

County of Fresno

County Service Area 30 El Porvenir Water Rate Analysis

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Table of Contents

1	Introduction.....	1-1
1.1	Purpose and Objectives.....	1-1
1.2	Background.....	1-1
1.3	Information Provided by the County.....	1-2
2	Existing Water System.....	2-1
2.1	Customer Accounts and Water Rates.....	2-1
2.2	Historical Water Usage.....	2-2
2.3	Equivalent Dwelling Units.....	2-3
2.4	Operating Costs.....	2-4
2.5	Negative Cash and Held Charges.....	2-5
3	New Water System Operating Costs.....	3-1
3.1	Cost Determination.....	3-1
3.2	Budgetary Operating Costs.....	3-1
3.2.1	Professional and Specialized Services.....	3-1
3.2.2	Utilities and Chemicals.....	3-1
3.2.3	Maintenance and Repairs.....	3-1
3.2.4	Other Expenses.....	3-2
3.3	Summary of Operating Budget.....	3-2
3.3.1	Transition from Surface Water to Groundwater Supply.....	3-2
3.3.2	Operating Expenses – Groundwater Well Operation.....	3-2
3.3.3	Non-Operating Expenses – Groundwater Well Operation.....	3-4
3.3.4	Operating Expenses - Interim Surface Water Treatment Plant (SWTP) Operation.....	3-4
4	Payment of Outstanding Expenses.....	4-1
4.1	County Service Area Revolving Fund Loan.....	4-1
5	Water Rate Subsidy.....	5-1
5.1	Safe and Affordable Drinking Water Funding.....	5-1
6	Proposed Water Rates.....	6-1
6.1	Cash Flow Analysis.....	6-1
6.2	Water Rate Determination.....	6-1
6.3	Summary of Proposed Water Rates.....	6-2
	Appendices.....	1
	Appendix A: Summary of Budgetary Operating Costs and Reserves.....	2

Appendix B: Future Cash Flow Projection 3
Appendix C: Water Rate Calculation 4
Appendix D: Proposed Water Rate Schedule 5

List of Figures

Figure 1-1. CSA 30 Proposed Water System.....1-2

List of Tables

Table 2-1. Customer Accounts and Water Rates.....2-1
Table 2-2. Revenue Estimate Based on Current Water Rates2-2
Table 2-3. Historical Water Usage (in Gallons)2-3
Table 2-4. Equivalent Dwelling Units (EDUs).....2-4
Table 2-5. Operating Expense Accounts.....2-4
Table 2-6. Historical Water Fund Expenditures.....2-5
Table 2-7. Summary of Negative Cash and Held Charges.....2-6
Table 3-1. Summary of New Budgetary Operating Expenses (Groundwater Well Operation)3-3
Table 3-2. Summary of Interim SWTP Budgetary Operating Expenses3-5

Abbreviations

AWWA	American Water Works Association
County	County of Fresno
CSA	County Service Area
DFA	Division of Financial Assistance
DWR	Department of Water Resources
EDU	Equivalent Dwelling Unit
FYE	Fiscal Year End
gpd	gallons per day
HAA5	haloacetic acids
MCL	Maximum Contaminant Level
MG	Million Gallons
MHI	median household income
O&M	operation and maintenance
SADW	Safe and Affordable Drinking Water
SDAC	Severely Disadvantaged Community
SWRCB	State Water Resources Control Board
SWTP	Surface Water Treatment Plant
TTHM	total trihalomethanes
WWD	Westlands Water District

1 Introduction

1.1 Purpose and Objectives

Provost and Pritchard Consulting Group was retained by the County of Fresno to conduct a water rate analysis for County Service Area 30. The County owns and operates the CSA 30 potable water system that serves the community of El Porvenir in Fresno County, California. The existing water system has many deficiencies and operating costs have increased due to more frequent maintenance and repairs. Operating revenue has not been sufficient to cover these operation and maintenance expenses.

The County is in the process of constructing new water supply and distribution infrastructure to replace existing facilities. The source of water will change from surface water to groundwater. The existing surface water treatment plant will be abandoned, and two new groundwater wells will supply the water system. Wellhead treatment will be installed to reduce manganese levels below the secondary Maximum Contaminant Level.

The purpose of this rate analysis is to determine revenue required to cover cash needs for operation of the new water system during the next 5 years. The primary objective of this analysis is to develop customer water rates consistent with American Water Works Association (AWWA) Manual M1, “Principles of Water Rates, Fees and Charges”. It is the intent of the County to adopt new water rates, based on the approval of customers, in conformance with the legal requirements of Article XIII D of the California Constitution, which is in Proposition 218.

The water rate analysis was previously completed by Provost & Pritchard Consulting Group and summarized in a report dated December 16, 2022. The County issued public notices to property owners (and their tenants) that receive water service in the CSA 30 service area. The County held public meetings to discuss the proposed rate increase and protest process on February 8th in El Porvenir and February 21st in Cantua Creek. A public protest hearing was held by the County Board of Supervisors on February 28, 2023. The Board of Supervisors did not adopt the new water rates because a majority of property owners (and their tenants) submitted written protest letters. The water rate analysis was updated to reflect increases in negative cash and unpaid held charges that have occurred since the last rate analysis was completed. This report has been revised to reflect changes to the water rate analysis. It is assumed that new rates will go into effect on July 1, 2023.

1.2 Background

El Porvenir is located northwest of the intersection of West Clarkson Avenue and South Derrick Avenue (State Route 33) in Fresno County, CA. El Porvenir is classified as a community water system and is operated by the County of Fresno under CSA 30. The water system supplies municipal water to 54 residential customers within the existing service area boundary and 2 out-of-district customers with prior written approval of the Local Agency Formation Commission, which consist of residential homes.

El Porvenir relies on raw water obtained from the California Aqueduct and conveyed to a surface water treatment plant through Westlands Water District laterals #11-R. Existing facilities at El Porvenir include a package surface water treatment plant with the following treatment process: coagulation with poly-aluminum chloride, flocculation, flow through an up-flow clarifier, flow through contact clarifier, packaged filtration plant, chlorination station, and storage tank. Treated water is delivered to the distribution system using a

booster pump station. The surface water treatment facility is currently the sole source of water supply to the community.

Historically, the surface water treatment plant has not complied with the secondary MCL for total haloacetic acids (HAA5) and total trihalomethanes (TTHM). As such, the County of Fresno investigated developing groundwater wells to replace the current surface water supply. The County secured grant funds from the State Water Resources Control Board (SWRCB) to construct the groundwater supply wells. The County is in the process of constructing two wells to supply the water system. The wells will be equipped with wellhead treatment to reduce manganese levels below the secondary MCL.

The County also secured funding through the Department of Water Resources (DWR) to replace the existing water distribution system. Construction of the new distribution system is complete. The proposed water system is shown in Figure 1-1.

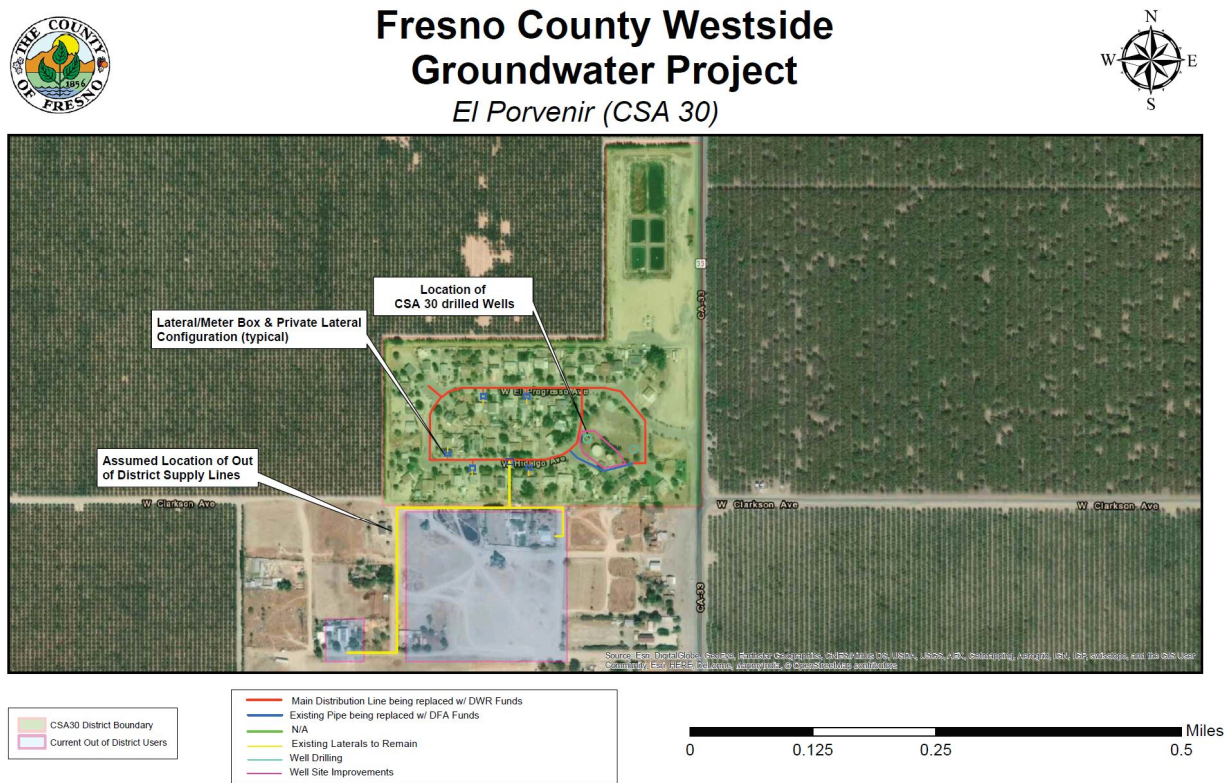


Figure 1-1. CSA 30 Proposed Water System

1.3 Information Provided by the County

The County provided the following information and documents for reference in the water rate analysis.

