million gallons.

⁸⁴ Inflow and infiltration is assumed to contribute 5% of total wastewater treatment plant flows.

⁸⁵ Commercial Group 6 customers are assumed to have a 30% return factor (i.e. ratio of sewer flow to water use), as most nursery water is for plant use.

⁸⁶ Conversion factor: one (1) pound of COD per million gallons of flow = 0.5 pounds of BOD per million gallons of flow.

⁸⁷ Churches are assumed to have a 75% return factor (i.e. ratio of sewer flow to water use) to account for water use associated with outdoor irrigation.

⁸⁸ Residual flow and strength loadings are attributed to the residential customer class.

⁸⁹ Equal to [Line 4 – Line 16]

5.3.8.WASTEWATER UNIT COSTS

The next step of the wastewater COS analysis is to develop unit costs for each cost causation component. This is necessary to allocate the revenue requirement to each customer class in subsequent steps of the COS analysis. **Table 5-30** shows the calculation of unit costs (Column E) by dividing the COS allocation for each cost causation component in Column C (from **Table 5-28**) by the corresponding units of service in Column D. Flow, Biological Oxygen Demand, and Suspended Solids units of service are based on net plant influent estimates from the mass balance analysis (see **Table 5-29**). Customer units of service equal the number of monthly wastewater bills in FY 2020-21 after adjusting for multiple family residential customers, whose household density is lower than single family residential customers. Reclaimed Water unit of service simply equal projected reclaimed water use in FY 2020-21 (from **Table 5-5**). See footnotes to **Table 5-30** for additional detail on units of service.

Table 5-30: Wastewater Unit Costs (Test Year FY 2020-21)

[A] Line	[B] Cost Causation Component	[C] COS Allocation	[D] Units of Service	[E] Unit Cost
1	Flow	\$14,921,150	3,402,278 HCF of Flow ⁹⁰	\$4.39 per HCF
2	Biological Oxygen Demand	\$2,026,382	6,218,319 lbs. of BOD ⁹¹	\$0.33 per lb.
3	Suspended Solids	\$2,026,382	6,098,977 lbs. of SS ⁹²	\$0.33 per lb.
4	Customer	\$6,994,039	466,204 Weighted Bills ⁹³	\$15.00 per Bill
5	Reclaimed Water	\$281,808	258,036 HCF of Reclaimed Water Use	\$1.09 per HCF
6	Total	\$26,249,761		

5.3.9.WASTEWATER COST ALLOCATION TO CUSTOMER CLASSES

Table 5-31 shows the allocation of the rate revenue requirement by cost causation component to each customer class based on units costs and units of service. The units of service shown for each customer class for the Flow, Biological Oxygen Demand, and Suspended Solids cost causation components (Columns C-E, Lines 2-12) were previously determined as part of the mass balance analysis (see **Table 5-29**). Number of bills (Column F, Lines 2-12) equal the number of accounts associated with each customer class multiplied by 12 monthly bill periods per year. However, the number of bills shown for multiple family residential accounts (Column F, Line 3) is adjusted based on the ratio of multiple family residential household density to single family residential household density (see footnote to **Table 5-30** for more detail). Reclaimed Water units of service (Column G, Line 13) simply equal projected reclaimed water use in FY 2020-21 (from **Table 5-5**). Cost allocations to each customer class (Lines 19 - 30) simply equal the unit cost (Line 16) multiplied by the corresponding units of service (Lines 2-13)

⁹⁰ Net plant flows in FY 2018-19 (in HCF) from **Table 5-29**, Column C, Line 4.

⁹¹ Net plant biological oxygen demand in FY 2018-19 (in pounds) from **Table 5-29**, Column G, Line 4.

⁹² Net plant suspended solids in FY 2018-19 (in pounds) from **Table 5-29**, Column H, Line 4.

⁹³ Total projected weighted bills in FY 2020-21 equals [(44,289 connections × 12 monthly billing periods) - [20,686 multi-family residential dwelling units × (100%-73.7%)]] to account for reduced fixed charge for multi-family due to lower household density. Raftelis estimates that the household density of multiple family residential customers in Ventura Water's service area is 73.7% of single family residential household density.

Table 5-31: Wastewater Cost Allocation to Customer Classes (Test Year FY 2020-21)

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Line	Customer Class	Flow	Biological Oxygen Demand	Suspended Solids	Customer	Recycled Water	Total
1	Units	<i>HCF</i>	<i>LBS.</i>	<i>LBS.</i>	<i>Bills</i>	<i>HCF</i>	
2	Single Family Residential	1,368,844	2,368,074	2,738,834	260,163		
3	Multiple Family Residential	962,650	1,665,367	1,926,107	248,227		
4	Commercial Group 1	638,777	691,932	448,074	17,928		
5	Commercial Group 2	57,909	112,198	43,496	485		
6	Commercial Group 3	41,570	155,697	103,798	127		
7	Commercial Group 4	18,046	90,120	90,120	164		
8	Commercial Group 5	194,348	985,352	613,995	3,065		
9	Commercial Group 6	0	0	0	0		
10	Churches	10,799	10,111	10,111	710		
11	Schools	67,139	54,484	41,911	564		
12	Industrial	42,196	84,984	82,532	36		
13	Reclaimed Water	N/A	N/A	N/A	N/A	258,036	
14	Total	3,402,278	6,218,319	6,098,977	531,469	258,036	
15							
16	Unit Cost	\$4.39	\$0.33	\$0.33	\$15.00	\$1.09	
17							
18	Cost Allocation						
19	Single Family Residential	\$6,003,249	\$771,691	\$909,976	\$3,902,995	\$0	\$11,587,912
20	Multiple Family Residential	\$4,221,833	\$542,698	\$639,948	\$2,744,813	\$0	\$8,149,292
21	Commercial Group 1	\$2,801,443	\$225,482	\$148,872	\$268,959	\$0	\$3,444,756
22	Commercial Group 2	\$253,968	\$36,562	\$14,451	\$7,279	\$0	\$312,260
23	Commercial Group 3	\$182,311	\$50,737	\$34,487	\$1,911	\$0	\$269,446
24	Commercial Group 4	\$79,143	\$29,368	\$29,942	\$2,457	\$0	\$140,910
25	Commercial Group 5	\$852,339	\$321,100	\$204,000	\$45,979	\$0	\$1,423,418
26	Commercial Group 6	\$0	\$0	\$0	\$0	\$0	\$0
27	Churches	\$47,358	\$3,295	\$3,359	\$10,646	\$0	\$64,658
28	Schools	\$294,447	\$17,755	\$13,925	\$8,462	\$0	\$334,589
29	Industrial	\$185,057	\$27,694	\$27,421	\$540	\$0	\$240,713
30	Reclaimed Water	\$0	\$0	\$0	\$0	\$281,808	\$281,808
31	Total	\$14,921,150	\$2,026,382	\$2,026,382	\$6,994,039	\$281,808	\$26,249,761

Table 5-32 shows projected wastewater rate revenues by customer class for FY 2020-21 (based on the prior COS analysis) and for FY 2020-21 (based on the updated COS analysis presented in this section). All proposed COS projections for FY 2020-21 are for illustrative purposes to demonstrate the impact of the updated COS allocations on each customer class. However, no changes to current rates will be implemented prior to FY 2021-22. Note that the results shown are based on detailed calculations that are dependent on rate design considerations addressed subsequently in **Section 5.5**.

Table 5-32: Cost to Serve by Wastewater Customer Class

[A]	[B]	[C]	[D]	[E]	[F]
Line	Charge/Customer Class	Current COS FY 2020-21 (\$)	Proposed COS FY 2020-21 (\$)	Current COS FY 2020-21 (%)	Proposed COS FY 2020-21 (%)
1	Single Family Residential	\$10,026,056	\$11,587,912	38.2%	44.1%
2	Multiple Family Residential	\$7,098,458	\$8,149,292	27.0%	31.0%
3	Commercial Group 1	\$3,419,927	\$3,444,756	13.0%	13.1%
4	Commercial Group 2	\$335,788	\$312,260	1.3%	1.2%
5	Commercial Group 3	\$305,861	\$269,446	1.2%	1.0%
6	Commercial Group 4	\$165,181	\$140,910	0.6%	0.5%
7	Commercial Group 5	\$1,599,186	\$1,423,418	6.1%	5.4%
8	Commercial Group 6	\$0	\$0	0.0%	0.0%
9	Churches	\$62,961	\$64,658	0.2%	0.2%
10	Schools	\$340,592	\$334,589	1.3%	1.3%
11	Industrial	\$264,275	\$240,713	1.0%	0.9%
12	Reclaimed Water	\$245,135	\$281,808	0.9%	1.1%
13	Estuary Protection Charges	\$2,386,342	\$0	9.1%	0.0%
14	Total	\$26,249,761	\$26,249,761	100.0%	100.0%

5.4. Proposed Wastewater Rate Structure Modifications

Raftelis worked closely with Ventura Water and Finance staff and the Water Commission to evaluate potential changes to the existing wastewater rate structure. All proposed wastewater rates presented in subsequent sections incorporate the following recommended revisions to the existing wastewater rate structure.

- 1. Adjust Rate Schedule to Reflect Monthly Billing Basis:** Ventura Water plans to transition from billing on a bimonthly basis to a monthly basis beginning in July 2021. Therefore, all proposed Fixed Charges and Flow Charge caps shown are monthly.
- 2. Eliminate Estuary Protection Charge:** Raftelis recommends that Ventura Water eliminate the current Estuary Protection Charge equal to 10 percent of each customer's wastewater bill. This proposed change is supported by the Water Commission to simplify the wastewater rate structure and improve customer understanding. Note that there is no net revenue impact resulting from this proposed change, as the proposed rates are designed to collect additional revenue to offset the loss of Estuary Protection Charge revenue. There is also no change to the use of the revenue stream as the existing Estuary Protection Charge was developed for meeting regulatory mandates for wastewater discharge and funding proposed projects to achieve compliance. This will be achieved with the VenturaWaterPure Program and revenues will be used to finance and operate the project, as well as associated monitoring requirements.

- 3. Update Residential Flow Charge Basis:** Residential customers are currently subject to Flow Charges based on the prior fiscal year average winter water use. Each customer is subject to a cap of 15 HCF per month for single family residential customers and 12 HCF per month for multiple family residential customers. The current basis is administratively burdensome and is difficult for customers to understand. Raftelis therefore recommends that Ventura Water begin charging residential customers for Flow Charges based on actual water use each month and subject to a revised monthly cap. Raftelis recommends that the monthly cap be reduced from 15 HCF to 12 HCF per month for single family residential customers and from 12 HCF to 10 HCF per month for multiple family residential customers. This change will align the wastewater flow cap with the Tier 2 allotment for water and more accurately reflects changes in water use and estimated wastewater generation by residential users. Proposed changes to the residential Flow Charge basis are described in detail in **Table 5-33**.

Table 5-33: Proposed Changes to Residential Wastewater Flow Charge Cap

Residential Wastewater Flow Charge	Current Bimonthly Billing Units	Proposed Monthly Billing Units
Single Family Residential	Prior year winter average water use for two full bimonthly billing cycles from approximately February-May (in HCF) subject to 30 HCF bimonthly cap.	Actual water use each monthly billing period (in HCF) subject to 12 HCF monthly cap.
Multiple Family Residential	Prior year winter average water use for two full bimonthly billing cycles from approximately February-May (in HCF) subject to 24 HCF per dwelling unit bimonthly cap.	Actual water use each monthly billing period (in HCF) subject to 10 HCF per dwelling unit monthly cap.

Table 5-34 shows estimated FY 2020-21 residential Flow Charge billing units based on the current and proposed charge basis. Proposed billing units are based on detailed account-level analysis of FY 2018-19 residential water use. Raftelis projects that the proposed basis will result in a considerable increase in total residential Flow Charge billing units. Note however that an increase in billing units does not increase the residential customer class’s share of the revenue requirement (which was previously determined as part of the wastewater COS analysis in **Section 5.3**), it simply changes the denominator for determining the unit cost of wastewater flow.

Table 5-34: Projected FY 2020-21 Residential Variable Billing Units – Current versus Proposed

Description	Current Annual Billing Units (HCF)	Proposed Annual Billing Units (HCF)
Single Family Residential	1,778,075	2,157,337
Multiple Family Residential	1,260,388	1,547,918
Total	3,038,462	3,705,254

5.5. Proposed Wastewater Rates

Section 5.5 shows detailed calculations of proposed wastewater rates through FY 2025-26. All proposed rates are first calculated directly from the results of the COS analysis (in **Section 5.3**) for FY 2020-21 (i.e. the “test year”). Note however that proposed rates will not be implemented until FY 2021-22. Therefore, all FY 2020-21 “COS” rates and charges shown represent intermediate results of the rate design process but will not actually be

implemented during FY 2020-21. FY 2020-21 “COS” rates and charges must be calculated to provide a basis for proposed rates for FY 2021-22 through FY 2025-26 (shown in **Section 5.5.2**).

