

ZONE 7

WATER AGENCY

Untreated Water Rate Study

Final Report / October 2021

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Executive Summary

Agency Background

The Zone 7 Water Agency (Agency) was established in 1957 to provide untreated water to support agriculture and treated wholesale water to the Livermore-Amador Valley area. In 1961, the Agency contracted for State Water Project (SWP) water deliveries through the South Bay Aqueduct.

The Agency's water resources include imported water from the SWP, local groundwater storage, surface water captured in the Del Valle Reservoir, and offsite groundwater banking in Kern County. Historically, the majority of the Agency's water demand has been met by imported water from the SWP; approximately 33 percent of the current water demand is met through SWP water.

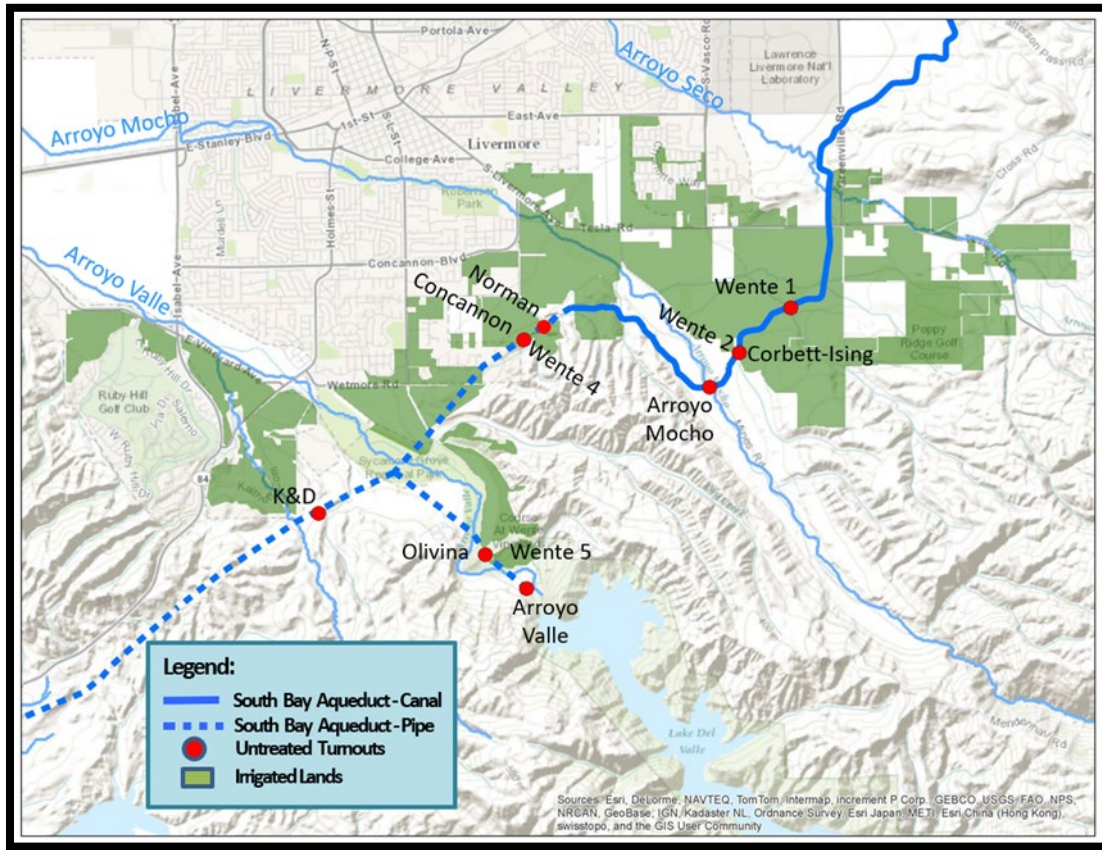
The Agency began delivering untreated water to its service area from the California Department of Water Resources (DWR) via the South Bay Aqueduct in 1962. Over the years, deliveries increased with the agricultural development of South Livermore. The Agency provides untreated water service to 81 untreated water users that may collectively request water deliveries of up to 8,104 acre-feet (AF) per year.

Historically, the Agency has had untreated water contracts with 81 separate users; however, only seven of these contractors receive water from the Agency directly from a South Bay Aqueduct turnout. These seven water users are referred to as "turnout water users." The remaining 74 "remote water users" receive their water deliveries through the turnout water users' respective conveyance facilities. The Agency's current practice is to invoice the seven turnout water users for all water delivered through the turnouts, which includes water wheeled, or delivered through their respective facilities, to remote water users. The turnout water users, in turn, invoice the respective individual remote water users.