- Customer account list
- Current master fee schedule
- Line-item expenditure summary for FYE 2017 through 2020
- Policy Establishing Minimum Reserve Levels for Special Districts (November 7, 2006)
- Financial Audits FYE 2016 through 2020

Section One: Project Background

CSA 30 (El Porvenir) - Water Rate Analysis

- Water usage data for 2017 through 2020
- Summary of negative cash balance and held charges for unpaid labor
- County of Fresno Resolution Nos. 17-121 and 17-122 of the Board of Supervisors (February 2, 2017), Establishing County Service Area Revolving Fund and Policy for Use

2 Existing Water System

2.1 Customer Accounts and Water Rates

The CSA 30 water system currently serves 54 customers which is comprised of single-family residential homes and two out-of-district customers. The customer accounts and water rates are summarized in the table below. A Proposition 218 public hearing was held, and current water rates were adopted by the County Board of Supervisors. Current water rates are listed in the table below.

Table 2-1. Customer Accounts and Water Rates

Customer Accounts and Water Rates		
Customer Classification	Number of Accounts	Rate
Monthly Base Water Fee		
Residential	54	\$104.21
Out of District	2	\$104.21
Total	56	
Commodity Fee		
Rate per 1000 gallons		\$2.48

Water rates are charged monthly and include fixed and variable components. The fixed charge is billed monthly regardless of the amount of water used by each customer. This charge is intended to recover the fixed operating costs of the water system, excluding the cost to purchase untreated water for the surface water treatment plant.

The variable charge is billed based on water consumption and is intended to recover the cost to purchase untreated water from Westlands Water District (WWD). Each customer is charged the same rate for every 1000 gallons of water that passes through their meter. The County reads meters and charges based on water consumption every month.

Water rate revenue can be estimated using the fixed monthly charge for each customer and annual water consumption. An estimate of revenue is summarized in the following table using average water consumption for a 12-month period. Annual water consumption is based on measured water usage from 2017 through 2020. The estimated annual revenue is \$85,316 but actual revenue will vary based on the number of active accounts, water consumption from year-to-year, and collections from active customers. The split between fixed and variable revenue is approximately 82% fixed and 18% variable.

Table 2-2. Revenue Estimate Based on Current Water Rates

Revenue Estimate Based on Current Water Rates			
Customer Classification	Number of Accounts	Rate	Total Charges
Monthly Base Water Fee			
Residential	54	\$104.21	\$67,528
Out of District	2	\$104.21	\$2,501
Total Fixed Charge	56		\$70,029
Commodity Fee			
Total Water Sales (in gallons) ¹	6,164,000		
Rate per 1000 gallons		\$2.48	
Total Water Usage Charge			\$15,287
Estimated Annual Revenue			\$85,316

Note:

1. Total water consumption represents water usage for a 12-month period based on historic average water use from 2017 through 2020 (See Table 2-3).

2.2 Historical Water Usage

Total water consumption of the CSA 30 community is summarized in the following table. Historic water usage data was provided by the County for 2017 through 2020. The data was obtained from meter register records which represents the total potable water consumption of customers as measured from their water meters. Total annual water consumption ranged from 5.7 to 6.7 million gallons (MG) with a 4-year annual average of 6.2 MG.

The water usage does not represent the amount of source water purchased from WWD. Source water requirements would be higher, accounting for additional water required for filter backwashing at the surface water treatment plant, leaks in the distribution system, unmetered fire hydrant use, and other water loss in the water system.

Table 2-3. Historical Water Usage (in Gallons)

Historical Water Usage (in Gallons)					
Month	2017	2018	2019	2020	4-Year Average
January	312,890	220,990	297,340	324,865	289,021
February	256,740	334,340	278,647	615,323	371,263
March	335,350	367,366	443,543	380,050	381,577
April	449,530	574,934	511,318	386,378	480,540
May	586,980	651,850	430,369	752,952	605,538
June	702,960	714,290	433,627	643,887	623,691
July	693,120	812,710	829,849	1,139,986	868,916
August	713,490	819,950	718,405	631,098	720,736
September	642,050	663,030	655,518	679,777	660,094
October	481,101	550,266	437,645	473,969	485,745
November	335,259	372,765	477,962	304,691	372,669
December	331,260	282,279	213,883	390,942	304,591
Total	5,840,730	6,364,770	5,728,106	6,723,918	6,164,381

Notes:

1. Water usage is based on individual customer billing register totals provided by the County.
2. Only 51 residential water services were active during this record period according to County.

2.3 Equivalent Dwelling Units

The residential and out-of-district connections consist entirely of residential customers. Equivalent dwelling units (EDUs) were calculated based on average annual water usage by all customers from 2017 through 2020 as shown in the table below. The average annual water use was divided by the number of active accounts to determine average water use for each connection. The average water use of a single-family residential account is equal to one EDU. The equivalent dwelling units for the out-of-district customer classifications are based on the number of single-family residential homes served. The total number of EDUs for the community is 56.

Table 2-4. Equivalent Dwelling Units (EDUs)

Equivalent Dwelling Units							
Customer Classification	Active Accounts (2017-2020)	Average Annual Water Use (gallons)	Water Usage per Account (gal / account)	Equivalent Dwelling Units (EDUs)	Current Number of Accounts	EDUs	Total EDUs
Residential plus Out of District	51	6,164,381	120,870	1	-	-	-
Residential	-	-	-	-	54	1.0	54.0
Out of District	-	-	-	-	2	1.0	2.0
Total	51	6,164,381			56		56.0

Notes:

1. Water usage per account is based on average annual water use and active accounts from 2017 through 2020.
2. Average water use per residential customer is one equivalent dwelling unit.

2.4 Operating Costs

The County provided an expense summary for water system expenditures for fiscal year ending (FYE) 2017 through 2020. The fiscal year begins on July 1st each year and ends on June 30th. Expenses are segregated into the expense accounts listed in the following table.

Table 2-5. Operating Expense Accounts

Operating Expenses Accounts	
Operating Expenses – 7000 Service & Supplies	Description
07010 Agriculture	Raw water purchase for surface water treatment plant
07070 Household Expense	Solid waste cost
07101 General Liability Insurance	
07205 Maintenance-Equipment	Outside vendor charges for repairs
07220 Maintenance-Buildings & Grounds	Equipment, materials and chemical costs
07250 Memberships	
07265 Office Expense	
07268 Postage	
07287 Peoplesoft Financial Charge	Financial software charge per transaction
07295 Professional & Specialized Services	County staff administration and operator labor charges
07296 Data Processing Services	EWON plant operator alarm service fee
07385 Small Tools & Instruments	
07430 Utilities	Utility company electricity charges

The total annual operating expenses range from \$85,149 to \$137,068 with an average of \$108,880. Assuming customer approval of the water rates, under Proposition 218, operating costs will change since the water source will transition from surface water to groundwater. If such customer approval is obtained, (i) some

Section Two: Existing Water System CSA 30 (El Porvenir) - Water Rate Analysis

expenses such as the agriculture line-item for surface water purchases will be eliminated after the surface water treatment plant (SWTP) is taken offline, and (ii) it is anticipated that most of the administrative costs will be relatively unchanged, however, other costs specific to operating the new water system supplied by groundwater wells will change. Operating cost changes are addressed later in this report.