5.5.1. PROPOSED WASTEWATER RATES (TEST YEAR FY 2020-21)

Table 5-35 shows the calculation of COS wastewater rates for the test year. The revenue requirement associated with each charge Column C was determined from customer class cost allocations in **Table 5-32**. For most customer classes, all Customer costs are recovered by Fixed Charges and all other cost causation components are recovered by Flow Charges, with the exception of schools, industrial customers, and reclaimed customers. All units of service in Column D reflect the projected number of bills, water use (subject to the proposed caps for residential customers), number of school ADAs, industrial loadings, and reclaimed water use in FY 2020-21. COS rates (Column E) are calculated by dividing the revenue requirement (Column C) by units of service (Column E). Proposed rates are compared to current charges in Columns F-H.

Table 5-35: Proposed Wastewater Rate Calculation (Test Year FY 2020-21)

[A] Line	[B] Description	[C] Revenue Requirement	[D] Units of Service	[E] COS Rate	[F] Current Rate	[G] Difference (\$)	[H] Difference (%)
1	Residential						
2	Single Family Residential Monthly Fixed Charge	\$3,902,995	260,163	\$15.00	\$12.84	\$2.16	16.8%
3	Multiple Family Residential Monthly Fixed Charge	\$2,744,813	248,227	\$11.06	\$9.51	\$1.55	16.3%
4	Residential Flow Charge (per HCF)	\$13,089,396	3,705,254	\$3.53	\$3.76	(\$0.23)	-6.0%
5							
6	Commercial						
7	Monthly Fixed Charge (All Groups)	\$327,124	21,805	\$15.00	\$12.84	\$2.16	16.8%
8	Flow Charge: Group 1 (per HCF)	\$3,175,797	645,694	\$4.92	\$4.94	(\$0.02)	-0.4%
9	Flow Charge: Group 2 (per HCF)	\$304,981	58,536	\$5.21	\$5.63	(\$0.42)	-7.5%
10	Flow Charge: Group 3 (per HCF)	\$267,535	42,020	\$6.37	\$7.24	(\$0.87)	-12.1%
11	Flow Charge: Group 4 (per HCF)	\$138,453	18,241	\$7.59	\$8.94	(\$1.35)	-15.1%
12	Flow Charge: Group 5 (per HCF)	\$1,377,439	196,453	\$7.01	\$7.94	(\$0.93)	-11.7%
13	Flow Charge: Group 6 (per HCF) ⁹⁴	\$0	0	\$1.48	\$1.73	(\$0.25)	-14.7%
14							
15	Churches						
16	Monthly Fixed Charge	\$10,646	710	\$15.00	\$12.84	\$2.16	16.8%
17	Flow Charge (per HCF)	\$54,013	14,554	\$3.71	\$3.70	\$0.01	0.3%
18							
19	Schools						
20	Monthly Charge (per 100 ADAs)	\$334,589	3,384	\$98.87	\$100.64	(\$1.77)	-1.8%
21							
22	Industrial						
23	Flow (per MG)	\$185,057	31.90	\$5,800.34	\$5,814.85	(\$14.51)	-0.2%
24	COD (per 1,000 lbs.)	\$27,694	171.81	\$161.19	\$224.18	(\$62.99)	-28.1%
25	SS (per 1,000 lbs.)	\$27,421	82.98	\$330.47	\$484.93	(\$154.46)	-31.9%
26							
27	Reclaimed						
28	Variable Rate (per HCF)	\$281,808	258,036	\$1.09	\$0.95	\$0.14	15.0%

⁹⁴ Group 6 Flow Charges are set equal to 30 percent of Group 1 Flow Charges to account for Group 6's assumed 30 percent return factor (Group 1 and Group 6 are assumed to have the same strength concentrations). This is necessary due to the lack of any cost allocations to Group 6 (as there are currently no customers charged at the Group 6 Flow Charge).

5.5.2. PROPOSED FIVE-YEAR WASTEWATER RATE SCHEDULE

Table 5-36 shows the proposed five-year schedule of wastewater rates for FY 2021-22 to FY 2025-26. Proposed FY 2021-22 wastewater rates were calculated by increasing COS wastewater rates (from **Table 5-35**) by the proposed FY 2021-22 revenue adjustment of 6 percent (from **Table 5-19**). All proposed rates in subsequent years are then increased by 6 percent per year based on the schedule of proposed revenue adjustments (from **Table 5-19**). All proposed rates are rounded up to the nearest cent to ensure adequate revenue recovery. Current FY 2020-21 wastewater rates (from **Table 5-1**) are adjusted to reflect monthly billing. Note that reclaimed water rates are omitted from **Table 5-36** and included as part of the proposed five-year water rate schedule in **Section 0**.

Table 5-36: Proposed Five-Year Wastewater Rate Schedule

Description	Current ⁹⁵	Proposed July 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Single Family Residential						
Monthly Fixed Charge	\$12.84	\$15.91	\$16.86	\$17.87	\$18.94	\$20.08
Flow Charge (per HCF) ⁹⁶	\$3.76	\$3.75	\$3.97	\$4.21	\$4.46	\$4.73
Multiple Family Residential						
Monthly Fixed Charge (per dwelling unit)	\$9.51	\$11.73	\$12.43	\$13.17	\$13.97	\$14.80
Flow Charge (per HCF) ⁹⁷	\$3.76	\$3.75	\$3.97	\$4.21	\$4.46	\$4.73
Commercial						
Monthly Fixed Charge	\$12.84	\$15.91	\$16.86	\$17.87	\$18.94	\$20.08
Flow Charge (per HCF)						
Group 1	\$4.94	\$5.22	\$5.53	\$5.86	\$6.21	\$6.59
Group 2	\$5.63	\$5.53	\$5.86	\$6.21	\$6.58	\$6.98
Group 3	\$7.24	\$6.75	\$7.16	\$7.59	\$8.04	\$8.53
Group 4	\$8.94	\$8.05	\$8.53	\$9.04	\$9.59	\$10.16
Group 5	\$7.94	\$7.44	\$7.88	\$8.36	\$8.86	\$9.39
Group 6	\$1.73	\$1.57	\$1.66	\$1.76	\$1.87	\$1.98
Churches						
Monthly Fixed Charge	\$12.84	\$15.91	\$16.86	\$17.87	\$18.94	\$20.08
Flow Charge (per HCF)	\$3.70	\$3.94	\$4.17	\$4.43	\$4.69	\$4.97
Schools						
Monthly Charge (per ADA)	\$100.64	\$104.80	\$111.09	\$117.76	\$124.82	\$132.31
Industrial						
Flow (per million gallons)	\$5,814.85	\$6,148.36	\$6,517.26	\$6,908.30	\$7,322.80	\$7,762.16
Chemical Oxygen Demand (per 1,000 lbs.)	\$224.18	\$170.87	\$181.12	\$191.99	\$203.50	\$215.71
Suspended Solids (per 1,000 lbs.)	\$484.93	\$350.30	\$371.32	\$393.59	\$417.21	\$442.24
Estuary Protection Charge						
All Customer Classes (% of WW Bill)	10%	N/A	N/A	N/A	N/A	N/A

⁹⁵All current rates shown on a monthly basis to provide a direct comparison to proposed rates.

⁹⁶ Single family residential wastewater customers are currently charged based on average winter water usage subject to a cap of 15 HCF per month. Beginning in FY 2021-22 it is proposed that single family residential wastewater customers will be charged based on actual water usage each billing period subject to a cap of 12 HCF per month.

⁹⁷ Multiple family residential wastewater customers are currently charged based on average winter water usage subject to a cap of 12 HCF per dwelling unit per month. Beginning in FY 2021-22 it is proposed that single family residential wastewater customers will be charged based on actual water usage each billing period subject to a cap of 10 HCF per dwelling unit per month.

6. Customer Bill Impacts

6.1. Monthly Water Bill Impacts

Figure 6-1 shows sample monthly water bills for single family residential customers with a 3/4-inch water meter at varying levels of water use under both current rates and proposed FY 2021-22 rates. Note that approximately 95 percent of single family residential customers have a 3/4-inch water meter. The five water use levels shown are defined in Table 6-1, and were calculated based on account-level single family residential water billing data for FY 2018-19.

Figure 6-1: Single Family Residential Monthly Water Bill Impacts (FY 2021-22)

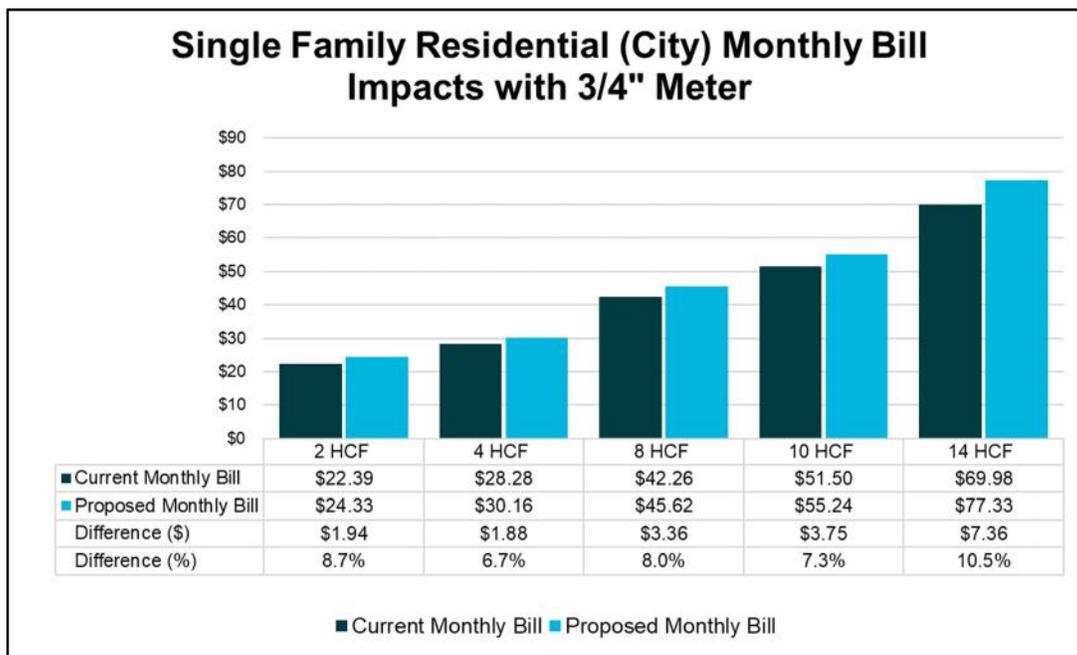


Table 6-1: FY 2018-19 Water Use per Account - Single Family Residential

Single Family Residential Water Use	HCF/Month
10 th Percentile	2 HCF
25 th Percentile	4 HCF
Median	8 HCF
75 th Percentile	10 HCF
90 th Percentile	14 HCF

Table 6-2 shows sample monthly water bills for two representative commercial water users under both current rates and proposed FY 2021-22 rates. Water meter size was selected based on common commercial customer characteristics. Monthly water use was determined based on water demand factors from Ventura Water’s 2020 Water Demand Factor Study.

Table 6-2: Commercial Water Bill Impacts (FY 2021-22)

Description	Small Retail Establishment (1,000 square feet)	Restaurant (1,500 square feet)
Meter Size	1-inch meter	2-inch meter
Monthly Water Use	4 HCF	40 HCF
Proposed Monthly Bill (FY 2021-22)	\$45.27	\$256.00
Current Monthly Bill (FY 2020-21)	\$41.44	\$232.41
<i>Difference (\$)</i>	<i>\$3.84</i>	<i>\$23.59</i>
<i>Difference (%)</i>	<i>9.3%</i>	<i>10.2%</i>

6.2. Monthly Wastewater Bill Impacts

Figure 6-2 shows sample monthly wastewater bills for single family residential customers at varying levels of water use under both current rates and proposed FY 2021-22 rates. Current Flow Charges are based on prior year winter average water use subject to a 15 HCF monthly cap, while proposed Flow Charges are based on monthly water use subject to a 12 HCF monthly cap (see **Table 6-3**). Winter monthly and monthly water use levels were calculated based on account-level single family residential water billing data for FY 2018-19. Note that actual single family customer impacts in FY 2021-22 may vary based on each customer’s water use characteristics during winter months versus the entire year.