The Agency has historically had contracts with the separate users but transitioned from individual contracts to the Rules and Regulations Governing Water Service in 2011. The Rules and Regulations Governing Water Service reflect the actual relationship that the Agency has with its untreated water customers. This transition allowed the Agency to more effectively administer the untreated water program by clearly documenting and maintaining a maximum annual allocation for each water user and provide a process for water transfers within the service area.

Figure 1 shows the map of the untreated water turnouts and delivery via the South Bay Aqueduct.

Figure 1: Map of Untreated Water Turnouts



Study Background

In 2021, the Agency engaged Raftelis to conduct an Untreated Water Rate Study. The study involved reviewing the untreated water rate structure, analyzing the potential impacts of certain policy decisions, recommending a framework for a water reconciliation charge, and developing untreated water rates.

The major objectives of the study include the following:

- » Ensure financial sufficiency for the untreated water enterprise to meet water supply and program costs
- » Develop Agency overhead allocation and analyze rate impacts of including overhead costs
- » Recommend and develop a water reconciliation charge framework
- » Develop untreated and temporary untreated water rates for calendar year (CY) 2022
- » Maintain fairness and equitability of rates while minimizing customer impacts

Current Rates

The Agency’s current untreated water rates include two components: an untreated water rate for normal water service and a temporary untreated water rate for customers that require temporary service and are unable to obtain water from other areas in the valley. **Table 1** shows the current untreated water rates, which the Agency adopted in CY 2020. The Agency did not update its rates for CY 2021 due to the impacts of the COVID-19 pandemic.

Table 1: Current Untreated Water Rates (CY 2021)

Current Untreated Water Rates (\$/AF)	CY 2021
Untreated Water Rate	\$173
Temporary Untreated Water Rate	\$886

Planned Water Deliveries

Table 2 shows the planned water deliveries for untreated and treated water customers in CY 2022 and the percent of total deliveries for each service.

Table 2: Planned Water Deliveries (CY 2022)

Planned Water Deliveries	Total AF	% of Total
Untreated Water	5,800	14.9%
Treated Water	33,200	85.1%
Total	39,000	100.0%

Recommendations

The Agency’s current untreated water rate is a variable charge per AF of water usage and includes two components: a water supply management staff cost component and a water supply cost component. However, these two components do not represent the entire costs of the system, which also include overhead costs (also known as indirect costs, which include accounting, human resources, payroll, governance, etc.). In addition, the untreated water rates are adopted once a year and are designed to recover the estimated costs of the next calendar year, but the Agency does not have a formal mechanism to true up fluctuations in water supply management staff costs, water supply costs, and/or actual water deliveries.

Raftelis recommends the following changes to ensure financial sufficiency for the untreated water system and to establish greater equity between the treated and untreated water systems:

- » Including overhead costs that are allocated to untreated water to the untreated water rate calculation
- » Adopting a water reconciliation framework that can be used in future years to true-up costs and deliveries
- » Implementing a water reconciliation charge, which can be either an additional charge or credit depending on fluctuations in costs and/or deliveries in prior years
- » Maintaining the Agency’s single year rate implementation schedule since there is no separate untreated water reserve and fluctuations in costs and/or deliveries will be captured by the water reconciliation framework

Adopted Rates

Table 3 shows the adopted untreated water rates based on the prior recommendations, including the water reconciliation charge/(credit) based on the recommended policy framework. These rates were adopted by the Zone 7 Board of Directors on October 20, 2021 (Resolution No 21-77).

Table 3: Adopted Untreated Water Rates (CY 2022)

Adopted Untreated Water Rates (\$/AF)	CY 2022
Untreated Water Rate	\$226
2020 Water Reconciliation Charge/(Credit)	(\$22)
Untreated Water Rate (Net of Reconciliation)	\$204
Temporary Untreated Water Rate	\$977

Water Supply Management

This section outlines the Agency's water supply management staff costs and the associated costs & descriptions of the various staff programs.

Staff Programs

The Agency is committed to providing a reliable supply of high-quality water for municipal, industrial, and agricultural customers and spends a considerable amount of time managing the water supply portfolio. Staff program costs are calculated on actual hours worked by Agency staff and an hourly rate of pay.

The following section describes the various staff programs and their roles in the untreated water system. All of the following staff programs, except for the Untreated Water Program, serve both treated and untreated water customers.

State Water Project Program

Administration of the SWP water supply.

Untreated Water Program

Execution, management, and administration of the Untreated Water Program.

Water Supply and Storage Planning

Operational planning of the water utility and the water supply, day-to-day water supply management activities, general administration and support related to the water storage program, water supply and conveyance, and other water supplies.

Cawelo Banked Water Program

Administration, operation, and maintenance of Cawelo water supply, including recovery and storage.

Semitropic Banked Water Program

Administration, operation, and maintenance of Semitropic water supply, including recovery and storage.