Table 2-6. Historical Water Fund Expenditures

Historical Water Fund Expenditures					
Account	FYE 2017	FYE 2018	FYE 2019	FYE 2020	Average
07010 Agriculture	\$18,706.49	\$14,407.64	\$17,230.68	\$7,179.11	\$14,380.98
07070 Household Expense	0.00	0.00	0.00	0.00	0.00
07101 General Liability Insurance	373.49	404.50	478.57	393.69	412.56
07205 Maintenance-Equipment	14,780.41	6,534.32	3,320.84	2,306.61	6,735.55
07220 Maintenance-Buildings & Grounds	462.71	993.50	850.00	2,470.55	1,194.19
07250 Memberships	161.20	310.59	191.75	157.24	205.20
07265 Office Expense	8.60	0.00	5.21	0.00	0.00
07268 Postage	1,078.66	892.65	936.55	443.72	837.90
07287 Peoplesoft Financial Charge	4,265.48	4,477.63	4,087.78	2,169.66	3,750.14
07295 Professional & Specialized Services	60,224.37	22,653.62	43,441.45	71,848.97	49,542.10
07296 Data Processing Services	0.00	0.00	0.00	120.40	30.10
07385 Small Tools & Instruments	85.72	0.00	0.00	0.00	21.43
07430 Utilities	4,481.88	3,308.39	5,328.01	2,597.25	3,928.88
Subtotal Expenditures	\$104,692.01	\$53,982.84	\$75,870.84	\$89,687.20	\$81,039.02
Held Charges	11,713.27	31,166.13	21,102.74	47,380.85	27,840.75
Total Expenditures	\$116,342.28	\$85,148.97	\$96,973.58	\$137,068.05	\$108,879.77

Note:

1. Held charges are expenses that could not be applied to the water system account due to an exceedance of the adopted annual budget.

2.5 Negative Cash and Held Charges

Water rate revenue has not been sufficient to cover operating costs for multiple years. The existing surface water treatment plant facilities and distribution system (in the process of being replaced) are old and have a high operating cost associated with maintenance and repairs. The high operating cost has been a major contributor to recurring insufficient revenues.

A budget is established each fiscal year and adopted by the Board of Supervisors. Due to the inadequacy of the rate revenue, the expenses of the water system typically exceed the budget before the end of the fiscal year. Once the budget has been exceeded, costs are held in suspense, and tracked separately by the Department of Public Works and Planning for accounting purposes. During that period, costs are not charged to the water system's account. As a result, held charges are temporarily allocated to other County funds and those charges are applied to the water system at the beginning of the next fiscal year. When the water system's cash balance is exhausted, expenses are paid with other County funds (e.g. - purchase of chemicals, materials, electricity, and cost of repairs) and as a result there is a negative cash balance for

Section Two: Existing Water System CSA 30 (El Porvenir) - Water Rate Analysis

accounting purposes. The engineer preparing this report is informed by the County that the negative cash balance, and manner of tracking of costs and unpaid held charges causing such negative balance, does not relieve the water system, including its customers, of its obligation for the full payment of those expenses.

The water system currently has a negative cash balance and unpaid held charges that need to be repaid to other County public funding sources to make them whole. Solely to ensure that other County public funding sources are made whole, the negative cash is expected to be charged interest by the County Auditor-Controller/Treasurer-Tax Collector at the County then-current pooled funds rate. The County pooled funds rate changes each quarter and is published on the County's website. The rate for the quarter ending December 31, 2022 was 2.027% which was used to calculate estimated interest for the purpose of the rate analysis.

The negative cash balance and held charges will be repaid with water rate revenue. It is anticipated that new water rates referenced in this report will go into effect on July 1, 2023. Repayment of the negative cash balance and held charges will be incorporated into those new water rates. The current balance of negative cash and unpaid held charges is summarized in the following table, Table 2-7. Estimated payment amount on outstanding expenses referenced in Table 2-7 was calculated assuming quarterly payments over 5 years.

The Board of Supervisors' approval of this report is not any approval or ratification, either express or implied, of the manner in which any negative cash balances, and unpaid held charges causing such negative balance, should be treated or accounted for, and in no way does the Board of Supervisors' approval of this report operate, either expressly or impliedly, as a waiver or release of the right of the County to obtain the water system's full payment of all water charges (including interest thereon for any negative cash balances, and unpaid held charges causing such negative balance), as and when they are due.

Table 2-7. Summary of Negative Cash and Held Charges

Summary of Negative Cash and Held Charges	
Item	Amount
Negative Cash and Held Charges Balance	
Negative Cash Balance as of 3/15/2023	\$134,978.62
Unpaid Held Charges FY 2019-20	\$112,235.18
Unpaid Held Charges FY 2020-21	\$106,288.84
Unpaid Held Charges FY 2021-22	\$94,288.28
Estimated Unpaid Held Charges FY 2022-23	\$30,000.00
Total Negative Cash and Held Charges	\$477,790.92
Estimated Payments on Outstanding Expenses	
Annual Interest Rate ¹	2.027%
Repayment Period (in years)	5
Payments per Year (quarterly)	4
Estimated Payment Amount	\$25,181.02
Estimated Annual Payment Amount	\$100,724.09

Note:

1. Interest rate is equal to County Pooled Funds interest as of quarter ending December 31, 2022.

Section Two: Existing Water System CSA 30 (El Porvenir) - Water Rate Analysis

The total negative cash balance and held charges includes both actual and estimated amounts. The actual negative cash balance as of March 15, 2023 includes negative cash from operations only. Interest will continue to be accrued until new water rates go into effect. The actual unpaid held charges for fiscal year (FY) 2019-20, 2020-21 and 2021-22 are shown in the table above. The County also provided an estimate of held charges for FYE 2023.

The County executed funding agreements for CSA 30 and 32 with the SWRCB for construction of new groundwater wells and manganese treatment, and the DWR for construction of distribution system replacement. Construction of improvements for both water systems are combined under the same construction contracts. For administrative purposes, the County is tracking grant proceeds and construction expenditures for both water systems under the CSA 32 accounts. Therefore, negative cash balances and held charges, shown in the table above, Table 2-7, are from CSA 30 operations only and do not include any grant proceeds or expenditures for construction.

3 New Water System Operating Costs

3.1 Cost Determination

Operating costs for a water system supplied by groundwater wells will be different from that of the existing surface water treatment facility. Budgetary operating costs were developed based on assumptions for typical operations of a water system supplied by groundwater wells with manganese treatment. The County reviewed budgetary operating costs to provide input based on similar County-operated systems. Historic operating costs for CSA 30 were used to develop budgetary estimates for administrative costs which are not anticipated to change significantly. Operating costs will need to be monitored by the County and actual costs should be used to adjust water rates accordingly in the future.

3.2 Budgetary Operating Costs

Budgetary operating costs were grouped into four major categories described in the following sections. The basis of operating costs is summarized in tables included in Appendix A.

3.2.1 Professional and Specialized Services

This category includes office and operator labor and laboratory testing expenses anticipated for the water system. Office labor includes staff time associated with bookkeeping, billing and collections, accounts payable, and related tasks to support administrative functions of the water system. Operator labor includes travel expense and staff time for routine site visits for water system operation and maintenance. The water system operator will combine routine visits to Cantua Creek with site visits to El Porvenir since both water systems are nearby. Projected labor and travel costs were estimated in total for both systems and the cost were distributed to each system based on proportionate size of the water systems. Laboratory tests includes water quality testing of samples for compliance with regulatory requirements.

3.2.2 Utilities and Chemicals

This category includes utility and chemical costs for the well and storage tank site equipment. Utilities include electricity and subscription to operator alarm service. Energy usage was estimated based on pump equipment power requirements and annual operating hours based on estimated annual average water pumping. Electricity costs are based on estimates of annual energy usage and unit cost of energy. The average unit cost of energy, in dollars per kilowatt hour, was derived from utility billing records provided by the County for the existing system. An alarm service notifies the operator of equipment status and faults. Costs for alarm service is based on existing subscription cost. Chemicals include purchase and delivery of chlorine to the well site. Chlorine will be used for the manganese treatment process and disinfection of drinking water.

3.2.3 Maintenance and Repairs

This category includes maintenance and repairs of equipment and facilities. The budgetary cost for annual maintenance and repairs was set with input from County staff.

3.2.4 Other Expenses

This category includes other expenses such as general liability insurance, financial software service fees and other office and administrative expenses. It is not anticipated that administrative expenses will change significantly to operate the new water system. Budgetary expenses for this category of expenses were set relative to average costs observed in FYE 2017 through 2020.

3.3 Summary of Operating Budget

3.3.1 Transition from Surface Water to Groundwater Supply

The County is still in the process of constructing the multi-phase water system improvement project that will transfer the water supply from surface water to groundwater. The project is anticipated to be complete by July 1, 2025. New water rates will initially be set for the first two years based on the expected continued operation of the SWTP, and then for the subsequent three years based on the expected operation of groundwater wells. Operating budgets were developed based on operation of groundwater wells beginning in 2025 and interim operation of the SWTP in 2023 and 2024. The timeline to transition the water source from surface water to groundwater is an estimate based on the anticipated time to complete construction. The timing will be subject to actual completion of construction and receiving approval from the SWRCB to place the new groundwater wells into service. Budgetary operating and non-operating expenses are discussed in the following sections.