Figure 6-2: Single Family Residential Monthly Wastewater Bill Impacts (FY 2021-22)

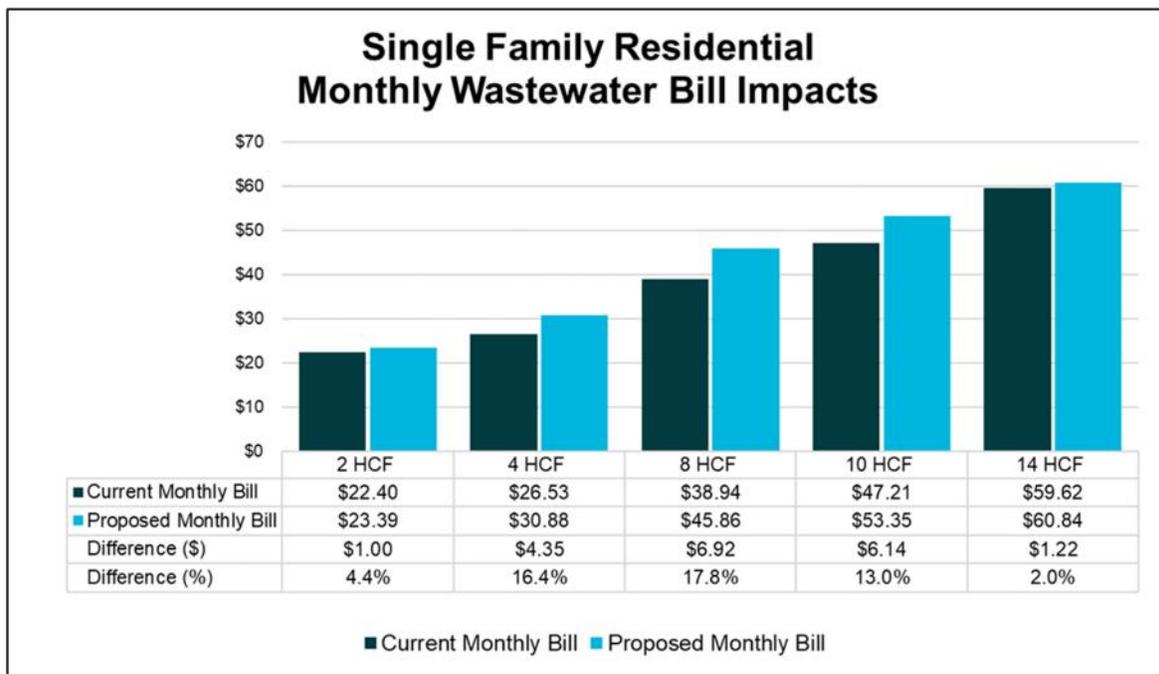


Table 6-3: Single Family Residential Variable Billing Units – Current versus Proposed

Single Family Residential	Winter Average Monthly Water Use (Current)	Monthly Water Use (Proposed)
10 th Percentile	2 HCF	2 HCF
10 th Percentile	3 HCF	4 HCF
Average	6 HCF	8 HCF
75 th Percentile	8 HCF	10 HCF
90 th Percentile	11 HCF	14 HCF

Table 6-4 shows sample monthly wastewater bills for two representative commercial water users under both current rates and proposed FY 2021-22 rates. Monthly water use was determined based on water demand factors from Ventura Water’s 2020 Water Demand Factor Study. Small retail establishments are subject to Group 1 Flow Charges. Note that most commercial wastewater customers are classified as Group 1. Restaurants are subject to Group 5 Flow Charges. Although a typical restaurant may experience a monthly wastewater bill decrease in FY 2021-22, these accounts are expected to have higher monthly wastewater bills relative to current bills by FY 2024-25 due to proposed rate increases beyond FY 2021-22.

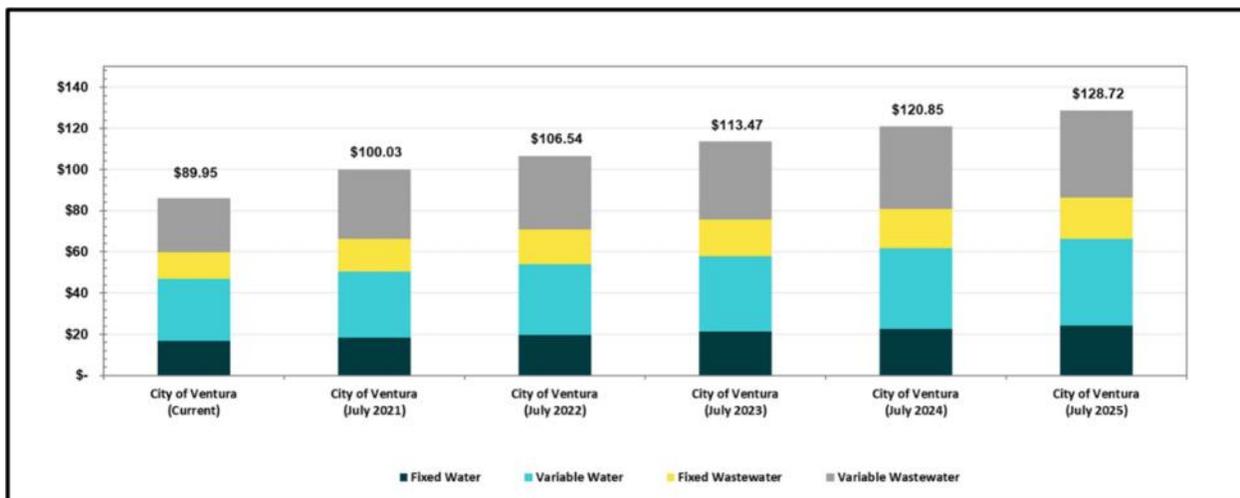
Table 6-4: Commercial Wastewater Bill Impacts (FY 2021-22)

Description	Small Retail Establishment (1,000 square feet)	Restaurant (1,500 square feet)
Monthly Water Use	4 HCF	40 HCF
Proposed Monthly Bill (FY 2021-22)	\$36.79	\$313.51
Current Monthly Bill (FY 2020-21)	\$35.86	\$363.48
<i>Difference (\$)</i>	<i>\$0.93</i>	<i>(\$49.97)</i>
<i>Difference (%)</i>	<i>2.6%</i>	<i>-13.7%</i>

6.3. Combined Water & Wastewater Monthly Bill Impacts

Figure 6-3 shows combined monthly water and sewer bills for a single family residential customer over the study period. The monthly bills shown are based on a single family residential customer with a 3/4-inch water meter using 9 HCF of water per month. The wastewater portion of the current monthly bill assumes 7 HCF of prior year winter average water use to determine the current Flow Charges.

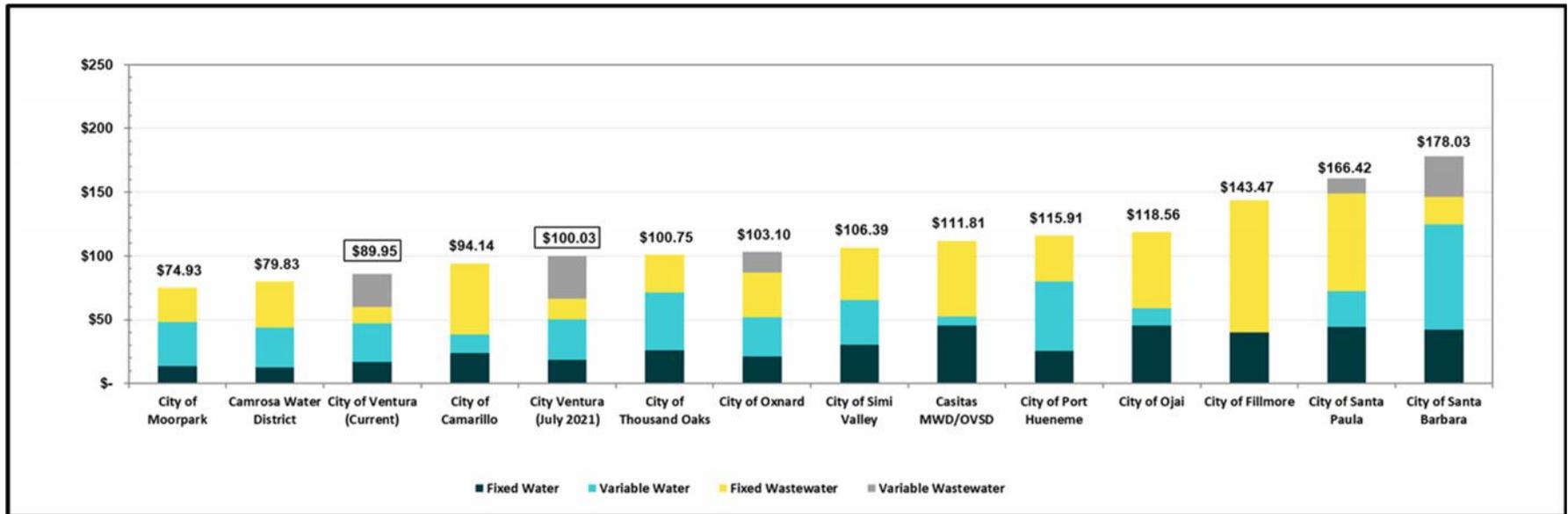
Figure 6-3: Five-Year Combined Monthly Bill Impacts for Single Family Residential (9 HCF/Month)



6.4. Combined Water & Wastewater Monthly Bill Comparisons

Figure 6-4 shows a comparison of sample single family residential combined monthly water and wastewater bills with neighboring utilities. All bills are calculated based on a 3/4-inch water meter size and monthly water use of 9 HCF. The wastewater portion of the current monthly bill assumes 7 HCF of winter average monthly water use. Estimated monthly bills based on both Ventura Water’s current FY 2020-21 and proposed FY 2021-22 water and wastewater rates are lower than most other agency bills at current FY 2020-21 rates.

Figure 6-4: Combined Monthly Bill Comparison for Single Family Residential (9 HCF/Month)



7. Appendix A: Ventura WaterPure

7.1. Ventura WaterPure Background

Ventura Water faces significant regulatory challenges related to discharge of wastewater from its wastewater treatment plant (the Ventura Water Reclamation Facility) into the Santa Clara River Estuary. The Consent Decree requires reduction in discharge to the Estuary and requires that no less than 50 percent of treated effluent be put to beneficial use. Reducing discharge to the Estuary and beneficially reusing the water is also a requirement of the VWRF NPDES Permit, the Water Quality Control Policy for the Enclosed Bays and Estuaries of California, and California's Recycled Water Policy. This information is detailed further in the Ventura Water Supply Projects Final Environmental Impact Report, which was certified by the Ventura City Council in October 2019.

The proposed solution is the Ventura WaterPure Program which will significantly reduce treated wastewater discharges to the Estuary and divert them to a new Advanced Water Purification Facility for indirect potable reuse. Indirect potable reuse refers to the process of taking tertiary treated wastewater and purifying it through an additional multi-step treatment regime to meet drinking water standards before injecting the purified water into the groundwater basin to augment the potable water supply. Injection into and residence time in the groundwater basin results in additional filtration and purification. Once the water is pumped from groundwater wells, it must then be treated and blended with other supplies before delivery to water customers. The concentrate (brine) byproduct of the advanced treatment process will require the construction of a brine line and ocean outfall.

Ventura WaterPure is a multi-benefit program that benefits both the water system by increasing local reliability of the groundwater supplies for current and future users, providing a drought-resilient water supply source, and improving water system water quality; and for the wastewater system by addressing the multiple regulatory and legal mandates of wastewater discharge and reuse. Raftelis recommends that Ventura WaterPure operating and capital costs be shared by the Water and Wastewater Enterprises based on the relative benefit to each enterprise.

All Ventura WaterPure operating costs, capital costs, and debt financing figures shown in this appendix are preliminary estimates based on the best available information at the time of this study. Actual project costs and timing may deviate from the projections presented in this study. However, it is necessary to incorporate reasonable cost estimates and the most likely financing strategy now due to the significant long-term costs that the project will impose, beginning in the current fiscal year.