Labor Costs

Agency staff provided estimated water supply management staff costs for each of the programs, which include hourly pay and hours worked per role for CY 2022. The detailed water supply management staff costs by program are included in the **Technical Appendix**.

Table 4 shows the water supply management staff cost summary for all staff programs and the allocation to the untreated water system. Untreated Water Program costs are only distributed to the untreated water system, while the remaining staff programs benefit both treated and untreated wholesale customers dependent on the volume of planned water deliveries. The percent of costs allocated to untreated water customers (except for Untreated Water Program costs) is based on the proportion of planned water deliveries in CY 2022 from **Table 2**.

Table 4: Water Supply Management Staff Cost Summary (CY 2022)

Water Supply Management Staff Costs Summary	Total Agency	% To Untreated	Total Untreated
State Water Project Program	\$124,090	14.9%	\$18,454
Untreated Water Program	\$52,370	100.0%	\$52,370
Water Supply and Storage Planning	\$607,275	14.9%	\$90,313
Cawelo Banked Water Program	\$1,350	14.9%	\$201
Semitropic Banked Water Program	\$7,645	14.9%	\$1,137
Total - Water Supply Management Staff Costs	\$792,730	20.5%	\$162,475

Agency Overhead

This section outlines the Agency overhead costs and calculation. The resulting overhead percentage is applied to the water supply management staff costs derived in the previous section.

Overhead Costs and Calculation

Overhead is part of the Agency’s cost of doing business. Overhead consists of the costs of central administration and is shared across the Agency’s departments. Central administration includes accounting, human resources, payroll, governance (Board of Directors), etc. Overhead includes salaries, wages, and benefits of personnel in these central administrative services as well as utilities, supplies, organizational memberships, information technology and legal services, building maintenance, etc.

Agency staff provided total direct labor and indirect costs for all Agency programs, which include Water Utility Support Services, Supply Source and Conveyance, Water Storage, Water Treatment, Water Transmission, Central Administration, and Flood Protection. Direct labor costs are staff hours charged directly to the programs identified above. Indirect overhead costs are charged to the Central Administration program. Detailed Central Administration costs are included in the **Technical Appendix** at the end of this report.

Table 5 shows the total direct and indirect costs as well as the allocation of indirect costs to each program based on the proportion of direct labor costs. For example, the following equation is used to calculate the Central Administration indirect costs for Water Utility Support Services:

$$\$6,007,880 \text{ total Central Administration costs} \times (\$2,946,621 \text{ Water Utility Support Services direct labor costs} / \$13,067,868 \text{ total direct labor costs}) = \$1,354,693$$

Table 5: Agency Overhead Costs

Programs	Direct Labor	Indirect Labor	Central Admin
Water Utility Support Services	\$2,946,621	\$0	\$1,354,693
Supply Source & Conveyance	\$254,831	\$0	\$117,157
Water Storage	\$1,246,437	\$0	\$573,042
Water Treatment	\$6,082,931	\$0	\$2,796,594
Water Transmission	\$905,216	\$0	\$416,168
Central Administration	\$0	\$6,007,880	\$0
Flood Protection	\$1,631,832	\$0	\$750,226
Total - Programs	\$13,067,868	\$6,007,880	\$6,007,880

The Agency overhead represents the indirect costs associated with each dollar of direct labor costs. Raftelis worked closely with Agency staff to determine the relevant programs applicable to the untreated water system, which include Water Utility Support Services, Supply Source and Conveyance, and Water Storage. **All other program costs do not directly apply to the untreated water system.**

Table 6 shows the calculation of the untreated water overhead percentage. To calculate the untreated water overhead percentage, the allocated Central Administration indirect costs for the applicable programs, Water Utility Support Services, Supply Source and Conveyance, and Water Storage, are divided by the total direct labor costs for the same three departments. The resulting percentage of 46 percent represents approximately 46 cents of indirect costs for each dollar of direct labor costs allocated to untreated water.

Table 6: Untreated Water Overhead Percentage Calculation

Untreated Water Programs	Direct Labor	Central Admin
Water Utility Support Services	\$2,946,621	\$1,354,693
Supply Source & Conveyance	\$254,831	\$117,157
Water Storage	\$1,246,437	\$573,042
Total - Untreated Water Programs	\$4,447,889	\$2,044,892
Overhead Percentage		46.0%

Table 7 shows the untreated water system’s portion of overhead costs, which is calculated by multiplying the overhead percentage in **Table 6** with the untreated water supply management staff costs for CY 2022 in **Table 4**.

Table 7: Untreated Water Overhead Costs (CY 2022)

Overhead Costs	Total Untreated
Untreated Water Supply Management Staff Costs	\$162,475
Overhead Percentage	46.0%
Untreated Water Overhead Costs	\$74,697

Water Supply

This section of the report outlines the Agency's water supply sources and costs. Water supply costs are the main driver behind the calculated untreated water rates.