3.3.2 Operating Expenses – Groundwater Well Operation

Proposed budgetary operating costs for the new water system are summarized in Table 3-1. Current average costs are the average cost from FYE 2017 through 2020 taken from Table 2-6. These costs are included in the summary for reference. The new budgeted cost represents the proposed operating budget for the new system after the groundwater wells are in service. Costs specific to operating the new water system were developed based on new equipment and operations as discussed in the previous sections. These costs are shown under Professional and Specialized Services; Utilities and Chemicals; and Maintenance and Repairs.

Professional and Specialized Services are anticipated to decrease from current levels. Utilities and chemical costs show an overall increase due to estimated electricity cost. Electricity cost is expected to be higher for groundwater pumping, however, the utility expense shown in Table 3-1 from historic operating costs may not accurately represent actual previous costs due to negative cash and held charges as discussed in previous sections. In general, maintenance and repair costs are anticipated to be lower since old facilities will be replaced with all new equipment. However, the change in this category is minimal which also may be attributed to negative cash and held charges. Other expenses consisting primarily of administrative costs are not anticipated to change significantly as stated.

As stated above, it is anticipated that water rates for groundwater well operation will go into effect on July 1, 2025. The new budgeted costs are escalated by an annual rate of 4% over 2.5 years to project expenses from present value to the first year of operation. New water rates based on groundwater well operation will not go into effect until approval is received from the SWRCB to place new groundwater wells into service.

Operating expenses are categorized as fixed costs, variable costs or partially fixed and variable costs by percentage. Fixed costs are usually recovered proportionately to customer service size or equivalent dwelling units, independent of monthly water usage. Expenses are typically classified as fixed costs based on the benefit to customers regardless of level of water usage. Expenses are classified as variable costs to the extent that costs are more directly related to water usage (e.g. - electricity, chemicals, and repairs). The distribution of fixed and variable operating costs is 75% fixed and 25% variable (excluding Non-Operating Expenses).

Section Three: Existing Water System
CSA 30 (El Porvenir) - Water Rate Analysis

Table 3-1. Summary of New Budgetary Operating Expenses (Groundwater Well Operation)

Summary of New Budgetary Operating Expenses (Groundwater Well Operation)						
Expense Item	Current Average Costs	New Budgeted Cost ¹	New Cost First Year of Operation ²	Percent Fixed Cost	Fixed Cost	Variable Cost
Professional and Specialized Services						
07295 Professional & Specialized Services	\$49,542.10	<i>\$40,800</i>	\$45,003	100%	\$45,003	\$0
Utilities and Chemicals						
07010 Agriculture	14,380.98	-	-	-	-	-
07220 Maintenance-Buildings & Grounds (cost to purchase chlorine)	1,194.19	<i>2,700</i>	2,978	0%	0	2,978
07430 Utilities	3,928.88	<i>10,700</i>	11,802	0%	0	11,802
Maintenance and Repairs						
07205 Maintenance-Equipment	6,735.55	<i>6,500</i>	7,170	50%	3,585	3,585
Other Expenses						
07101 General Liability Insurance	412.56	500	552	100%	552	0
07250 Memberships	205.20	310	342	100%	342	0
07265 Office Expense	0.00	500	552	100%	552	0
07268 Postage	837.90	1,000	1,103	100%	1,103	0
07287 Peoplesoft Financial Charge	3,750.14	4,000	4,412	100%	4,412	0
07296 Data Processing Services	30.10	120	132	100%	132	0
07385 Small Tools & Instruments	21.43	0	0	100%	0	0
Subtotal Operating Expenses	81,039.02	67,130	74,046		55,681	18,365
Held Charges ³	27,840.75	-	-		-	-
Total Operating Expenses	108,879.77	67,130	74,046		55,681	18,365
Percent Fixed and Variable Cost					75%	25%
Non-Operating Expenses						
Payment of Outstanding Expenses ⁴			100,724	100%	100,724	0
Operating Reserve Set-Aside ⁵			7,720	100%	7,720	0
Replacement Reserve Set-Aside ⁵			5,300	100%	5,300	0
Total Operating + Non-Operating Expenses			\$187,790		\$169,425	\$18,365
Percent Fixed and Variable Cost					90%	10%

Notes:

1. New budgeted cost values (*italicized*) are estimated costs for new water system facilities. All other expenses are administrative and were derived from historic expenditures (FYE 2017 through FYE 2020).
2. First year of operation is assumed to begin on July 1, 2025.
3. Held charges represent expenses that exceeded the annual water system budget.
4. See Table 2-7 for payment calculation
5. See Section 3.3.3 for non-operating expense determination.

3.3.3 Non-Operating Expenses – Groundwater Well Operation

Non-operating expenses include payment of outstanding expenses, capital expenditures and funds set aside for reserves. The cost recovery for all non-operating expenses is included entirely as a fixed cost. The distribution of total fixed and variable operating and non-operating costs combined is 90% fixed and 10% variable.

Reserve funds are necessary to provide funds for capital improvements, emergency repairs and eventual replacement of equipment. The new water rates incorporate a minimum operating reserve and equipment replacement reserve as described below. No new capital projects were identified by the County since all facilities are in the process of being replaced as a part of the current water system improvement projects discussed in Section 2.5. Therefore, reserves for future capital improvement projects were not included in the new rate calculation.

The County Board of Supervisors adopted a policy establishing minimum reserve levels for special districts on November 7, 2006. For water service districts, the reserve amount target is 50% of the annual average of 3 years of operation, maintenance and administration expenditures (excluding extraordinary infrastructure or fixed asset projects) or \$13,000 for dissolution and reorganization costs, whichever is greater. The minimum operating reserve level incorporated into the new water rates is based on 50% of the annual average 3 years of operation, maintenance and administrative expenditures since this amount is greater than \$13,000. The operating reserve set-aside amount shown in Table 3-1 is 50% of the total operating expenses divided by the 5-year rate study period. The operating reserve will increase year-to-year as expenses increase with inflation.

Reserves for equipment replacement are incorporated into the new rates. Major equipment cost and service life was used to calculate the amount that should be set aside each year to build the needed reserve for future equipment replacement. A summary of equipment reserve amounts is included in Appendix A (see Table A-3).

3.3.4 Operating Expenses - Interim Surface Water Treatment Plant (SWTP) Operation

Proposed budgetary operating expenses for continued operation of the SWTP are summarized in Table 3-2. Current average costs are taken from Table 3-1 for reference. The new budgeted costs are the average historic costs escalated by an annual rate of 4% to July 1, 2023, since new water rates are planned to go into effect on July 1, 2023. The distribution of fixed and variable operating costs (excluding Non-Operating Expenses) is 76% fixed and 24% variable. The distribution of total fixed and variable operating and non-operating costs is 89% fixed and 11% variable. The non-operating expenses are the same as those shown in Table 3-1. Operating and equipment replacement reserve set-asides are based on long-term groundwater system operations.

The cost to purchase surface water from WWD is not included in Table 3-2. The rate charged for surface water is set by WWD and varies seasonally. Customers will be billed a separate “commodity” charge to recover the cost of surface water. Customers will be charged based on the amount of water used at the rate set by WWD plus 10% to account for water losses. The SWTP requires additional surface water to backwash and clean filters. The backwash water is disposed and represents a loss of water that cannot be used to supply the community water system. The backwash rate is estimated to be 10% of treated water.