7.2. Ventura WaterPure Capital Costs

Ventura WaterPure construction is separated into two phases: Phase 1A and Phase 1B. The projections presented in this appendix assume that Ventura WaterPure will become operational in FY 2025-26 upon completion of Phase 1A. Phase 1B consists of additional capital projects to be completed between FY 2026-27 and FY 2031-32, assuming Ventura WaterPure begins operations in FY 2025-26. Total Ventura WaterPure capital project costs through FY 2031-32 are projected at \$259.1M (see **Table 7-1** for details) and consist of the following projects:

- » **Advanced Water Purification Facility (AWPF):** a new facility to treat tertiary treated wastewater effluent from the Ventura Water Reclamation Facility (VWRF) to higher water quality standards
- » **Land:** land acquisitions required to site the AWPF

- » **Injection/Extraction Wells:** inject treated water from the AWPF into the local groundwater basin and extract later after the required residence time
- » **Pipelines:** to convey treated water from the AWPF to the injection wells
- » **Pump Stations:** required to transport water at multiple steps in the Ventura WaterPure Program, including to transport treated water from the AWPF to the injection wells sites
- » **Outfall:** new infrastructure to discharge treated wastewater from the VWRF and brine produced from the AWPF to the Pacific Ocean
- » **Wetlands Improvements:** required to treat and improve the water quality of any remaining discharge before it is discharged to the Santa Clara River Estuary

Table 7-1: VenturaWaterPure Capital Costs

Fiscal Year	Injection/ Extraction Wells (97934)	Pump Stations (73122)	AWPF (96945)	Pipeline (96940)	Wetlands Improvements (96939)	Outfall (96938)	Land (96935)	Year Total
FY 2019-20	\$159,000	\$0	\$2,050,000	\$240,000	\$230,000	\$350,000	\$65,000	\$3,094,000
FY 2020-21	\$700,000	\$75,000	\$1,450,000	\$950,000	\$0	\$750,000	\$200,000	\$4,125,000
FY 2021-22	\$1,000,000	\$500,000	\$5,000,000	\$1,600,000	\$0	\$1,900,000	\$4,735,000	\$14,735,000
FY 2022-23	\$2,000,000	\$700,000	\$7,000,000	\$2,000,000	\$0	\$2,500,000	\$0	\$14,200,000
FY 2023-24	\$2,500,000	\$700,000	\$7,000,000	\$2,000,000	\$0	\$2,500,000	\$0	\$14,700,000
FY 2024-25	\$11,500,000	\$3,400,000	\$42,000,000	\$12,000,000	\$0	\$14,000,000	\$0	\$82,900,000
FY 2025-26	\$11,500,000	\$3,400,000	\$42,000,000	\$12,000,000	\$0	\$14,000,000	\$0	\$82,900,000
FY 2026-27	\$1,600,000	\$300,000	\$1,500,000	\$0	\$0	\$0	\$0	\$3,400,000
FY 2027-28	\$1,600,000	\$300,000	\$1,500,000	\$0	\$0	\$0	\$0	\$3,400,000
FY 2028-29	\$5,700,000	\$1,100,000	\$5,000,000	\$0	\$0	\$0	\$0	\$11,800,000
FY 2029-30	\$5,700,000	\$1,100,000	\$5,000,000	\$0	\$500,000	\$0	\$0	\$12,300,000
FY 2030-31	\$0	\$0	\$0	\$0	\$500,000	\$0	\$0	\$500,000
FY 2031-32	\$0	\$0	\$0	\$0	\$11,070,000	\$0	\$0	\$11,070,000
Project Total	\$43,959,000	\$11,575,000	\$119,500,000	\$30,790,000	\$12,300,000	\$36,000,000	\$5,000,000	\$259,124,000

7.3. VenturaWaterPure Capital Financing Plan

Ventura Water is pursuing multiple funding sources for VenturaWaterPure capital projects. Debt financing options include a Water Infrastructure Finance and Innovation Act (WIFIA) loan, Clean Water State Revolving Fund (SRF) loan, and revenue bonds. The WIFIA program accelerates investment in the nation’s infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects. In 2020, Ventura Water submitted a letter of interest for a WIFIA loan for VenturaWaterPure. In January 2021, the U.S. Environmental Protection Agency announced that VenturaWaterPure was officially selected for Ventura Water to apply for up to a \$125 million loan. Ventura Water will be submitting the WIFIA application for VenturaWaterPure later in 2021. Additional funding sources include grants and rates/reserves (pay-as-you-go). Raftelis worked with Ventura Water staff to develop a funding scenario for incorporating into the ten-year financial plans and the rate study.

Table 7-2 shows debt financing assumptions for each type of instrument used. The assumptions include interest rate, the term of the financing, any costs of issuance, and notes on specific repayment or modeling assumptions for individual instruments. For example, not only do WIFIA and SRF loans have favorable terms, but also allow for deferred repayment corresponding to substantial completion of the project. The financing strategy most likely to be used to fund Phase 1B construction is difficult to project at this time. Therefore, Phase 1B debt assumptions represent an averaging of SRF and revenue bond assumptions.

Table 7-2: VenturaWaterPure Debt Financing Assumptions

Funding Options	Interest Rate	Term (Years)	Issuance Costs	Notes
WIFIA Loans	2.0%	35	0.0%	Principal repayment begins one year after completion of Phase 1A construction
SRF Loans	2.0%	30	0.0%	Principal repayment begins one year after completion of Phase 1A construction
Revenue Bonds	5.0%	30	2.0%	Assumes level principal plus interest payments each year over life of loan
Phase 1B Debt	3.5%	30	2.0%	Principal repayment begins one year after completion of Phase 1B construction

Table 7-3 shows assumed use of funds, by source, for VenturaWaterPure capital costs in each year. Raftelis developed this funding scenario based on input and direction from City staff.

Table 7-3: VenturaWaterPure Capital Funding Sources

Fiscal Year	Grants	WIFIA Loan Proceeds	SRF Loan Proceeds	Revenue Bond Proceeds	Phase 1B Debt Proceeds	Pay-as-you-go	Year Total
FY 2019-20	\$0	\$0	\$0	\$0	\$0	\$3,094,000	\$3,094,000
FY 2020-21	\$0	\$0	\$0	\$0	\$0	\$4,125,000	\$4,125,000
FY 2021-22	\$0	\$10,000,000	\$0	\$0	\$0	\$4,735,000	\$14,735,000
FY 2022-23	\$0	\$14,200,000	\$0	\$0	\$0	\$0	\$14,200,000
FY 2023-24	\$0	\$14,700,000	\$0	\$0	\$0	\$0	\$14,700,000
FY 2024-25	\$0	\$64,697,760	\$8,202,240	\$0	\$0	\$0	\$82,900,000
FY 2025-26	\$10,000,000	\$0	\$57,339,200	\$15,560,800	\$0	\$0	\$82,900,000
FY 2026-27	\$10,000,000	\$0	\$0	\$0	\$3,400,000	\$0	\$3,400,000
FY 2027-28	\$0	\$0	\$0	\$0	\$3,400,000	\$0	\$3,400,000
FY 2028-29	\$0	\$0	\$0	\$0	\$11,800,000	\$0	\$11,800,000
FY 2029-30	\$0	\$0	\$0	\$0	\$11,800,000	\$500,000	\$12,300,000
FY 2030-31	\$0	\$0	\$0	\$0	\$0	\$500,000	\$500,000
FY 2031-32	\$0	\$0	\$0	\$0	\$0	\$11,070,000	\$11,070,000
Total	\$20,000,000	\$103,597,760	\$65,541,440	\$15,560,800	\$30,400,000	\$24,024,000	\$259,124,000

Table 7-4 summarizes total VenturaWaterPure capital costs by funding source.

Table 7-4: VenturaWaterPure Funding Summary

Funding Summary	Total Amount	% of Total
Grants	\$20,000,000	7.7%
WIFIA Loan	\$103,597,760	40.0%
SRF Loan	\$65,541,440	25.3%
Bonds	\$15,560,800	6.0%
Phase 1B Loans	\$30,400,000	11.7%
PAYGO	\$24,024,000	9.3%
Total	\$259,124,000	100.0%

Table 7-5 shows the projected debt (or loan) service for each instrument in Phase 1A, the assumed funding mix in Phase 1B, and pay-as-you-go funding. The individual debt services and repayment schedules are calculated by the Raftelis Excel Model using the terms and assumptions previously discussed. Debt service is inclusive of principal and interest as well as deferred repayments and capitalized interest.

Table 7-5: VenturaWaterPure Financing Costs

Fiscal Year	WIFIA Debt Service	SRF Debt Service	Bond Debt Service	Phase 1B Debt Service	Pay-as-you- go	Year Total
FY 2019-20	\$0	\$0	\$0	\$0	\$3,094,000	\$3,094,000
FY 2020-21	\$0	\$0	\$0	\$0	\$4,125,000	\$4,125,000
FY 2021-22	\$200,000	\$0	\$0	\$0	\$4,735,000	\$4,935,000
FY 2022-23	\$484,000	\$0	\$0	\$0	\$0	\$484,000
FY 2023-24	\$778,000	\$0	\$0	\$0	\$0	\$778,000
FY 2024-25	\$2,071,955	\$164,045	\$0	\$0	\$0	\$2,236,000
FY 2025-26	\$2,071,955	\$1,310,829	\$1,032,911	\$0	\$0	\$4,415,695
FY 2026-27	\$4,144,139	\$2,926,420	\$1,032,911	\$1,085,714	\$0	\$9,189,184
FY 2027-28	\$4,144,139	\$2,926,420	\$1,032,911	\$1,085,714	\$0	\$9,189,184
FY 2028-29	\$4,144,139	\$2,926,420	\$1,032,911	\$1,085,714	\$0	\$9,189,184
FY 2029-30	\$4,144,139	\$2,926,420	\$1,032,911	\$1,085,714	\$500,000	\$9,689,184
FY 2030-31	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$500,000	\$10,290,091
FY 2031-32	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$11,070,000	\$20,860,091
FY 2032-33	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2033-34	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2034-35	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2035-36	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2036-37	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2037-38	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2038-39	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2039-40	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2040-41	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2041-42	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2042-43	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2043-44	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2044-45	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2045-46	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2046-47	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2047-48	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2048-49	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2049-50	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2050-51	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2051-52	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2052-53	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2053-54	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2054-55	\$4,144,139	\$2,926,420	\$1,032,911	\$1,686,621	\$0	\$9,790,091
FY 2055-56	\$4,144,139	\$2,926,420	\$0	\$1,686,621	\$0	\$8,757,180
FY 2056-57	\$4,144,139	\$0	\$0	\$1,686,621	\$0	\$5,830,760
FY 2057-58	\$4,144,139	\$0	\$0	\$1,686,621	\$0	\$5,830,760
FY 2058-59	\$4,144,139	\$0	\$0	\$1,686,621	\$0	\$5,830,760
FY 2059-60	\$4,144,139	\$0	\$0	\$1,686,621	\$0	\$5,830,760
FY 2060-61	\$4,144,139	\$0	\$0	\$0	\$0	\$4,144,139
Total	\$150,650,785	\$89,267,480	\$30,987,317	\$54,941,484	\$24,024,000	\$349,871,066

7.4. VenturaWaterPure Capital Cost Allocation

VenturaWaterPure provides benefits to both the water and wastewater systems and is therefore proposed to be jointly funded. We developed several rationales for allocating a project component, for example, based on the length of pipeline benefiting each enterprise. Raffetis worked with Ventura Water staff to equitably allocate capital costs between the Water and Wastewater Enterprises based on the most appropriate rationale. **Table 7-6** shows the proposed allocation basis used to allocate each component of the VenturaWaterPure Program capital projects between the Water Enterprise and Wastewater Enterprise. Two of the project components wholly benefit one enterprise and are therefore allocated 100 percent to either water or wastewater. The result is a percentage allocation attributable to each enterprise. This percentage is used as the basis to allocate the future debt and loan service costs (modified to account for PAYGO capital costs) as well as for future VenturaWaterPure O&M costs.