Water Supply Portfolio

The Agency's water sources are used to meet treated and untreated water demand. Treated water demand is from municipal (retailers) and industrial (direct) customers and untreated water demand is from agricultural customers. Excess surface water supplies are placed into storage locally or remotely for future use. Water supply costs are included in the rate calculation for both treated and untreated water deliveries.

State Water Project

- » **Table A**

This source is the Agency's portion of the State Water Project annual allocation and represents the largest portion of Zone 7's "new" water each year. The Agency's maximum allocation is 80,619 AF annually. Each year, the Agency receives a "Table A allocation" representing a percentage of 80,619 AF.

- » **Excess Supplies**

This is officially referred to as "Article 21" water and is surplus water that is made available, in addition to Table A water, when the San Luis Reservoir is full. It is water that would otherwise flow to the Bay.

- » **Carryover**

SWP Table A water rolls over as carryover for use in future years for individual SWP contractors. In most years, this water remains in the San Luis Reservoir, but in wet years such as 2017, the water is gradually converted to SWP water and can no longer be used by the Agency. When water is converted, SWP Article 21 water is offered as surplus water. Each year, the Agency typically reserves 10,000 to 15,000 AF as a carryover to mitigate against fluctuating Table A allocations.

Water Transfers/Exchanges

- » This is water that the Agency purchases through both long-term and short-term (annual) agreements with another entity (e.g., water agency, farm).

- » **Yuba Accord**

Water from this source is available mainly in dry years through an agreement with the DWR and Yuba County Water Agency. The Agency receives approximately 1 percent of available water.

- » **Dry Year Transfer Program**

During dry years, the State Water Contractors negotiate water purchases north of the Delta, which makes additional water available to interested SWP contractors.

Cawelo and Semitropic Banked Water

- » The Agency has agreements with Semitropic Water Storage District and Cawelo Water District in Kern County for 78,000 AF and 120,000 AF of storage capacity, respectively. The Agency recovers water from these banks as needed during dry years (such as 2014 and 2015). Recovered water is delivered via exchange through the South Bay Aqueduct as surface water is conveyed through the Delta.

Lake Del Valle/Local Water

- » The Agency has water rights to Arroyo Valle water captured in Lake Del Valle, which becomes available for use once it has been stored for 30 days. The annual average yield from this source is 7,300 AF. Water captured in Lake Del Valle during the current year needs to be used within the following year.

Local Groundwater

- » The Agency recharges the Livermore Valley groundwater basin with surface water and uses groundwater for peaking conditions, dry years, and emergencies. The Agency only pumps what it has stored; over the last 15 years, the average recharge is 8,000 AF per year and the average pumping rate is 7,300 AF per year. The estimated maximum pumping capacity is 34,000 AF per year. The basin has 126,000 AF of operational storage capacity, which is the storage capacity above historical lows.

Water Supply Costs

The Agency's water supply costs largely depend upon the SWP allocation in any given year. Agency staff provided estimated water supply costs for CY 2022 based upon a 5 percent SWP allocation. However, the actual water supply costs and availability for CY 2022 will not be available until mid-2023.

Table 8 shows the variable unit costs, planned purchases in AF, variable costs, and fixed costs for each water supply source for CY 2022.

Table 8: Water Supply Cost Detail (CY 2022)

Water Supply Costs (CY 2022)	Variable Unit Cost (\$/AF)	Planned Purchases (AF)	Variable Cost	Fixed Costs	Total Costs
Delta Conveyance Project	\$0.00	0	\$0	\$500,000	\$500,000
SWP Transportation	\$95.00	13,050	\$1,239,750	\$0	\$1,239,750
Yuba Accord	\$500.00	866	\$433,000	\$3,000	\$436,000
Dry Year Transfer Program	\$1,000.00	140	\$140,000	\$0	\$140,000
Cawelo Banked Water	\$225.25	10,000	\$2,252,450	\$0	\$2,252,450
Semitropic Banked Water	\$228.53	9,500	\$2,171,000	\$0	\$2,171,000
Semitropic Banked Water O&M	\$0.00	65,000	\$0	\$470,000	\$470,000
Total - Water Supply Costs			\$6,236,200	\$973,000	\$7,209,200
Temporary Water Supply Costs			\$0	\$29,279,388	\$29,279,388

Table 9 shows the water supply cost summary and the allocation to the untreated water system. The percent of costs allocated to untreated water customers is based on the proportion of planned water deliveries in CY 2022 from **Table 2**.