Section Three: Existing Water System
CSA 30 (El Porvenir) - Water Rate Analysis

Table 3-2. Summary of Interim SWTP Budgetary Operating Expenses

Summary of Interim SWTP Budgetary Operating Expenses					
Expense Item	Current Average Costs	Interim Budgeted Cost ¹	Percent Fixed Cost	Fixed Cost	Variable Cost
Professional and Specialized Services					
07295 Professional & Specialized Services	\$49,542.10	\$54,646	100%	\$54,646	\$0
Utilities and Chemicals					
07220 Maintenance-Buildings & Grounds (cost to purchase chlorine)	1,194.19	1,317	0%	0	1,317
07430 Utilities	3,928.88	4,334	0%	0	4,334
Maintenance and Repairs					
07205 Maintenance-Equipment	6,735.55	7,429	50%	3,715	3,715
Other Expenses					
07101 General Liability Insurance	412.56	455	100%	455	0
07250 Memberships	205.20	226	100%	226	0
07265 Office Expense	0.00	0	100%	0	0
07268 Postage	837.90	924	100%	924	0
07287 Peoplesoft Financial Charge	3,750.14	4,136	100%	4,136	0
07296 Data Processing Services	30.10	33	100%	33	0
07385 Small Tools & Instruments	21.43	24	100%	24	0
Subtotal Operating Expenses	66,658.04	73,524		64,159	9,366
Held Charges ²	27,840.75	30,709	50%	15,355	15,355
Total Operating Expenses	94,498.79	104,233		79,513	24,720
Percent Fixed and Variable Cost				76%	24%
Non-Operating Expenses					
Payment of Outstanding Expenses ³		100,724	100%	100,724	0
Operating Reserve Set-Aside ⁴		7,720	100%	7,720	0
Replacement Reserve Set-Aside ⁴		5,300	100%	5,300	0
Total Operating + Non-Operating Expenses		\$217,977		\$193,257	\$24,720
Percent Fixed and Variable Cost				89%	11%

Notes:

1. Expenses were derived from historic expenditures (FYE 2017 through FYE 2020). Interim budgeted cost is assumed to begin on July 1, 2023.
2. Held charges represent expenses that exceeded the annual water system budget.
3. See Table 2-7 for payment calculation
4. See Section 3.3.3 for non-operating expense determination.

4 Payment of Outstanding Expenses

4.1 County Service Area Revolving Fund Loan

The negative cash balance and held charges will need to be repaid with water rate revenue as discussed in Section 2.5. The County of Fresno established a County Service Area Revolving Fund pursuant to Government Code §25214.5 which allows county service areas to borrow from the County General Fund. The fund was established and funded through Board of Supervisor adoption of Resolution Nos. 17-121 and 17-122 on February 7, 2017. The Department of Public Works and Planning plans to recommend that the Board of Supervisors authorize a loan to CSA 30 from the revolving fund to pay the negative cash balance and held charges. The loan from the County Service Area Revolving Fund would be subject to approval by the Board of Supervisors.

5 Water Rate Subsidy

5.1 Safe and Affordable Drinking Water Funding

The SWRCB has developed a pilot program to provide grant assistance from the Safe and Affordable Drinking Water (SADW) Fund to severely disadvantaged communities (SDAC) to offset water system operation and maintenance (O&M) costs for the purpose of maintaining affordable water rates. The community of El Porvenir is eligible, as a SDAC, since the median household income (MHI) is less than 60% of the statewide MHI. The County has applied for grant funding to subsidize water rates for CSA 30. If funding is awarded, SADW grant funds will be provided to the County to subsidize water bills in El Porvenir over a 5-year period.

Award of grant funding is subject to approval by the SWRCB Division of Financial Assistance (DFA) and the County will be required to comply with all conditions of funding. The engineer preparing this report is informed by the County that the DFA has not issued or committed to the issuance of such SADW grant funding. Therefore, the proposed water rates set forth in this report, including its appendices, do not reflect any reduction or offset on account of such possible SADW grant funding or any portion thereof or take into account satisfaction of any condition of such possible SADW grant funding.

The following draft conditions have been provided by DFA but said conditions are still being finalized and are subject to change.

Conditions precedent to funding agreement execution:

- (1) The County must adopt a resolution authorizing execution of an agreement with the SWRCB for SADW grant funds.
- (2) The County must submit a rate study satisfactory to the DFA.
- (3) The County must furnish all documents deemed necessary by the DFA to complete its financial review.

Special conditions prior to disbursement of funds:

- (1) The County shall adopt rates sufficient to cover the O&M of the Fresno CSA 30 water system, including any accrued unpaid expenses. The adopted rates may include a consideration of the subsidy provided through this Agreement.

Other special conditions:

- (1) The funding agreement may be cancelled if progress towards the long-term solution as described under the Division's Agreement No. D17-02090 is deemed inadequate by the DFA.
- (2) The County must submit financial statements audited by a Certified Public Accountant (CPA) to the DFA annually and within six (6) months of the end of the fiscal year during the term of the funding agreement.
- (3) The County shall promptly notify the DFA if the funding under the agreement is not sufficient to maintain an average residential water rate over a five-year period that is approximately 2.5 percent of the community's median household income.
- (4) The County must provide documentation to support eligible O&M costs incurred after July 24, 2019 and included in the calculation of the fixed rate for accrued unpaid expenses. If sufficient documentation of costs after July 24, 2019 cannot be provided, the amount of assistance toward the fixed rate for negative balance portion of the rates may be reduced. No interest accrued on costs incurred under the DFA Agreement No. D17-02090 are eligible for reimbursement.

- (5) The County shall submit disbursement requests no less frequently than quarterly.
- (6) The County acknowledges and understands that no advance payment provisions are applicable to the terms of the funding agreement. Eligible costs will be reimbursed in accordance with the terms of the agreement.
- (7) The County shall establish and maintain a minimum operating/replacement reserve and emergency reserve for the duration of the agreement and shall promptly submit documentation of the establishment of these reserves to the SWRCB.
- (8) The County shall modify the format of its water bills to ensure customers are informed about how the amount due was calculated and to provide residents with the guidance needed to make informed decisions on water usage. The information must be provided in English and Spanish.
- (9) The County agrees to regularly inform residents of the subsidy provided by the SWRCB by indicating the amount subsidized with each water bill. The information may be included in the water bill or attached thereto and must be provided in English and Spanish.

Grant proceeds would be used to reduce monthly customer water bills only for a period of 5 years. Monthly water charges would be calculated based on the fixed and variable rates and customer water usage. The subsidy amount would be listed on the water bill and deducted from the calculated water charge. The total amount due would be the total charge less the subsidy. The County will submit disbursement requests on a quarterly basis to be reimbursed by the SWRCB for the subsidy amount.

The fixed water charge will be divided into two parts: (1) unpaid expenses and (2) operating cost. Grant proceeds would pay for all or part of the operating portion of the fixed charge. Each customer would still be responsible for paying the difference between the SWRCB funding and the adopted fixed rate as established in this report. Grant proceeds would also pay for the first 5000 gallons of water sold to each customer. Each customer would still be responsible for paying the variable charges for any difference between water used and SWRCB reimbursed amount.

6 Proposed Water Rates

6.1 Cash Flow Analysis

A 5-year cash flow model was developed to determine the revenue requirement to fund budgetary operating costs, non-operating costs and target reserves. Two cash flow scenarios were reviewed for the water rate analysis. The first scenario is based on operating expenses for continued operation of the SWTP in year 1 and 2 and operation of the new groundwater wells and manganese treatment system in year 3, 4 and 5. The second scenario is based on operating expenses for continued operation of the SWTP in all 5 years. The County will need to continue charging rates that will recover the higher operating cost of the SWTP if the new groundwater wells are not in service on schedule. The second scenario was developed so that water rates can be calculated for year 3, 4 and 5 based on continued SWTP operation. The cash flow analysis is included in Appendix B and explained below:

- The beginning operating reserve in year 1 is zero since the water system is currently operating in a deficit.
- Interest is earned on future operating reserve balances at an estimated average rate of 1.5%. The interest rate is based a conservative estimate of County pooled funds rates using historic rates.
- Operating expenses are escalated by 4% each year to account for price inflation.
- In year 1, revenue is initially as projected to cover the total expense for operation of the SWTP. In year 3, which is estimated to be the start of the transition to groundwater, the revenue is projected to cover the total expense for operation of groundwater wells and manganese treatment system. The transition will only occur upon such a time that the groundwater system is complete. Revenue amounts are escalated by 2.00% in each subsequent year to meet the revenue requirement during the 5-year period. Upon the transition from surface water to groundwater, the annual escalations applicable in that fiscal year only, is a decrease by 15.52%.
- The Department of Public Works and Planning intends to recommend that the Board of Supervisors provide a loan from the County Service Area Revolving Fund to pay the negative cash balance and unpaid held charges. The principal and interest amount for repayment over the 5-year rate period is included in the cash flow analysis.
- The operating reserve is set at 50% of the average previous 3-year operating and maintenance total expenditures. The operating reserve is based on the operating cost for the last 3 years when the groundwater wells will be in service.
- Funds are set-aside and added to the equipment replacement reserve each year.
- The revenue requirement was determined by setting the revenue at amounts sufficient to pay continued operating expenses for the SWTP, future operating expense of the groundwater wells and payment of outstanding expenses with enough surplus revenue each year to build reserves to the minimum total reserve amount by Year 5.

6.2 Water Rate Determination

Proposed water rate calculations are included in Appendix C. The revenue is segregated into fixed and variable rates based on the cost distributions shown in Table 3-1 and Table 3-2 for groundwater system operation and interim SWTP operation, respectively. Water rates were calculated for both scenarios discussed in the previous section. The fixed and variable water rate calculations are explained below.