Table 7-6: VenturaWaterPure Capital Cost Allocation Basis

VenturaWaterPure Capital Projects	Allocation Basis	Water Allocation (%)	Wastewater Allocation (%)	Water Allocation (\$)	Wastewater Allocation (\$)	Total (\$)
Injection/Extraction Wells (97934)	<i>Relates to Water Enterprise only</i>	100.0%	0.0%	\$43,959,000	\$0	\$43,959,000
Pump Stations (73122)	<i>Share of pumping stations benefiting Water Enterprise versus Wastewater Enterprise</i>	50.0%	50.0%	\$5,787,500	\$5,787,500	\$11,575,000
AWPF (96945)	<i>Minimum of 50% of wastewater discharge must be put to beneficial use</i>	50.0%	50.0%	\$59,750,000	\$59,750,000	\$119,500,000
Pipeline (96940)	<i>Length of pipelines benefiting Water Enterprise versus Wastewater Enterprise</i>	67.0%	33.0%	\$20,629,300	\$10,160,700	\$30,790,000
Wetlands Improvements (96939)	<i>Relates to Wastewater Enterprise only</i>	0.0%	100.0%	\$0	\$12,300,000	\$12,300,000
Outfall (96938)	<i>Share of required outfall flow associated with AWPF versus VWRP</i>	50.0%	50.0%	\$18,000,000	\$18,000,000	\$36,000,000
Land (96935)	<i>Same as AWPF</i>	50.0%	50.0%	\$2,500,000	\$2,500,000	\$5,000,000
Total		58.1%	41.9%	\$150,625,800	\$108,498,200	\$259,124,000

Table 7-7 shows the proposed allocation of VenturaWaterPure capital project costs to the Water Enterprise based on the allocation basis defined in Table 7-6.

Table 7-7: VenturaWaterPure Capital Cost Allocation to Water Enterprise

Fiscal Year	Injection/ Extraction Wells (97934)	Pump Stations (73122)	AWPF (96945)	Pipeline (96940)	Wetlands (96939)	Outfall (96938)	Land (96935)	Year Total
FY 2019-20	\$159,000	\$0	\$1,025,000	\$160,800	\$0	\$175,000	\$32,500	\$1,552,300
FY 2020-21	\$700,000	\$37,500	\$725,000	\$636,500	\$0	\$375,000	\$100,000	\$2,574,000
FY 2021-22	\$1,000,000	\$250,000	\$2,500,000	\$1,072,000	\$0	\$950,000	\$2,367,500	\$8,139,500
FY 2022-23	\$2,000,000	\$350,000	\$3,500,000	\$1,340,000	\$0	\$1,250,000	\$0	\$8,440,000
FY 2023-24	\$2,500,000	\$350,000	\$3,500,000	\$1,340,000	\$0	\$1,250,000	\$0	\$8,940,000
FY 2024-25	\$11,500,000	\$1,700,000	\$21,000,000	\$8,040,000	\$0	\$7,000,000	\$0	\$49,240,000
FY 2025-26	\$11,500,000	\$1,700,000	\$21,000,000	\$8,040,000	\$0	\$7,000,000	\$0	\$49,240,000
FY 2026-27	\$1,600,000	\$150,000	\$750,000	\$0	\$0	\$0	\$0	\$2,500,000
FY 2027-28	\$1,600,000	\$150,000	\$750,000	\$0	\$0	\$0	\$0	\$2,500,000
FY 2028-29	\$5,700,000	\$550,000	\$2,500,000	\$0	\$0	\$0	\$0	\$8,750,000
FY 2029-30	\$5,700,000	\$550,000	\$2,500,000	\$0	\$0	\$0	\$0	\$8,750,000
FY 2030-31	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FY 2031-32	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Project Total	\$43,959,000	\$5,787,500	\$59,750,000	\$20,629,300	\$0	\$18,000,000	\$2,500,000	\$150,625,800

Table 7-8 shows the proposed allocation of VenturaWaterPure capital project costs to the Wastewater Enterprise based on the allocation basis defined in Table 7-6.

Table 7-8: VenturaWaterPure Capital Cost Allocation to Wastewater Enterprise

Fiscal Year	Injection/ Extraction Wells (97934)	Pump Stations (73122)	AWPF (96945)	Pipeline (96940)	Wetlands (96939)	Outfall (96938)	Land (96935)	Year Total
FY 2019-20	\$0	\$0	\$1,025,000	\$79,200	\$230,000	\$175,000	\$32,500	\$1,541,700
FY 2020-21	\$0	\$37,500	\$725,000	\$313,500	\$0	\$375,000	\$100,000	\$1,551,000
FY 2021-22	\$0	\$250,000	\$2,500,000	\$528,000	\$0	\$950,000	\$2,367,500	\$6,595,500
FY 2022-23	\$0	\$350,000	\$3,500,000	\$660,000	\$0	\$1,250,000	\$0	\$5,760,000
FY 2023-24	\$0	\$350,000	\$3,500,000	\$660,000	\$0	\$1,250,000	\$0	\$5,760,000
FY 2024-25	\$0	\$1,700,000	\$21,000,000	\$3,960,000	\$0	\$7,000,000	\$0	\$33,660,000
FY 2025-26	\$0	\$1,700,000	\$21,000,000	\$3,960,000	\$0	\$7,000,000	\$0	\$33,660,000
FY 2026-27	\$0	\$150,000	\$750,000	\$0	\$0	\$0	\$0	\$900,000
FY 2027-28	\$0	\$150,000	\$750,000	\$0	\$0	\$0	\$0	\$900,000
FY 2028-29	\$0	\$550,000	\$2,500,000	\$0	\$0	\$0	\$0	\$3,050,000
FY 2029-30	\$0	\$550,000	\$2,500,000	\$0	\$500,000	\$0	\$0	\$3,550,000
FY 2030-31	\$0	\$0	\$0	\$0	\$500,000	\$0	\$0	\$500,000
FY 2031-32	\$0	\$0	\$0	\$0	\$11,070,000	\$0	\$0	\$11,070,000
Project Total	\$0	\$5,787,500	\$59,750,000	\$10,160,700	\$12,300,000	\$18,000,000	\$2,500,000	\$108,498,200

Table 7-9 shows proposed funding sources and use of funds for the Water Enterprise’s share of VenturaWaterPure capital costs.

Table 7-9: VenturaWaterPure Funding Sources for Water Enterprise Capital Allocation

Fiscal Year	Grants	WIFIA Loan Proceeds	SRF Loan Proceeds	Bond Proceeds	Phase 1B Debt Proceeds	Pay-as-you-go	Year Total
FY 2019-20	\$0	\$0	\$0	\$0	\$0	\$1,552,300	\$1,552,300
FY 2020-21	\$0	\$0	\$0	\$0	\$0	\$2,574,000	\$2,574,000
FY 2021-22	\$0	\$5,772,000	\$0	\$0	\$0	\$2,367,500	\$8,139,500
FY 2022-23	\$0	\$8,440,000	\$0	\$0	\$0	\$0	\$8,440,000
FY 2023-24	\$0	\$8,940,000	\$0	\$0	\$0	\$0	\$8,940,000
FY 2024-25	\$0	\$38,540,975	\$4,886,140	\$0	\$0	\$0	\$49,240,000
FY 2025-26	\$5,812,885	\$0	\$34,157,422	\$9,269,693	\$0	\$0	\$49,240,000
FY 2026-27	\$5,812,885	\$0	\$0	\$0	\$2,500,000	\$0	\$2,500,000
FY 2027-28	\$0	\$0	\$0	\$0	\$2,500,000	\$0	\$2,500,000
FY 2028-29	\$0	\$0	\$0	\$0	\$8,750,000	\$0	\$8,750,000
FY 2029-30	\$0	\$0	\$0	\$0	\$8,750,000	\$0	\$8,750,000
FY 2030-31	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FY 2031-32	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$11,625,770	\$61,692,975	\$39,043,562	\$9,269,693	\$22,500,000	\$6,493,800	\$150,625,800

Table 7-10 shows proposed funding sources and use of funds for the Wastewater Enterprise’s share of Ventura WaterPure capital costs.

Table 7-10: VenturaWaterPure Funding Sources for Wastewater Enterprise Capital Allocation

Fiscal Year	Grants	WIFIA Loan Proceeds	SRF Loan Proceeds	Bond Proceeds	Phase 1B Debt Proceeds	Pay-as-you-go	Year Total
FY 2019-20	\$0	\$0	\$0	\$0	\$0	\$1,541,700	\$1,541,700
FY 2020-21	\$0	\$0	\$0	\$0	\$0	\$1,551,000	\$1,551,000
FY 2021-22	\$0	\$4,228,000	\$0	\$0	\$0	\$2,367,500	\$6,595,500
FY 2022-23	\$0	\$5,760,000	\$0	\$0	\$0	\$0	\$5,760,000
FY 2023-24	\$0	\$5,760,000	\$0	\$0	\$0	\$0	\$5,760,000
FY 2024-25	\$0	\$26,156,785	\$3,316,100	\$0	\$0	\$0	\$33,660,000
FY 2025-26	\$4,187,115	\$0	\$23,181,778	\$6,291,107	\$0	\$0	\$33,660,000
FY 2026-27	\$4,187,115	\$0	\$0	\$0	\$900,000	\$0	\$900,000
FY 2027-28	\$0	\$0	\$0	\$0	\$900,000	\$0	\$900,000
FY 2028-29	\$0	\$0	\$0	\$0	\$3,050,000	\$0	\$3,050,000
FY 2029-30	\$0	\$0	\$0	\$0	\$3,050,000	\$500,000	\$3,550,000
FY 2030-31	\$0	\$0	\$0	\$0	\$0	\$500,000	\$500,000
FY 2031-32	\$0	\$0	\$0	\$0	\$0	\$11,070,000	\$11,070,000
Total	\$8,374,230	\$41,904,785	\$26,497,878	\$6,291,107	\$7,900,000	\$17,530,200	\$108,498,200

Table 7-11 shows the proposed allocation of debt service between the Water and Wastewater Enterprises based on the proportion of debt proceeds utilized by each enterprise. A greater proportion of Ventura Water CIP allocated to the Water Enterprise is assumed to be debt financed. This is due primarily to the assumption that Wetlands Improvements costs (which are allocated entirely to the Wastewater Enterprise) will be funded via pay-as-you-go. Additionally, a majority of Phase 1B CIP is allocated to the Water Enterprise, resulting in an allocation of 74 percent of Phase 1B debt service to the Water Enterprise. This is because nearly half of all Phase 1B CIP is associated with injection/extraction wells, which are allocated entirely to the Water Enterprise.

Table 7-11: VenturaWaterPure Funding Sources for Wastewater Enterprise Capital Allocation

Funding Source [A]	Water Enterprise Debt_Proceeds [B]	Wastewater Enterprise Debt_Proceeds [C]	Total Proceeds [D]	Water Enterprise Debt Service Allocation [E = B ÷ D]	Wastewater Enterprise Debt Service Allocation [F = C ÷ D]
WIFIA Loan	\$61,692,975	\$41,904,785	\$103,597,760	59.6%	40.4%
SRF Loan	\$39,043,562	\$26,497,878	\$65,541,440	59.6%	40.4%
Bonds	\$9,269,693	\$6,291,107	\$15,560,800	59.6%	40.4%
Phase 1B Loan	\$22,500,000	\$7,900,000	\$30,400,000	74.0%	26.0%

Table 7-12 shows the Water Enterprise’s projected share of VenturaWaterPure debt service (based on the allocation basis defined in Table 7-11) and pay-as-you-go funding.

Table 7-12: VenturaWaterPure Water Enterprise Financing Costs

Fiscal Year	WIFIA Debt Service	SRF Debt Service	Bond Debt Service	Phase 1B Debt Service	Pay-as-you-go	Year Total
FY 2019-20	\$0	\$0	\$0	\$0	\$1,552,300	\$1,552,300
FY 2020-21	\$0	\$0	\$0	\$0	\$2,574,000	\$2,574,000
FY 2021-22	\$119,101	\$0	\$0	\$0	\$2,367,500	\$2,486,601
FY 2022-23	\$288,224	\$0	\$0	\$0	\$0	\$288,224
FY 2023-24	\$463,303	\$0	\$0	\$0	\$0	\$463,303
FY 2024-25	\$1,233,859	\$97,723	\$0	\$0	\$0	\$1,331,582
FY 2025-26	\$1,233,859	\$780,871	\$615,313	\$0	\$0	\$2,630,044
FY 2026-27	\$2,467,855	\$1,743,292	\$615,313	\$803,571	\$0	\$5,630,032
FY 2027-28	\$2,467,855	\$1,743,292	\$615,313	\$803,571	\$0	\$5,630,032
FY 2028-29	\$2,467,855	\$1,743,292	\$615,313	\$803,571	\$0	\$5,630,032
FY 2029-30	\$2,467,855	\$1,743,292	\$615,313	\$803,571	\$0	\$5,630,032
FY 2030-31	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2031-32	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2032-33	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2033-34	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2034-35	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2035-36	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2036-37	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2037-38	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2038-39	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2039-40	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2040-41	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2041-42	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2042-43	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2043-44	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2044-45	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2045-46	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2046-47	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2047-48	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2048-49	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2049-50	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2050-51	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2051-52	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2052-53	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2053-54	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2054-55	\$2,467,855	\$1,743,292	\$615,313	\$1,248,321	\$0	\$6,074,782
FY 2055-56	\$2,467,855	\$1,743,292	\$0	\$1,248,321	\$0	\$5,459,469
FY 2056-57	\$2,467,855	\$0	\$0	\$1,248,321	\$0	\$3,716,177
FY 2057-58	\$2,467,855	\$0	\$0	\$1,248,321	\$0	\$3,716,177
FY 2058-59	\$2,467,855	\$0	\$0	\$1,248,321	\$0	\$3,716,177
FY 2059-60	\$2,467,855	\$0	\$0	\$1,248,321	\$0	\$3,716,177
FY 2060-61	\$2,467,855	\$0	\$0	\$0	\$0	\$2,467,855
Total	\$89,713,282	\$53,177,354	\$18,459,394	\$40,663,927	\$6,493,800	\$208,507,757

Table 7-13 shows the Wastewater Enterprise’s projected share of VenturaWaterPure debt service (based on the allocation basis defined in Table 7-11) and pay-as-you-go funding.