Table 9: Water Supply Cost Summary (CY 2022)

Water Supply Cost Summary	Total Agency	% To Untreated	Total Untreated
Delta Conveyance Project	\$500,000	14.9%	\$74,359
SWP Transportation	\$1,239,750	14.9%	\$184,373
Yuba Accord	\$436,000	14.9%	\$64,841
Dry Year Transfer Program	\$140,000	14.9%	\$20,821
Cawelo Banked Water	\$2,252,450	14.9%	\$334,980
Semitropic Banked Water	\$2,171,000	14.9%	\$322,867
Semitropic Banked Water O&M	\$470,000	14.9%	\$69,897
Total - Water Supply Costs	\$7,209,200	14.9%	\$1,072,137
Temporary Water Supply Costs	\$29,279,388	14.9%	\$4,354,371

Water Reconciliation Charge

This section of the report outlines the policy considerations and recommendations, framework, and calculations for the water reconciliation charge.

Policy Considerations and Recommendations

As part of the 2019 Untreated Water Rate Study, Raftelis worked with Agency staff to discuss a potential framework for a water reconciliation charge to apply to the annual untreated water rate. The work performed in the 2021 Untreated Water Rate Study builds upon and refines the initial framework for the reconciliation charge, with a goal to provide an equitable methodology to calculate the charge in future years by implementing this framework into the actual untreated water sales program.

Since the Agency does not currently have a separate reserve fund for its untreated water utility, changes between planned costs and water deliveries and actual costs and actual water deliveries in any given year require a true-up to ensure the Agency is not over or under-collecting revenue from untreated water customers. Raftelis worked with staff to analyze the impacts of various alternatives, which included implementing a financial reserve policy and/or a fixed charge component to the existing rate structure.

The objectives of these potential alternatives, identified by Agency staff, are as follows:

- » Maintaining and ensuring financial sufficiency in case of fluctuating water supply costs
- » Maintaining and ensuring financial sufficiency in case of varying water supply management staff costs
- » Establishing equity between treated and untreated water systems in case of over- or under-collecting untreated water rate revenues
- » Accounting for the financial impacts of the difference between planned untreated water deliveries and actual deliveries

Although implementing a reserve policy and/or a fixed charge component may meet the Agency's objectives, the administrative cost and burden to the Agency outweigh the potential benefit. Raftelis does not recommend a reserve policy or fixed charge for the untreated water system but rather the adoption of an annual water reconciliation charge per AF of untreated water deliveries.

Reconciliation Framework

Raftelis collaborated with staff to determine the proposed framework for calculating the annual water reconciliation charge, which is detailed in this subsection of the report. The proposed water reconciliation charge framework will meet the Agency's objectives for the following reasons:

- » Truing up water supply and water supply management staff costs from prior years will ensure that the Agency is collecting sufficient revenues to meet its costs.
- » The water reconciliation charge, which can be an additional charge or a credit, ensures the Agency is not over- or under-collecting revenues from its untreated water customers.
- » The water reconciliation charge also establishes equity between treated and untreated water customers by ensuring that untreated water customers are paying for their fair share of costs.

Step 1: Determine the implementation schedule for the water reconciliation charge.

Actual calendar year cost information is available to the Agency six months after the year ends. Therefore, the water reconciliation charge true up costs at least two years prior to the year that it is implemented. For example, actual costs for CY 2020 are available in mid-2021; the water reconciliation charge, which is calculated to true up CY 2020 costs, is then implemented in the CY 2022 untreated water rate. The Agency's Board can determine the number of years to phase-in the reconciliation charge based on relevant policy objectives, such as minimizing customer impacts. Generally, the water reconciliation charge will be applied to the next year's rate. However, if the true-up of costs and deliveries in a particular year are significantly higher, the Board can opt to phase-in the water reconciliation charge over multiple years to minimize impacts to customers.

Step 2: Allocate actual costs for the entire Agency between treated and untreated water based on planned or actual deliveries.

Agency costs include water supply costs, water supply management staff costs, and overhead for both treated and untreated water customers. Once actual costs are available for the reconciliation year, the proposed framework allocates each cost category based on the following:

- » Water supply costs are allocated between treated and untreated customers based on each utility's proportion of actual deliveries. Since the majority of water supply costs are variable (meaning that the more water that is delivered, the higher the costs), it is most equitable to allocate these costs between the two customer types based on the amount of actual water delivered to each.
- » Untreated water program costs are allocated entirely to untreated water customers.
- » The remaining water supply management staff costs are allocated between treated and untreated customers based on each utility's proportion of planned deliveries. Since water supply management staff costs are fixed (meaning that these costs are incurred regardless of how much water is delivered), it is most equitable to allocate these costs based on the planned deliveries that were used to calculate that year's rate.
- » Overhead costs are determined by multiplying the planned overhead percentage for that year's rate by the allocated water supply management staff costs to both treated and untreated water customers.
- » It is important to note that all costs that were included in the original untreated water rate should be included in the reconciliation, and vice versa. For example, the CY 2020 untreated water rate did not include an overhead cost component. Therefore, when reconciling the actual costs for CY 2020, overhead costs should not be included in the calculation.