- **Fixed Charge:** The total annual revenue is multiplied by the percent fixed rate to calculate the total fixed revenue requirement. The total fixed revenue is divided by the total equivalent dwelling units (EDU). Services for single-family homes are charged a fixed rate for 1 EDU. Non-residential and services with multiple homes are charged based on the total number of EDUs for each metered service connection. The fixed rate for each service is charged to customers each month independent of water usage.
 - **Components of Fixed Charge:** The fixed charge for each customer class is divided into two parts (as explained in Section 5): (1) unpaid expenses and (2) operating cost.

- **Variable Charge:** The total annual revenue is multiplied by the percent variable rate to calculate total variable revenue requirement. The total variable revenue is divided by the average annual water usage. All water customers, regardless of service class, are charged at the variable water rate (dollars per 1,000 gallons used). While the SWTP continues to be in operation, the variable charge for each customer class is divided into two parts: (1) operations and (2) commodity.
 - **Operations:** The operations charge includes recovery of variable operating costs only.
 - **Commodity:** The commodity charge is the cost to purchase surface water from WWD adjusted for water loss. For every 1 gallon of water delivered to customers, 1.1 gallons of surface water must be purchased from WWD to provide sufficient water for the treatment process. The cost to purchase surface water is currently \$325.22 per acre-foot as of March 1, 2023. Therefore, the cost to supply water to customers would be \$357.74 per acre-foot (\$1.10 per 1000 gallon) after applying a water loss factor of 1.1. The cost to purchase surface water varies seasonally. The variable commodity charge will be adjusted when WWD rates change to recover actual costs whenever surface water rates change. After the groundwater wells are in service, the commodity charge will be eliminated.

6.3 Summary of Proposed Water Rates

The proposed 5-year water rate schedule is included in Appendix D. Water rate schedules are provided for the following scenarios: (1) continued operation of the SWTP until year 3 when the new groundwater wells and manganese treatment system is anticipated to be in service, and (2) continual operation of the SWTP for all 5 years in the event the new system is not in service on schedule.

Appendices

Appendix A: Summary of Budgetary Operating Costs and Reserves

Table A-1
ESTIMATE OF EXPENSES FOR WELLS AND MANGANESE TREATMENT

Expense Item	Assumed Values	Combined Expense		CSA 30 Expense Allocation		CSA 32 Expense	
		Monthly	Annual	Allocation	Annual	Allocation	Annual
Professional and Specialized Services							
Administrative Labor							
Hours per week	4						
Hourly labor rate	\$81						
Total expense		\$1,404	\$16,848	40%	\$6,739	60%	\$10,109
Operator Labor & Travel Expense							
Site visits per week	4						
Hours per site visit	4						
Travel cost per trip	\$71						
Hourly labor rate	\$81						
Total expense		\$6,848	\$82,181	40%	\$32,872	60%	\$49,308
Laboratory Testing							
Cost per test	\$35						
Manganese							
Tests per year	40						
Cost			\$1,400	50%	\$700	50%	\$700
Other							
Tests per year	28						
Cost			\$980	50%	\$490	50%	\$490
Total lab testing expense					\$1,190		\$1,190
Total P&S Services			\$101,409		\$40,802		\$60,607
Maintenance & Repairs							
CSA 30 budgeted amount					\$6,450		
CSA 32 budgeted amount							\$7,300
Total Maintenance & Repairs					\$6,450		\$7,300
Utilities							
Electricity (see energy usage calculations)					\$10,692		\$23,924
Total Utilities					\$10,692		\$23,924
Chemicals							
Chlorine							
Cost per gallon	\$4.00						
Gallons per year	816			276	\$1,104	540	\$2,160
Delivery charges	\$200						
Deliveries per year	16			8	\$1,600	8	\$1,600
Total Chemicals					\$2,704		\$3,760
Total					\$60,647		\$95,591

Notes:

1. Travel cost is \$0.79/mile x 90 miles.
2. Pump equipment cost based on cost opinion.
3. Maintenance and repair cost includes media replacement.
4. Labor expense is allocated to CSA 30 and 32 based on proportionate water system size.
5. Maintenance & Repair budget developed with input from Fresno County.

Table A-2
CSA 30 - El Porvenir
ENERGY USAGE CALCULATIONS

Equipment	Value	Notes
Well Pumps		
Water Pumped Annually (MG)	6.2	Average annual water usage (at customer meter) over last 4 years
Additional 10% Pumping for Filter Backwash	0.6	
Total Pumped Annually (MG)	6.8	
Pump Flow Rate (gpm)	61.1	Well 1 and 2 design flow rate
Annual Pumping Time (hrs)	1,860	
Motor Power (kW)	14.9	20 HP motor
Total Energy Usage (kW-hr)	27,766	
Booster Pumps		
Water Pumped Annually (MG)	6.2	Total pumping into distribution system. Losses for distribution system leaks are not included
Pump Flow Rate (gpm)	111	Duty booster pumps design flow rate
Annual Pumping Time (hrs)	931	
Motor Power (kW)	7.5	10 HP motor
Total Energy Usage (kW-hr)	6,947	
Other Equipment		
Additional Energy Usage (Estimated)	10%	Other equipment (compressor, high capacity pump, chemical pump, lights, etc.)
Total Energy Usage (kW-hr)	3,471	
Total Energy Usage (kW-hr)	38,185	
\$ per kW-hr (to be verified)	\$0.280	Average energy unit cost for existing system per PG&E records
Total Energy Usage		
Estimated Total Annual Energy Cost	\$10,692	
<i>Estimated Average Monthly Energy Cost</i>	<i>\$891</i>	

Table A-3
CSA 30 - El Porvenir
EQUIPMENT REPLACEMENT RESERVE

Equipment	Quantity	Estimated Cost	Total Reserve	Life Expect. (Years)	Annual Set-Aside
Well Pump and Motor	2	\$35,000	\$70,000	25	\$2,800
Duty Booster Pump	2	\$15,000	\$30,000	25	\$1,200
Air Compressor	1	\$3,500	\$3,500	15	\$233
Dosing Pump	1	\$2,500	\$2,000	10	\$200
PLC/HMI	1	\$5,000	\$5,000	10	\$500
AC Unit	1	\$3,500	\$3,500	10	\$350
Total			\$114,000		\$5,283

Rounded \$5,300

Notes:

1. Equipment life expectancies taken from State Water Board equipment life expectancy guidance.

Appendix B: Future Cash Flow Projection

Table B-1

CSA 30 - El Porvenir

CASH FLOW PROJECTION - SURFACE WATER (FIRST 2 YEARS) AND GROUNDWATER (LAST 3 YEARS)

	July 1, 2023	July 1, 2024	July 1, 2025	July 1, 2026	July 1, 2027
Rate Adjustment %		2.00%	-15.52%	2.00%	2.00%
Beginning Operating Reserve	\$0	\$13,053	\$26,529	\$39,895	\$54,171
REVENUES					
Water Rate	\$217,977	\$222,300	\$187,790	\$191,500	\$195,300
Interest Earnings 1.5%	\$0	\$200	\$400	\$600	\$800
Other	\$0	\$0	\$0	\$0	\$0
Subtotal	\$217,977	\$222,500	\$188,190	\$192,100	\$196,100
EXPENSES					
Operating & Maintenance		Surface Water		Groundwater	
Professional & Specialized Services 4.0%	\$54,600	\$56,800	\$45,000	\$46,800	\$48,700
Utilities & Chemicals 4.0%	\$5,700	\$5,900	\$14,800	\$15,400	\$16,000
Maintenance & Repairs 4.0%	\$38,100	\$39,600	\$7,200	\$7,500	\$7,800
Other Expenses 4.0%	\$5,800	\$6,000	\$7,100	\$7,400	\$7,700
Subtotal	\$104,200	\$108,300	\$74,100	\$77,100	\$80,200
Payment of Unpaid Expenses					
Negative Cash Balance & Held Charges	\$100,724	\$100,724	\$100,724	\$100,724	\$100,724
Subtotal	\$100,724	\$100,724	\$100,724	\$100,724	\$100,724
Total Expenses	\$204,924	\$209,024	\$174,824	\$177,824	\$180,924
Revenue Less Expenses	\$13,053	\$13,476	\$13,366	\$14,276	\$15,176
Ending Operating Reserve	\$13,053	\$26,529	\$39,895	\$54,171	\$69,347
Target Reserve					
Min Operating Reserve (50% of 3 year avg O&M)	\$38,600	\$38,600	\$38,600	\$38,600	\$38,600
Equipment Replacement	\$5,300	\$10,600	\$15,900	\$21,200	\$26,500
Subtotal	\$43,900	\$49,200	\$54,500	\$59,800	\$65,100
Actual Reserve Less Target (See Note 2)	(\$30,847)	(\$22,671)	(\$14,605)	(\$5,629)	\$4,247

Notes:

1. Target operating reserve is based on the average operating cost during the last 3 years.
2. Amount that actual reserve are above or below target reserve.
3. In year 1, revenue is initially as projected to cover the total expense for operation of the SWTP. In year 3, which is estimated to be the start of the transition to groundwater, the revenue is projected to cover the total expense for operation of groundwater wells and manganese treatment system. The transition will only occur upon such a time that the groundwater system is complete. Revenue amounts are escalated by 2.00% in each subsequent year to meet the revenue requirement during the 5-year period. Upon the transition from surface water to groundwater, the annual escalations applicable in that fiscal year only, is a decrease by 15.52%.