Table 7-13: VenturaWaterPure Wastewater Enterprise Financing Costs

Fiscal Year	WIFIA Debt Service	SRF Debt Service	Bond Debt Service	Phase 1B Debt Service	Pay-as-you- go	Year Total
FY 2019-20	\$0	\$0	\$0	\$0	\$1,541,700	\$1,541,700
FY 2020-21	\$0	\$0	\$0	\$0	\$1,551,000	\$1,551,000
FY 2021-22	\$80,899	\$0	\$0	\$0	\$2,367,500	\$2,448,399
FY 2022-23	\$195,776	\$0	\$0	\$0	\$0	\$195,776
FY 2023-24	\$314,697	\$0	\$0	\$0	\$0	\$314,697
FY 2024-25	\$838,096	\$66,322	\$0	\$0	\$0	\$904,418
FY 2025-26	\$838,096	\$529,958	\$417,597	\$0	\$0	\$1,785,651
FY 2026-27	\$1,676,284	\$1,183,128	\$417,597	\$282,143	\$0	\$3,559,153
FY 2027-28	\$1,676,284	\$1,183,128	\$417,597	\$282,143	\$0	\$3,559,153
FY 2028-29	\$1,676,284	\$1,183,128	\$417,597	\$282,143	\$0	\$3,559,153
FY 2029-30	\$1,676,284	\$1,183,128	\$417,597	\$282,143	\$500,000	\$4,059,153
FY 2030-31	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$500,000	\$4,215,309
FY 2031-32	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$11,070,000	\$14,785,309
FY 2032-33	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2033-34	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2034-35	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2035-36	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2036-37	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2037-38	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2038-39	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2039-40	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2040-41	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2041-42	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2042-43	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2043-44	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2044-45	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2045-46	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2046-47	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2047-48	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2048-49	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2049-50	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2050-51	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2051-52	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2052-53	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2053-54	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2054-55	\$1,676,284	\$1,183,128	\$417,597	\$438,300	\$0	\$3,715,309
FY 2055-56	\$1,676,284	\$1,183,128	\$0	\$438,300	\$0	\$3,297,712
FY 2056-57	\$1,676,284	\$0	\$0	\$438,300	\$0	\$2,114,583
FY 2057-58	\$1,676,284	\$0	\$0	\$438,300	\$0	\$2,114,583
FY 2058-59	\$1,676,284	\$0	\$0	\$438,300	\$0	\$2,114,583
FY 2059-60	\$1,676,284	\$0	\$0	\$438,300	\$0	\$2,114,583
FY 2060-61	\$1,676,284	\$0	\$0	\$0	\$0	\$1,676,284
Total	\$60,937,503	\$36,090,126	\$12,527,924	\$14,277,557	\$17,530,200	\$141,363,309

7.5. Ventura WaterPure Operating Costs

New O&M expenses for Ventura WaterPure operations are minimal prior to commencement of operations in FY 2025-26. Additional O&M expenses are projected for additional staffing, equipment, and other resources for Ventura WaterPure operations. Ventura Water staff provided the projected Ventura WaterPure additional O&M expenses shown in **Table 7-14** and Raftelis worked with staff and the Water Commission to refine the O&M estimates.

Table 7-14: Ventura WaterPure Additional O&M Expenses

Fiscal Year	Salaries	Benefits	Workers Compensation	Office Supplies, Technology, Training, etc.	New Vehicles	Year Total
FY 2019-20	\$0	\$0	\$0	\$0	\$0	\$0
FY 2020-21	\$61,013	\$24,782	\$189	\$0	\$0	\$85,984
FY 2021-22	\$255,969	\$114,622	\$3,384	\$92,700	\$0	\$466,675
FY 2022-23	\$265,875	\$119,058	\$3,514	\$95,481	\$0	\$483,929
FY 2023-24	\$275,267	\$123,264	\$3,639	\$98,345	\$0	\$500,514
FY 2024-25	\$284,981	\$127,614	\$3,767	\$101,296	\$0	\$517,658
FY 2025-26	\$2,085,083	\$892,061	\$45,756	\$2,839,990	\$747,732	\$6,610,620
FY 2026-27	\$2,157,586	\$923,079	\$47,347	\$2,925,189	\$0	\$6,053,201
FY 2027-28	\$2,232,610	\$955,177	\$48,993	\$2,988,348	\$0	\$6,225,128
FY 2028-29	\$2,310,243	\$988,391	\$50,697	\$3,077,998	\$0	\$6,427,328
FY 2029-30	\$2,390,575	\$1,022,759	\$52,460	\$3,170,338	\$0	\$6,636,132

7.6. Ventura WaterPure Operating Cost Allocation

Table 7-15 shows the allocation of projected Ventura WaterPure O&M expenses to each enterprise based on the overall allocation of total Ventura WaterPure capital project costs (from **Table 7-6**).

Table 7-15: Ventura WaterPure Additional O&M Expenses

Fiscal Year	Additional Water Enterprise O&M (58.1% of Total)	Additional Wastewater Enterprise O&M (41.9% of Total)	Total Additional O&M
FY 2019-20	\$0	\$0	\$0
FY 2020-21	\$49,981	\$36,002	\$85,984
FY 2021-22	\$271,273	\$195,402	\$466,675
FY 2022-23	\$281,302	\$202,627	\$483,929
FY 2023-24	\$290,943	\$209,571	\$500,514
FY 2024-25	\$300,908	\$216,749	\$517,658
FY 2025-26	\$3,842,678	\$2,767,943	\$6,610,620
FY 2026-27	\$3,518,656	\$2,534,545	\$6,053,201
FY 2027-28	\$3,618,595	\$2,606,533	\$6,225,128
FY 2028-29	\$3,736,132	\$2,691,196	\$6,427,328
FY 2029-30	\$3,857,507	\$2,778,625	\$6,636,132

7.7. VenturaWaterPure Cost Contribution to Financial Plans

Table 7-16 summarizes VenturaWaterPure’s cost contribution to the proposed Water Enterprise financial plan in Section 4.2.

Table 7-16: VenturaWaterPure Cost Contribution to Water Enterprise Financial Plan

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
VenturaWaterPure O&M Expenses – Water Enterprise Allocation						
Additional O&M	\$49,981	\$271,273	\$281,302	\$290,943	\$300,908	\$3,842,678
Subtotal	\$49,981	\$271,273	\$281,302	\$290,943	\$300,908	\$3,842,678
VenturaWaterPure Debt Service – Water Enterprise Allocation						
WIFIA Loan	\$0	\$119,101	\$288,224	\$463,303	\$1,233,859	\$1,233,859
SRF Loan	\$0	\$0	\$0	\$0	\$97,723	\$780,871
Revenue Bond	\$0	\$0	\$0	\$0	\$0	\$615,313
Phase 1B Loan	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$119,101	\$288,224	\$463,303	\$1,331,582	\$2,630,044
VenturaWaterPure Additional Operating Costs (incl. Debt Service) – Water Enterprise Allocation						
O&M/Debt Service	\$49,981	\$390,374	\$569,527	\$754,246	\$1,632,491	\$6,472,721
VenturaWaterPure Capital Projects – Water Enterprise Allocation						
Grant Funded	\$0	\$0	\$0	\$0	\$5,812,885	\$5,812,885
Debt Funded	\$0	\$5,772,000	\$8,440,000	\$8,940,000	\$43,427,115	\$43,427,115
Pay-as-you-go	\$2,574,000	\$2,367,500	\$0	\$0	\$0	\$0
Total CIP	\$2,574,000	\$8,139,500	\$8,440,000	\$8,940,000	\$49,240,000	\$49,240,000

Table 7-17 summarizes VenturaWaterPure’s cost contribution to the proposed Wastewater Enterprise financial plan in Section 5.2.

Table 7-17: VenturaWaterPure Cost Contribution to Wastewater Enterprise Financial Plan

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26
VenturaWaterPure O&M Expenses – Wastewater Enterprise Allocation						
Additional O&M	\$36,002	\$195,402	\$202,627	\$209,571	\$216,749	\$2,767,943
Subtotal	\$36,002	\$195,402	\$202,627	\$209,571	\$216,749	\$2,767,943
VenturaWaterPure Debt Service – Wastewater Enterprise Allocation						
WIFIA Loan	\$0	\$80,899	\$195,776	\$314,697	\$838,096	\$838,096
SRF Loan	\$0	\$0	\$0	\$0	\$66,322	\$529,958
Revenue Bond	\$0	\$0	\$0	\$0	\$0	\$417,597
Phase 1B Loan	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$80,899	\$195,776	\$314,697	\$904,418	\$1,785,651
VenturaWaterPure Additional Operating Costs (incl. Debt Service) – Wastewater Enterprise Allocation						
O&M/Debt Service	\$36,002	\$276,301	\$398,402	\$524,268	\$1,121,167	\$4,553,594
VenturaWaterPure Capital Projects – Wastewater Enterprise Allocation						
Grant Funded	\$0	\$0	\$0	\$0	\$4,187,115	\$4,187,115
Debt Funded	\$0	\$4,228,000	\$5,760,000	\$5,760,000	\$29,472,885	\$29,472,885
Pay-as-you-go	\$1,551,000	\$2,367,500	\$0	\$0	\$0	\$0
Total CIP	\$1,551,000	\$6,595,500	\$5,760,000	\$5,760,000	\$33,660,000	\$33,660,000

8. Appendix B: Ten-Year Water Enterprise Financial Plan

Raftelis evaluated proposed financial plan options with Ventura Water staff and the Water Commission based on a ten-year planning horizon through FY 2029-30. Because the proposed water rate schedule presented in this report is for the next five fiscal years only, financial plan results shown in **Section 4.2** only extend through FY 2025-26 for display purposes and to improve clarity. **Appendix B** provides ten-year Water Enterprise financial plan projections as a supplement. Note that all revenue adjustments and proposed debt issuances (to finance CIP exclusive of Ventura Pure) shown below beyond FY 2025-26 are for planning purposes only and will be revisited during the next rate study (to establish proposed water rates beyond FY 2025-26).

The ten-year financial projections are based on the same set of assumptions as the five-year financial projections and are based on the best data available at the time of this Study. Assumptions become less reliable and more uncertain over a long time horizon and new and refined data becomes available; additionally Proposition 218 only allows agencies to adopt and implement rates for a maximum period of five years. Actual revenue requirements for fiscal years beyond FY 2025-26 will be determined in the next five-year rate study. Depending on actual revenues and expenses incurred during this five-year rate setting period, projected revenue increases in years 6-10 year may be able to be reduced from today's estimates. Items which will impact years 6-10 include future water supply and demand conditions, actual capital costs incurred, actual cost inflation, future debt terms, as well as future SRF and WIFIA deferral and repayment schedules.

Table 8-1: Ten-Year Water Enterprise Financial Plan Assumptions

Fiscal Year	Revenue Adjustment	Proposed Debt Issuance (excl. Ventura WaterPure) ⁹⁸	Notes
FY 2020-21	N/A	\$0	Current Fiscal Year
FY 2021-22	7.0%	\$0	Proposed
FY 2022-23	7.0%	\$0	Proposed
FY 2023-24	7.0%	\$0	Proposed
FY 2024-25	7.0%	\$0	Proposed
FY 2025-26	7.0%	\$0	Proposed
FY 2026-27	7.0%	\$15,000,000	For planning purposes only
FY 2027-28	7.0%	\$0	For planning purposes only
FY 2028-29	7.0%	\$10,000,000	For planning purposes only
FY 2029-30	7.0%	\$0	For planning purposes only

⁹⁸ All proposed debt issuances shown beyond FY 2025-26 are to finance CIP exclusive of Ventura WaterPure. Annual debt service is estimated based on an assumed 5% interest rate for 30-year bond with 2% issuance costs.