Step 3: Calculate the reconciliation amount using a cash flow analysis.

Historically, untreated water usage has been steady year-to-year. Over the last couple of years, actual untreated water usage has exceeded planned untreated water usage (which is used to determine the rate), increasing revenue received from the untreated water program. The cash flow analysis not only incorporates the actual costs incurred by the Agency but also isolates the untreated water customers' economies of scale generated from increased water usage. The cash flow analysis to determine the amount that is reconciled includes three components: the reconciliation balance from prior years' actual untreated water rate revenues, the actual untreated water rate revenues for the reconciliation year, and the actual untreated water costs for the reconciliation year. The reconciliation balance represents the amount of money that the untreated water utility had over- or under-collected based on the prior water reconciliation charge. For example, the CY 2018 reconciliation process determined that the Agency over-collected approximately \$49,500 from its customers, which resulted in a \$9 credit applied to the CY 2020 untreated water rate. The outstanding balance for the CY 2020 reconciliation process is \$49,500. Actual untreated water rate revenues are calculated based on the implemented untreated water rate (including any reconciliation charges applied) multiplied by the actual untreated water deliveries. Actual untreated water costs were determined in Step 2. The cash flow analysis is equal to the reconciliation balance plus the actual untreated water rate revenues less actual untreated water costs.

Step 4: Determine the water reconciliation charge.

After calculating the reconciliation amount, divide that amount by the number of phase-in years determined in Step 1. The resulting number is the reconciliation balance to apply to each future year. For example, if the Agency calculated a reconciliation amount in CY 2020 equal to -\$300,000 (signifying an additional charge to untreated water customers) that will be phased-in over three years, the reconciliation balance for CY 2022, 2023, and 2024 is equal to -\$100,000 each. The water reconciliation charge applied to each respective year is equal to the reconciliation balance divided by the planned untreated water deliveries for each year.

Step 5: Repeat the same process for future years.

This framework can be used to determine the water reconciliation charge for any future year. It is important to keep the reconciliation balances calculated in Step 4 for each year to develop the cash flow analysis needed in Step 3. The Agency’s Board can elect to phase-in the water reconciliation charge as determined in Step 1. However, the starting reconciliation balance, determined in Step 4, in each year must be equal to the calculated balance to ensure that Agency staff can understand the financial impacts of the implemented rates, especially rates that are lower than what is necessary to fully reconcile all costs and revenues for the untreated water system.

CY 2020 Reconciliation Calculation

This subsection will detail the calculation for the CY 2020 water reconciliation charge following the steps outlined in the framework.

Step 1: Determine the implementation schedule for the water reconciliation charge.

The CY 2020 reconciliation amount is proposed to be implemented for one year in the CY 2022 untreated water rate.

Step 2: Allocate actual costs for the entire Agency between treated and untreated water based on planned or actual deliveries.

Table 10 shows the planned and actual water deliveries between untreated and treated water in CY 2020. The planned deliveries for CY 2020 are the same as those used to calculate the CY 2020 untreated water rate. The resulting percent allocations are then used to divide actual costs to untreated water customers.

Table 10: Water Deliveries and Allocations (CY 2020)

Water Deliveries	Untreated Water	Treated Water	Total
Planned Deliveries (AF)	5,500	33,768	39,268
Percent Allocation	14.0%	86.0%	100.0%
Actual Deliveries (AF)	5,832	38,744	44,576
Percent Allocation	13.1%	86.9%	100.0%

Table 11 shows the CY 2020 actual costs allocated to untreated water. Water supply costs are allocated based on the percent of actual deliveries, untreated water program costs are allocated entirely to untreated water, and the remaining water supply management staff costs are allocated based on the percent of planned deliveries from **Table 10**.

Table 11: Actual Untreated Water Costs (CY 2020)