Table B-2
CSA 30 - El Porvenir
CASH FLOW PROJECTION - SURFACE WATER (ALL 5 YEARS)

	July 1, 2023	July 1, 2024	July 1, 2025	July 1, 2026	July 1, 2027
Rate Adjustment %		2.00%	2.00%	2.00%	2.00%
Beginning Operating Reserve	\$0	\$13,053	\$26,529	\$40,305	\$54,381
REVENUES					
Water Rate	\$217,977	\$222,300	\$226,700	\$231,200	\$235,800
Interest Earnings 1.5%	\$0	\$200	\$400	\$600	\$800
Other	\$0	\$0	\$0	\$0	\$0
Subtotal	\$217,977	\$222,500	\$227,100	\$231,800	\$236,600
EXPENSES					
Operating & Maintenance	Surface Water				
Professional & Specialized Services 4.0%	\$54,600	\$56,800	\$59,100	\$61,500	\$64,000
Utilities & Chemicals 4.0%	\$5,700	\$5,900	\$6,100	\$6,300	\$6,600
Maintenance & Repairs 4.0%	\$38,100	\$39,600	\$41,200	\$42,800	\$44,500
Other Expenses 4.0%	\$5,800	\$6,000	\$6,200	\$6,400	\$6,700
Subtotal	\$104,200	\$108,300	\$112,600	\$117,000	\$121,800
Payment of Unpaid Expenses					
Negative Cash Balance & Held Charges	\$100,724	\$100,724	\$100,724	\$100,724	\$100,724
Subtotal	\$100,724	\$100,724	\$100,724	\$100,724	\$100,724
Total Expenses	\$204,924	\$209,024	\$213,324	\$217,724	\$222,524
Revenue Less Expenses	\$13,053	\$13,476	\$13,776	\$14,076	\$14,076
Ending Operating Reserve	\$13,053	\$26,529	\$40,305	\$54,381	\$68,457
Target Reserve					
Min Operating Reserve (50% of 3 year avg O&M)	\$38,600	\$38,600	\$38,600	\$38,600	\$38,600
Equipment Replacement	\$5,300	\$10,600	\$15,900	\$21,200	\$26,500
Subtotal	\$43,900	\$49,200	\$54,500	\$59,800	\$65,100
Actual Reserve Less Target (See Note 2)	(\$30,847)	(\$22,671)	(\$14,195)	(\$5,419)	\$3,357

Notes:

1. Target operating reserve is based on the average operating cost during the last 3 years.
2. Amount that actual reserve are above or below target reserve.
3. In year 1, revenue is initially as projected to cover the total expense for operation of the SWTP. Revenue amounts are escalated by 2.00% in each subsequent year to meet the revenue requirement during the 5-year period.

Appendix C: Water Rate Calculation

Table C-1
CSA 30 - El Porvenir
PROPOSED WATER RATE CALCULATIONS
SURFACE WATER (FIRST 2 YEARS) AND GROUNDWATER (LAST 3 YEARS)

	Current Rate	July 1, 2023	July 1, 2024	July 1, 2025	July 1, 2026	July 1, 2027	
Total Rate Revenue		\$217,977	\$222,300	\$187,790	\$191,500	\$195,300	
Rate Adjustment %			2.00%	-15.52%	2.00%	2.00%	
Fixed Rate Revenue		\$193,257	\$197,090	\$169,425	\$172,772	\$176,201	
Unpaid Expenses Portion		\$100,724	\$100,724	\$100,724	\$100,724	\$100,724	
Operating Expense Portion		\$92,533	\$96,366	\$68,701	\$72,048	\$75,477	
% Fixed		89%	89%	90%	90%	90%	
Total EDUs		56.0	56.0	56.0	56.0	56.0	
Fixed Rate per EDU							
Annual		\$3,451.02	\$3,519.46	\$3,025.45	\$3,085.22	\$3,146.44	
Total Monthly Fixed Rate		\$287.58	\$293.29	\$252.12	\$257.10	\$262.20	
Unpaid Expenses Portion		\$149.89	\$149.89	\$149.89	\$149.89	\$149.89	
Operating Cost Portion		\$137.70	\$143.40	\$102.23	\$107.21	\$112.32	
Customer Classification	EDU						
Residential	1.0	\$104.21	\$287.58	\$293.29	\$252.12	\$257.10	\$262.20
Unpaid Expenses Portion			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Operating Cost Portion			\$137.70	\$143.40	\$102.23	\$107.21	\$112.32
Out of District	1.0	\$104.21	\$287.58	\$293.29	\$252.12	\$257.10	\$262.20
Unpaid Expenses Portion			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Operating Cost Portion			\$137.70	\$143.40	\$102.23	\$107.21	\$112.32
Variable Rate -Operations		\$24,720	\$25,210	\$18,365	\$18,728	\$19,099	
% Variable		11%	11%	10%	10%	10%	
Annual Water Sales (MG)		6.2	6.2	6.2	6.2	6.2	
Rate per 1,000 gallons	-	\$3.99	\$4.07	\$2.96	\$3.02	\$3.08	
Variable Rate - Commodity							
Rate per 1,000 gallons	\$2.48	Actual Cost		-	-	-	

Notes:

1. Commodity variable rate is the cost to purchase surface water from Westlands. Actual cost will vary seasonally based on availability of water. CSA customer cost would be \$1.10 per 1000 gallons based on Westlands rates as of March 1, 2023. Westlands rates shall be adjusted by a factor of 1.1 to account for water loss. Commodity charge to be eliminated after groundwater wells are in service.
2. New water rates are expected to go into effect on July 1, 2023.
3. In year 1, revenue is initially as projected to cover the total expense for operation of the SWTP. In year 3, which is estimated to be the start of the transition to groundwater, the revenue is projected to cover the total expense for operation of groundwater wells and manganese treatment system. The transition will only occur upon such a time that the groundwater system is complete. Revenue amounts are escalated by 2.00% in each subsequent year to meet the revenue requirement during the 5-year period. Upon the transition from surface water to groundwater, the annual escalations applicable in that fiscal year only, is a decrease by 15.52%.

Table C-2
CSA 30 - El Porvenir
PROPOSED WATER RATE CALCULATIONS - SURFACE WATER (ALL 5 YEARS)

	Current Rate	July 1, 2023	July 1, 2024	July 1, 2025	July 1, 2026	July 1, 2027	
Total Rate Revenue		\$217,977	\$222,300	\$226,700	\$231,200	\$235,800	
Rate Adjustment %			2.00%	2.00%	2.00%	2.00%	
Fixed Rate Revenue		\$193,257	\$197,090	\$200,991	\$204,980	\$209,059	
Unpaid Expenses Portion		\$100,724	\$100,724	\$100,724	\$100,724	\$100,724	
Operating Cost Portion		\$92,533	\$96,366	\$100,267	\$104,256	\$108,335	
% Fixed		89%	89%	89%	89%	89%	
Total EDUs		56.0	56.0	56.0	56.0	56.0	
Fixed Rate per EDU							
Annual		\$3,451.02	\$3,519.46	\$3,589.12	\$3,660.36	\$3,733.19	
Total Monthly Fixed Rate		\$287.58	\$293.29	\$299.09	\$305.03	\$311.10	
Unpaid Expenses Portion		\$149.89	\$149.89	\$149.89	\$149.89	\$149.89	
Operating Cost Portion		\$137.70	\$143.40	\$149.21	\$155.14	\$161.21	
Customer Classification	EDU						
Residential	1.0	\$104.21	\$287.58	\$293.29	\$299.09	\$305.03	\$311.10
Unpaid Expenses Portion			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Operating Cost Portion			\$137.70	\$143.40	\$149.21	\$155.14	\$161.21
Out of District	1.0	\$104.21	\$287.58	\$293.29	\$299.09	\$305.03	\$311.10
Unpaid Expenses Portion			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Operating Cost Portion			\$137.70	\$143.40	\$149.21	\$155.14	\$161.21
Variable Rate -Operations		\$24,720	\$25,210	\$25,709	\$26,220	\$26,741	
% Variable		11%	11%	11%	11%	11%	
Annual Water Sales (MG)		6.2	6.2	6.2	6.2	6.2	
Rate per 1,000 gallons	-	\$3.99	\$4.07	\$4.15	\$4.23	\$4.31	
Variable Rate - Commodity							
Rate per 1,000 gallons	\$2.48	Actual Cost					

Notes:

1. Commodity variable rate is the cost to purchase surface water from Westlands. Actual cost will vary seasonally based on availability of water. CSA customer cost would be \$1.10 per 1000 gallons based on Westlands rates as of March 1, 2023. Westlands rates shall be adjusted by a factor of 1.1 to account for water loss. Commodity charge to be eliminated after groundwater wells are in service.
2. New water rates are expected to go into effect on July 1, 2023.
3. In year 1, revenue is initially as projected to cover the total expense for operation of the SWTP. Revenue amounts are escalated by 2.00% in each subsequent year to meet the revenue requirement during the 5-year period.