Figure 8-1: 10-Year Water Enterprise Capital Improvement Plan (incl. VenturaWaterPure)

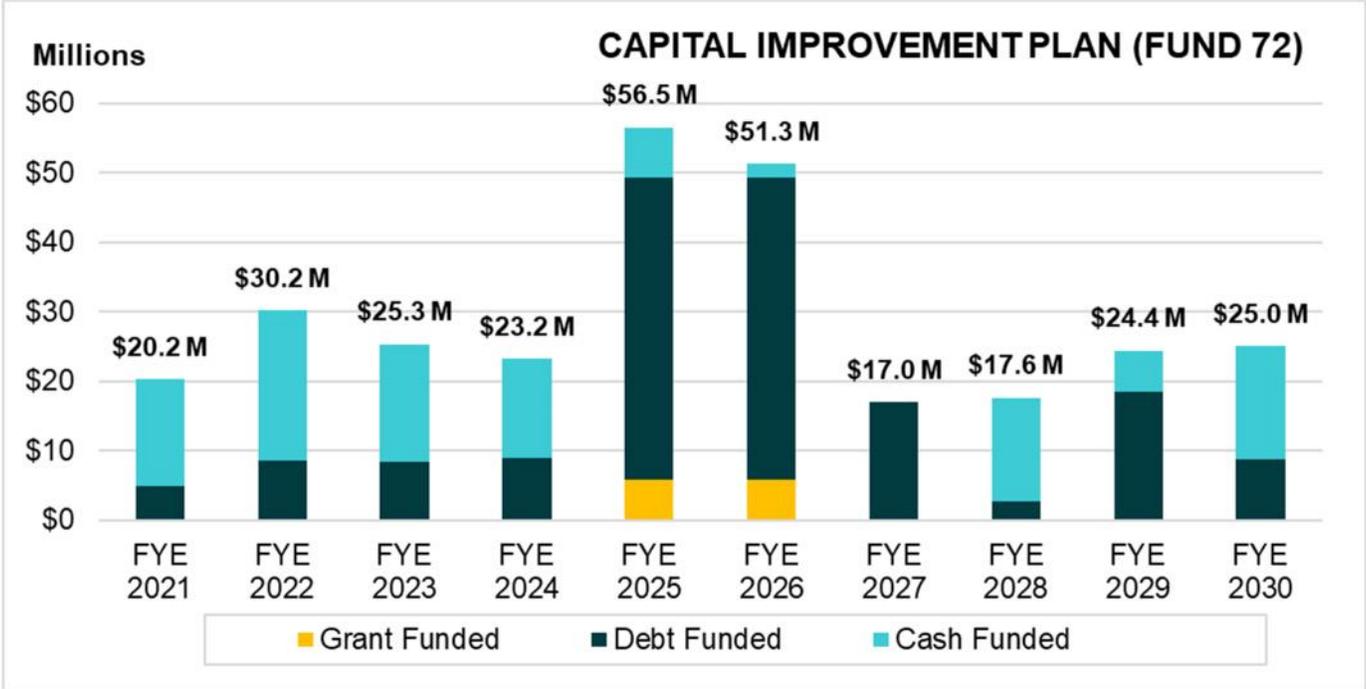


Figure 8-2: 10-Year Water Enterprise Debt Coverage Projections

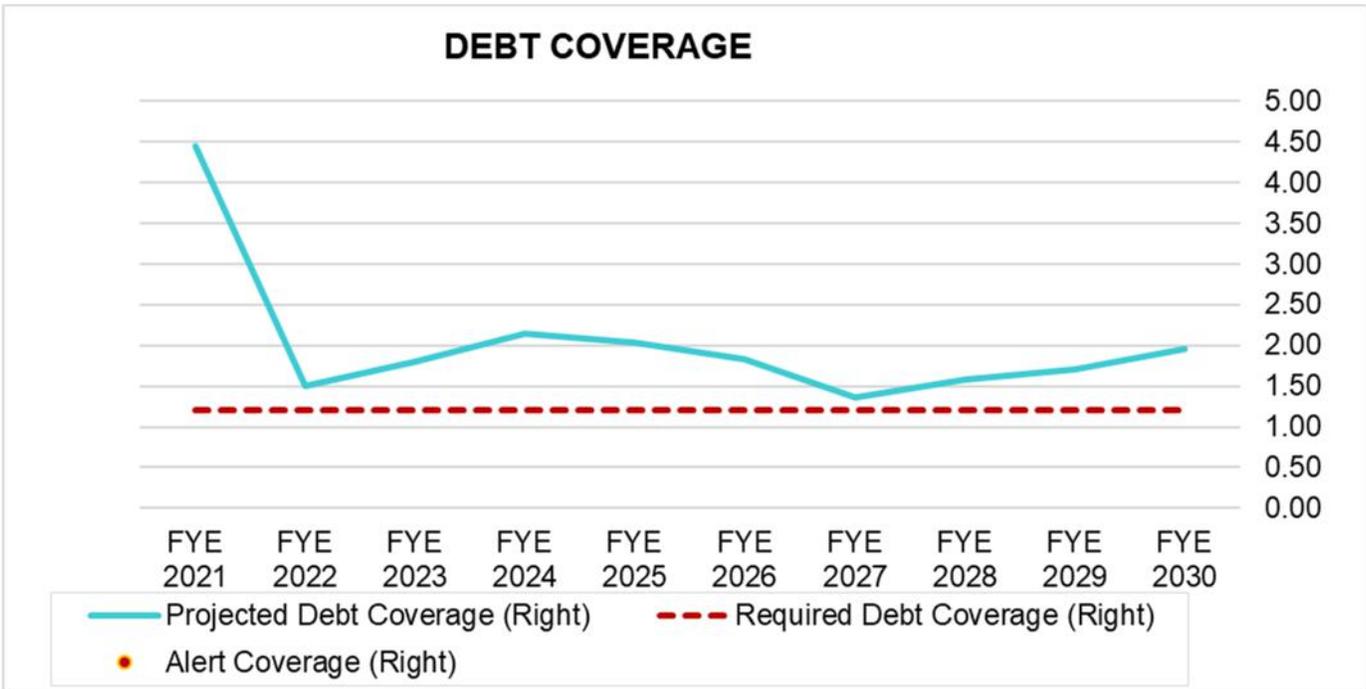


Figure 8-3: 10-Year Water Enterprise Projected Ending Balances

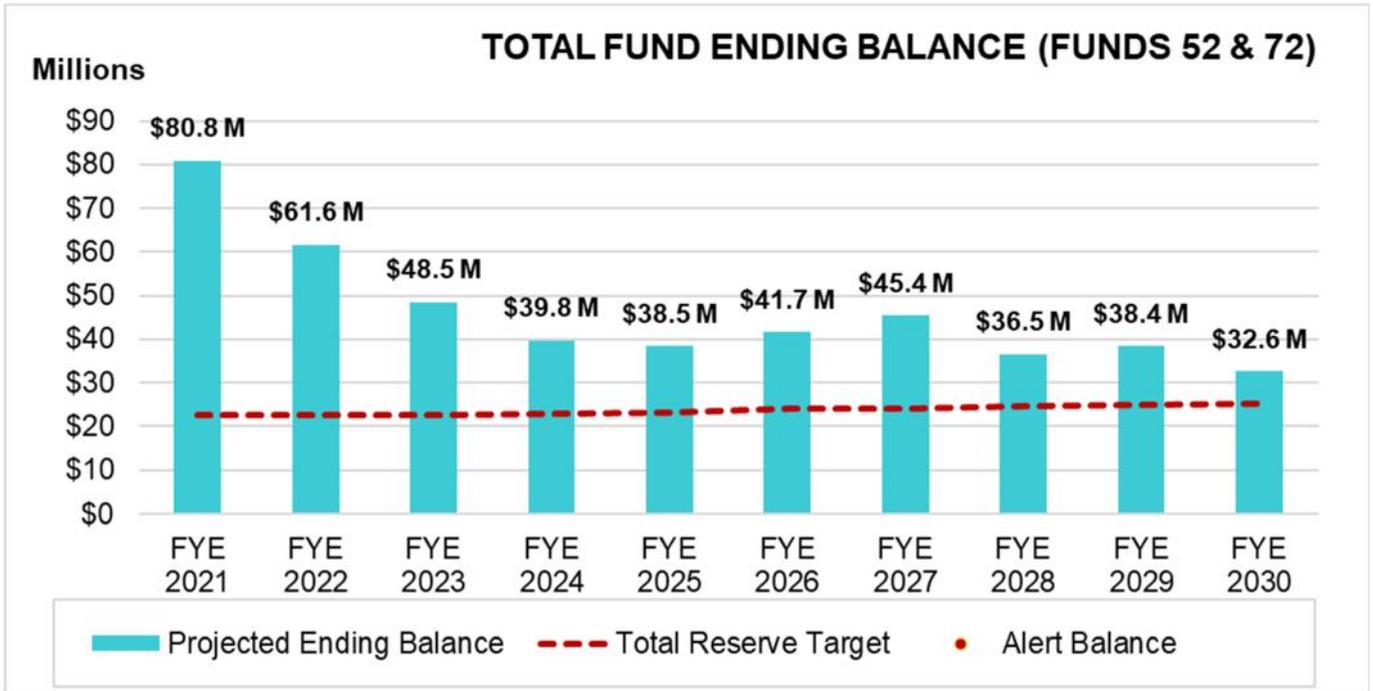
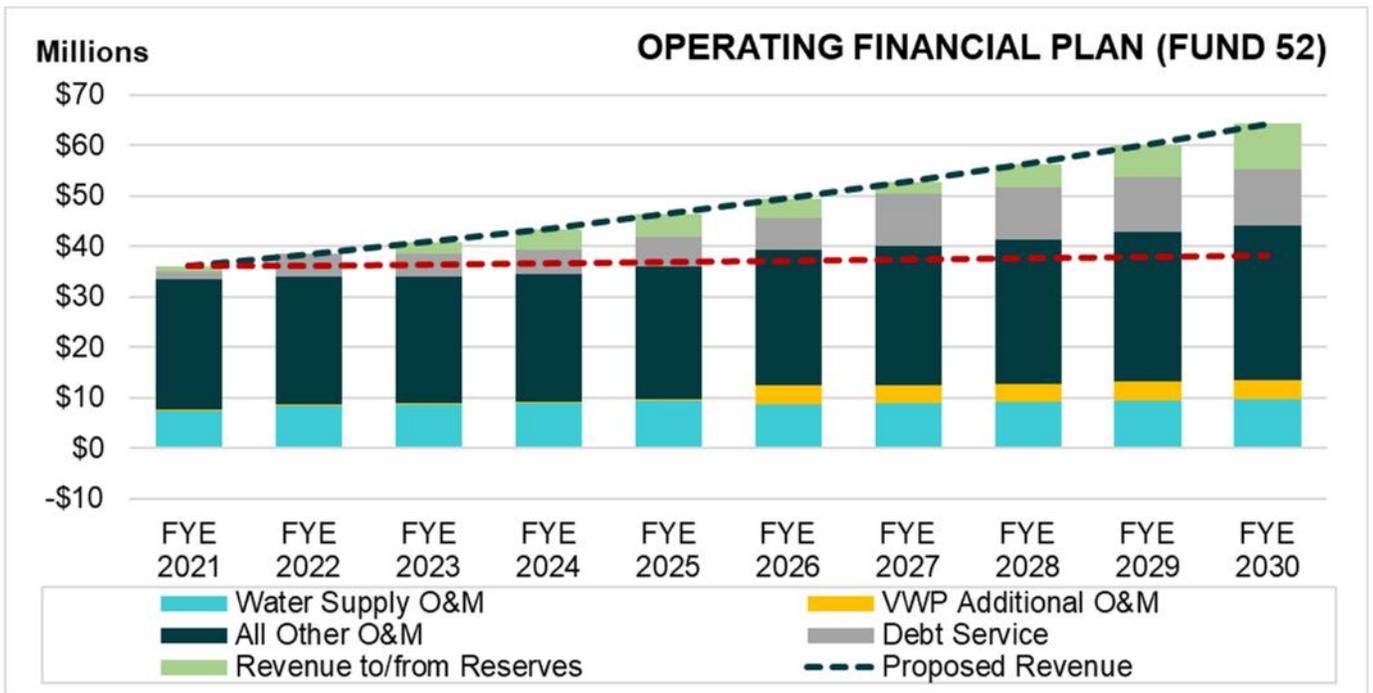


Figure 8-4: 10-Year Water Enterprise Operating Financial Plan



9. Appendix C: Ten-Year Wastewater Enterprise Financial Plan

Raftelis evaluated proposed financial plan options with Ventura Water staff and the Water Commission based on a ten-year planning horizon through FY 2029-30. Because the proposed wastewater rate schedule presented in this report is for the next five fiscal years only, financial plan results shown in **Section 5.2** only extend through FY 2025-26 for display purposes and to improve clarity. **Appendix C** provides ten-year Wastewater Enterprise financial plan projections as a supplement. Note that all revenue adjustments and proposed debt issuances (to finance CIP exclusive of Ventura Pure) shown below beyond FY 2025-26 are for planning purposes only, and will be revisited during the next rate study (to establish proposed wastewater rates beyond FY 2025-26).