Actual Costs (CY 2020)	Agency Total	Allocation Method	% to Untreated	Total Untreated
Water Supply Costs				
Delta Conveyance Project	\$500,000	Actual Deliveries	13.1%	\$65,416
SWP Transportation	\$1,921,379	Actual Deliveries	13.1%	\$251,379
Yuba Accord	\$978,562	Actual Deliveries	13.1%	\$128,028
Dry Year Transfer Program	\$1,150,000	Actual Deliveries	13.1%	\$150,458
Semitropic Banked Water	\$174,880	Actual Deliveries	13.1%	\$22,880
Semitropic Banked Water O&M	\$455,650	Actual Deliveries	13.1%	\$59,614
Byron-Bethany Irrigation District	\$90,000	Actual Deliveries	13.1%	\$11,775
Del Valle Water Rights	\$3,000	Actual Deliveries	13.1%	\$392
Total - Water Supply Costs	\$5,273,471			\$689,943
Water Supply Management Staff Costs				
State Water Project Program	\$86,085	Planned Deliveries	14.0%	\$12,057
Untreated Water Program	\$14,364	Untreated Water	100.0%	\$14,364
Water Supply and Storage Planning	\$501,804	Planned Deliveries	14.0%	\$70,284
Cawelo Banked Water	\$1,033	Planned Deliveries	14.0%	\$145
Semitropic Banked Water	\$3,056	Planned Deliveries	14.0%	\$428
Groundwater Administration	\$1,012,445	Planned Deliveries	14.0%	\$141,806
Byron-Bethany Irrigation District	\$2,296	Planned Deliveries	14.0%	\$322
Local Water Rights	\$15,000	Planned Deliveries	14.0%	\$2,101
Total - Water Supply Management Staff Costs	\$1,636,083			\$241,507
Total - Water Supply and Staff Costs	\$6,909,554			\$931,450

Step 3: Calculate the reconciliation amount using a cash flow analysis.

The cash flow analysis in this step includes three components: the reconciliation balance, the actual untreated water rate revenues, and the actual untreated water costs. For the CY 2020 reconciliation, the CY 2018 reconciliation balance is included. Based on a previous analysis, the Agency over-collected approximately \$49,500 from its customers in CY 2018, which resulted in a \$9 credit that was applied to the calculated CY 2020 rate of \$182 per AF. The implemented rate for CY 2020 is equal to \$173 per AF (\$182 per AF less the credit \$9 per AF). The implemented rate is used to calculate the actual untreated water rate revenues to avoid double-counting the credited CY 2018 reconciliation balance.

Table 12 shows the cash flow analysis to determine the CY 2020 water reconciliation amount, which includes the CY 2018 balance, actual untreated water rate revenues (equal to \$173 per AF multiplied by actual deliveries of 5,832 AF), and actual untreated water costs (from **Table 11**).

Table 12: Water Reconciliation Amount (CY 2020)

Water Reconciliation Charge	CY 2020
CY 2018 Reconciliation Balance	\$49,500
CY 2020 Actual Untreated Water Rate Revenues	\$1,008,936
CY 2020 Actual Untreated Water Costs	(\$931,450)
CY 2020 Reconciliation Amount	\$126,986

Step 4: Determine the water reconciliation charge.

The proposed CY 2020 water reconciliation charge/(credit) is proposed to be implemented over one year and applied to the CY 2022 untreated water rate, as discussed in Step 1.

Table 13 calculates the CY 2020 water reconciliation charge/(credit) using the reconciliation amount derived in **Table 12** and the CY 2022 planned untreated water deliveries in AF from **Table 2**. The reconciliation amount is divided by the planned deliveries in the year that the reconciliation charge is proposed to be implemented, which for the CY 2020 charge is CY 2022. A positive reconciliation amount signifies that the Agency over-collected from its untreated water customers in CY 2020, meaning that a credit of \$22 will be applied to the CY 2022 untreated water rate.

Table 13: Water Reconciliation Charge Calculation (CY 2020)

Water Reconciliation Charge	CY 2020
CY 2020 Reconciliation Amount	\$126,986
CY 2022 Planned Untreated Water Deliveries (AF)	5,800
CY 2020 Water Reconciliation Charge/(Credit)	(\$22)
Applied to CY 2022 Rate (\$/AF)	

Untreated Water Rates

This section of the report combines the water supply management staff costs, overhead costs, water supply costs, and water reconciliation charges/(credits) determined in previous sections to calculate the untreated water rates.

Recommendations

The Agency’s current untreated water rates and rate structure do not represent the entire costs of the untreated water system and do not consider potential fluctuations in annual costs and/or water deliveries. Raftelis recommends the following changes to ensure financial sufficiency for the untreated water system and to establish greater equity between the treated and untreated water systems:

- » Including overhead costs that are allocated to untreated water to the untreated water rate calculation
- » Adopting a water reconciliation framework that can be used in future years to true-up costs and deliveries
- » Implementing a water reconciliation charge, which can be either an additional charge or credit depending on fluctuations in costs and/or deliveries in prior years
- » Maintaining the Agency’s single year rate implementation schedule since there is no separate untreated water reserve and fluctuations in costs and/or deliveries will be captured by the water reconciliation framework

Untreated Water Rate Calculation

Table 14 shows the untreated water rate calculation for CY 2022. The untreated water rate includes the untreated water system’s portion of water supply management staff costs (from **Table 4**), overhead costs (from **Table 7**), water supply costs (from **Table 9**), and the CY 2020 water reconciliation charge/(credit) (from **Table 13**). The temporary untreated water rate includes all untreated water costs and the temporary water supply costs (from **Table 9**) and does not include the water reconciliation charge/(credit). The costs are divided by the planned untreated water deliveries for CY 2022 (from **Table 2**) to derive the rate per AF of water.