Table C-3

CSA 30 - El Porvenir

FORMULA FOR WATER RATE CALCULATION

Fixed Rate

[Monthly Fixed Rate] = [Total Fixed Expenses] / [Total EDUs] / [12 months]

[Total Fixed Expenses] = Total fixed operating and non-operating expenses from Table 3-1

Note: Payment of unpaid expenses is included in the non-operating expense. Payment amount is summarized in Table 2-7 (see calculation in Appendix Table C-5).

[Total EDUs] = See Table 2-4

Variable Rate

[Usage Rate per 1000 gal] = [Total Variable Expenses] / [Average Annual Water Sales in MG / 1000]

[Total Variable Expenses] = Total variable operating and non-operating expenses from Table 3-1

[Average Annual Water Sales in MG] = Average water usage of 6.2 MG from Table 2-3.

Variable Rate - Commodity

The commodity charge is the cost to purchase surface water from Westlands Water District (WWD). Every 1 acre-foot (AF) of treated surface water produced by the existing treatment plant requires an estimated 1.1 acre-feet of surface water supply to account for water losses associated with filter backwashing for the surface water treatment system.

[WWD Surface Water Cost] = WWD surface water cost per 1 AF charged to the County.

[Customer Surface Water Charge] = Charge to customers per 1 AF of surface water adjusted for water loss.

[Usage Rate] = Charge to customer per unit (1000 gallon) of water used (1 AF = 325.8 units).

Adjusted Fixed Rate with O&M Subsidy

(1) If O&M funding is secured from the state to subsidize water rates, the [Total Fixed Expenses] will be reduced by the subsidy amount received from the state and the Fixed Rate will be recalculated using the formula above.

Table C-4
CSA 30 - El Porvenir
EXAMPLE WATER RATE CALCULATION FOR JULY 1, 2025 WATER RATE

Fixed Rate

[Monthly Fixed Rate] = $\$169,425.00 / 56.0 / 12 = \252.12

[Total Fixed Expenses] = \$169,425.00

Note: Payment of unpaid expenses is included in the non-operating expense. Payment amount is summarized in Table 2-7 (see calculation in Appendix Table C-5).

[Total EDUs] = 56.0

Variable Rate

[Usage Rate] = $\$18,365.00 / 6.2 / 1,000 = \2.96 per 1000 gallons

[Total Variable Expenses] = \$18,365.00

[Average Annual Water Sales in MG] = 6.2 MG

Variable Rate - Commodity

The commodity charge is the cost to purchase surface water from Westlands Water District (WWD). Every 1 acre-foot (AF) of treated surface water produced by the existing treatment plant requires an estimated 1.1 acre-feet of surface water supply to account for water losses associated with filter

[WWD Surface Water Cost] = \$325.22 per 1 AF (supplied to water system)

Note: WWD unit cost to purchase surface as of March 1, 2023. Unit cost changes seasonally. Variable commodity charges to customers will be based on actual cost of water.

[Customer Surface Water Charge] = $\$357.74$ per 1 AF

Note: Customer surface water charge is multiplied by 1.1 water loss factor.

[Usage Rate] = $\$1.10$ per 1000 gallons

Adjusted Fixed Rate with O&M Subsidy

(1) If O&M funding is secured from the State Water Board to subsidize water rates, the [Total Fixed Expenses] will be reduced by the subsidy amount received from the State Water Board and the Fixed Rate will be recalculated using the formula above.

Table C-5
CSA 30 - El Porvenir
PAYMENT CALCULATION

Payment Formula

Payment amount is calculated assuming quarterly payments using the following equation:

$$P = \frac{r(PV)}{1 - (1 + r)^{-n}}$$

Terms:

P = Quarterly payment

PV = Present Value of Principal (Total Negative Cash Balance and Held Charges shown in Table 2-7)

r = rate per period (County pooled funds rate of 2.027% / 4 quarters)

n = number of periods (4 quarters x 5 years) = 20 periods

[Annual Payment Amount] = [P] x 4 quarters

Calculation:

P = \$25,181.02

PV = \$477,790.92

r = 0.507%

n = 20

[Annual Payment Amount] = \$100,724.09

Appendix D: Proposed Water Rate Schedule

Table D-1

CSA 30 - El Porvenir

PROPOSED WATER RATE SUMMARY - SURFACE WATER (FIRST 2 YEARS) AND GROUNDWATER (LAST 3 YEARS)

		Current Rate	Proposed Rates				
			July 1, 2023	July 1, 2024	July 1, 2025	July 1, 2026	July 1, 2027
CSA 30 - EL PORVENIR							
Fixed Rate							
Customer Classification	EDU						
<u>Residential</u>	1.0	<u>\$104.21</u>	<u>\$287.58</u>	<u>\$293.29</u>	<u>\$252.12</u>	<u>\$257.10</u>	<u>\$262.20</u>
Fixed Rate - Unpaid Expenses			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Fixed Rate - Operations			\$137.70	\$143.40	\$102.23	\$107.21	\$112.32
<u>Out of District</u>	1.0	<u>\$104.21</u>	<u>\$287.58</u>	<u>\$293.29</u>	<u>\$252.12</u>	<u>\$257.10</u>	<u>\$262.20</u>
Fixed Rate - Unpaid Expenses			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Fixed Rate - Operations			\$137.70	\$143.40	\$102.23	\$107.21	\$112.32
Variable Rate - Operations							
Rate per 1,000 gallons		-	\$3.99	\$4.07	\$2.96	\$3.02	\$3.08
Variable Rate - Commodity							
Rate per 1,000 gallons		\$2.48	See Note 1		-	-	-

Notes:

1. Commodity variable rate is the cost to purchase surface water from Westlands. Actual cost will vary seasonally based on availability of water. CSA customer cost would be \$1.10 per 1000 gallons based on Westlands rates as of July 1, 2023. Westlands rates shall be adjusted by a factor of 1.1 to account for water loss. Commodity charge to be eliminated after groundwater wells are in service.

2. New water rates are expected to go into effect on July 1, 2023.

Table D-2
CSA 30 - El Porvenir
PROPOSED WATER RATE SUMMARY - SURFACE WATER (ALL 5 YEARS)

		Current Rate	Proposed Rates				
			July 1, 2023	July 1, 2024	July 1, 2025	July 1, 2026	July 1, 2027
CSA 30 - EL PORVENIR							
Fixed Rate							
Customer Classification	EDU						
<u>Residential</u>	1.0	<u>\$104.21</u>	<u>\$287.58</u>	<u>\$293.29</u>	<u>\$299.09</u>	<u>\$305.03</u>	<u>\$311.10</u>
Fixed Rate - Unpaid Expenses			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Fixed Rate - Operations			\$137.70	\$143.40	\$149.21	\$155.14	\$161.21
<u>Out of District</u>	1.0	<u>\$104.21</u>	<u>\$287.58</u>	<u>\$293.29</u>	<u>\$299.09</u>	<u>\$305.03</u>	<u>\$311.10</u>
Fixed Rate - Unpaid Expenses			\$149.89	\$149.89	\$149.89	\$149.89	\$149.89
Fixed Rate - Operations			\$137.70	\$143.40	\$149.21	\$155.14	\$161.21
Variable Rate - Operations							
Rate per 1,000 gallons		-	\$3.99	\$4.07	\$4.15	\$4.23	\$4.31
Variable Rate - Commodity							
Rate per 1,000 gallons		\$2.48	See Note 1				

Notes:

1. Commodity variable rate is the cost to purchase surface water from Westlands. Actual cost will vary seasonally based on availability of water. CSA customer cost would be \$1.10 per 1000 gallons based on Westlands rates as of July 1, 2023. Westlands rates shall be adjusted by a factor of 1.1 to account for water loss. Commodity charge to be eliminated after groundwater wells are in service.

2. New water rates are expected to go into effect on July 1, 2023.