The ten-year financial projections are based on the same set of assumptions as the five-year financial projections and are based on the best data available at the time of this Study. Assumptions become less reliable and more uncertain over a long time horizon and new and refined data becomes available; additionally Proposition 218 only allows agencies to adopt and implement rates for a maximum period of five years. Actual revenue requirements for fiscal years beyond FY 2025-26 will be determined in the next five-year rate study. Depending on actual revenues and expenses incurred during this five-year rate setting period, projected revenue increases in years 6-10 year may be able to be reduced from today’s estimates. Items which will impact years 6-10 include future wastewater flow generation, actual capital costs incurred, actual cost inflation, future debt terms, as well as future SRF and WIFIA deferral and repayment schedules.

Table 9-1: Ten-Year Wastewater Enterprise Financial Plan Assumptions

Fiscal Year	Revenue Adjustment	Proposed Debt Issuance (excl. Ventura WaterPure) ⁹⁹	Notes
FY 2020-21	N/A	\$0	Current Fiscal Year
FY 2021-22	6.0%	\$0	Proposed
FY 2022-23	6.0%	\$0	Proposed
FY 2023-24	6.0%	\$0	Proposed
FY 2024-25	6.0%	\$0	Proposed
FY 2025-26	6.0%	\$0	Proposed
FY 2026-27	6.0%	\$0	For planning purposes only
FY 2027-28	6.0%	\$0	For planning purposes only
FY 2028-29	6.0%	\$0	For planning purposes only
FY 2029-30	6.0%	\$0	For planning purposes only

⁹⁹ The ten-year proposed wastewater financial plan projections assume that no new debt will be issued to finance CIP (exclusive of Ventura WaterPure) through FY 2029-30.

Figure 9-1: 10-Year Wastewater Enterprise Capital Improvement Plan (incl. VenturaWaterPure)

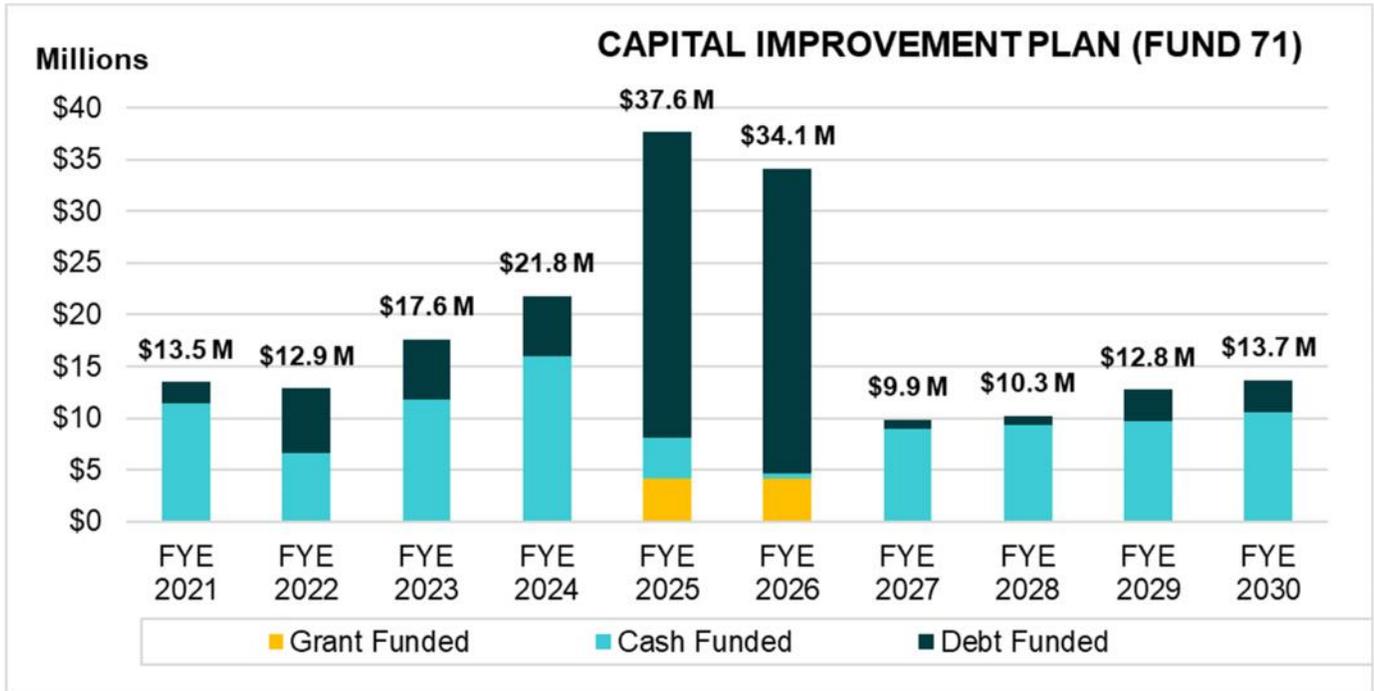


Figure 9-2: 10-Year Wastewater Enterprise Debt Coverage Projections

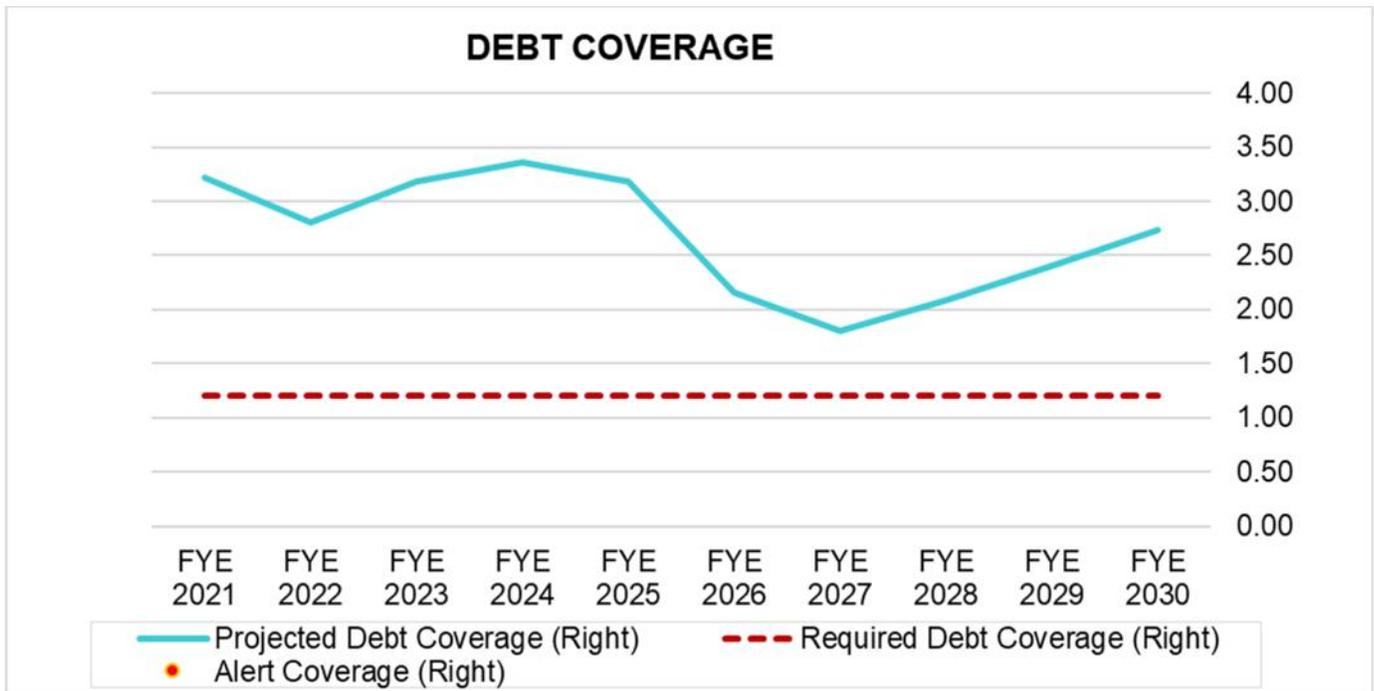


Figure 9-3: 10-Year Wastewater Enterprise Projected Ending Balances

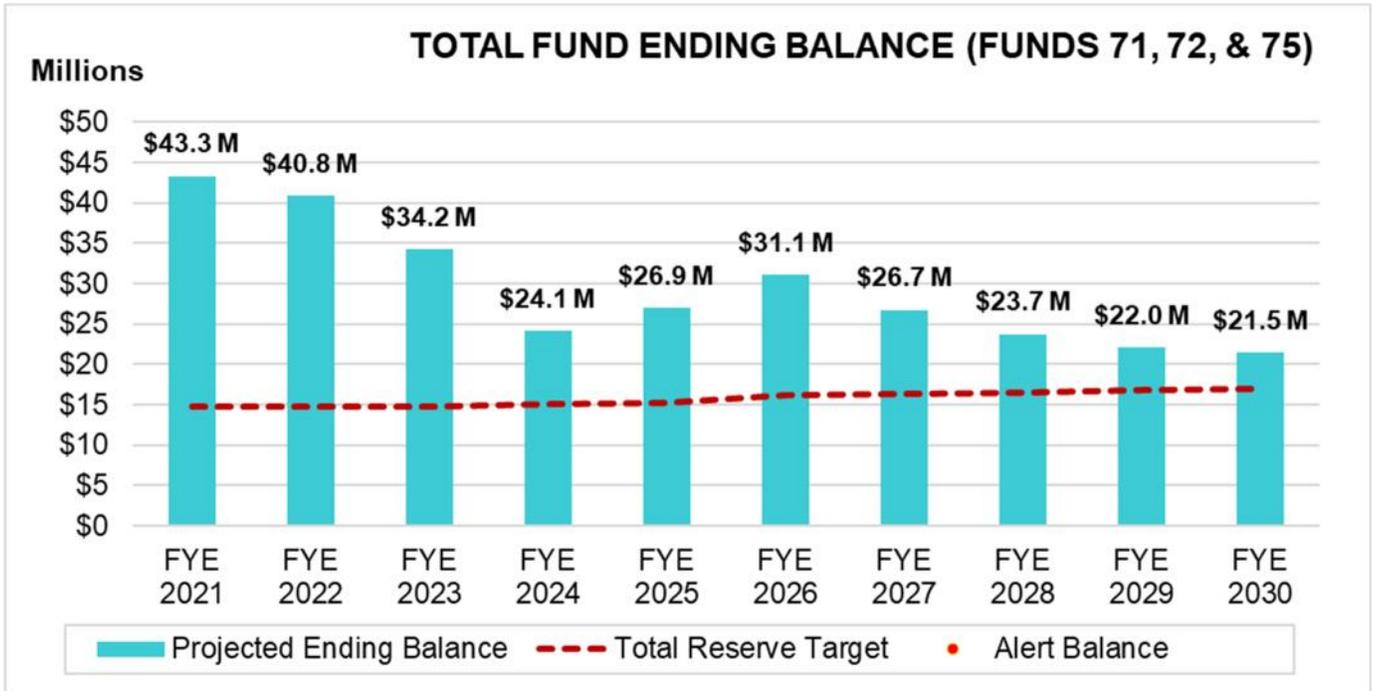


Figure 9-4: 10-Year Wastewater Enterprise Operating Financial Plan