Table 14: Untreated Water Rate Calculation (CY 2022)

Untreated Water Rate Calculation	Total Untreated	Untreated Deliveries (AF)	Unit Rate (\$/AF)
Water Supply Management Staff Costs	\$162,475	5,800	\$28
Overhead Costs	\$74,697	5,800	\$13
Water Supply Costs	\$1,072,137	5,800	\$185
Total Untreated Water Rate	\$1,309,309		\$226
Less 2020 Water Reconciliation Charge/(Credit)	(\$126,986)	5,800	(\$22)
Total Adjusted Untreated Water Rate	\$1,182,323		\$204
Untreated Water Costs	\$1,309,309	5,800	\$226
Temporary Water Supply Costs	\$4,354,371	5,800	\$751
Total Temporary Untreated Water Rate	\$5,663,680		\$977

Adopted Rates

Table 15 shows the adopted untreated water rate and temporary untreated water rate for CY 2022 compared to the current rates for CY 2021. These rates were adopted by the Zone 7 Board of Directors on October 20, 2021 (Resolution No 21-77).

Table 15: Adopted Untreated Water Rates (CY 2022)

Untreated Water Rates (CY 2022)	Current Rates	Adopted Rates	Difference (\$)
Untreated Water Rate	\$173	\$204	\$31
Temporary Untreated Water Rate	\$886	\$977	\$91

Technical Appendix

Water Supply Management Staff Cost Detail

Table 16: Water Supply Management Staff Cost Detail

Water Supply Management Staff Costs	Hourly Pay (\$/hr)	Hours Worked	Total Agency
State Water Project Program			
Associate Engineer	\$152.00	570	\$86,640
IP Manager	\$195.00	185	\$36,075
Associate Planner	\$120.00	5	\$600
Finance Analyst	\$104.00	5	\$520
Junior Planner	\$51.00	5	\$255
Total - State Water Project Program			\$124,090
Untreated Water Program			
Finance Analyst	\$144.00	20	\$2,880
Finance Analyst	\$104.00	70	\$7,280
IWR Manager	\$202.00	20	\$4,040
IP Manager	\$195.00	10	\$1,950
Associate Engineer	\$152.00	60	\$9,120
Cost of Service Study Consultant Fee			\$27,100
Total - Untreated Water Program			\$52,370
Water Supply and Storage Planning			
IWR Manager	\$202.00	745	\$150,490
IP Manager	\$195.00	800	\$156,000
Principal Engineer	\$190.00	5	\$950
Associate Engineer	\$152.00	550	\$83,600
Associate Engineer	\$160.00	410	\$65,600
Assistant Engineer	\$105.00	920	\$96,600
Associate Planner	\$120.00	150	\$18,000
Assistant Planner	\$118.00	5	\$590
Junior Planner	\$51.00	695	\$35,445
Total - Water Supply and Storage Planning			\$607,275
Cawelo Banked Water Program			
Associate Engineer	\$152.00	5	\$760
Assistant Planner	\$118.00	5	\$590
Total - Cawelo Banked Water Program			\$1,350
Semitropic Banked Water Program			
IP Manager	\$195.00	5	\$975
Associate Engineer	\$152.00	40	\$6,080
Assistant Planner	\$118.00	5	\$590
Total - Semitropic Banked Water Program			\$7,645
Total - Water Supply Management Staff Costs			\$792,730

Agency Indirect Cost Detail

Table 17: Central Administration Indirect Cost Detail

Account Description - Central Administration	Indirect Costs
Salaries and Wages	\$1,599,827
Professional and Technical Services	\$1,128,709
County Services	\$2,128,443
Insurance Services	\$383,230
Gas and Electricity	\$129,228
Water Service	\$6,264
Communications	\$50,949
Garbage Disposal Services	\$11,901
Janitorial Services/Supplies	\$3,177
Repairs/Service of Equipment	\$8,971
Repairs/Service of Buildings & Property	\$189,603
Maintenance Parts & Supplies	\$2,324
Rents & Leases - Equipment	\$22,106
General Office Supplies & Expenses	\$197,319
Reproduction and Printing	\$3,781
Subscriptions	\$2,627
Postage, Delivery & Shipping	\$12,055
Organization Memberships	\$4,725
Support and Program Participation	\$3,500
Advertising and Legal Notices	\$6,353
State and Local Fees	\$28,651
Catering & Hosting Expense	\$16,776
Emergency & Safety Supplies & Services	\$17,506
Training Materials and Services	\$37,999
Educational Stipend - Zone 7	\$7,847
Travel/Transportation	\$1,074
Mileage	\$2,935
Total	\$6,007,880