

ORIGINATING SECTION: Administration

CONTACT: Osborn Solitei

AGENDA DATE: October 19, 2022

SUBJECT: Untreated Water Rate Study and Proposed Untreated Rates for Calendar Year 2023

SUMMARY:

- The Agency has hired Raftelis to update the untreated water rates for CY 2023 based on the methodology and rate components incorporated into the CY 2022 rates. The proposed action is in support of Strategic Plan Goal G – Fiscal Responsibility: Operate the Agency in a fiscally responsible manner.
- In October 2021, following an extensive stakeholder outreach process, the Board approved an untreated water rate setting methodology, Untreated Water Rate Study (the “2021 Study”) and calendar year (CY) 2022 untreated water rates (Board Resolution No. 21-77). The Board approved the following components to be included in the rate:
 - Water Supply Costs
 - Water Supply Staff Costs
 - Agency Overhead
- At the September 27, 2022, Finance Committee Meeting, staff presented three options for untreated water rates. This meeting was well-attended by untreated water customers. The committee recommend forwarding all three options for the Board’s consideration, but recommended Option 3 – Phase-in CY 2021 Reconciliation Charge, because it has the lowest initial financial impact on untreated water customers. The calculation for Option 3 is shown in Table 1 below.

Table 1 Option 3 – Phase-in CY 2021 Reconciliation Charge			
Untreated Water Rate Components	Cost Allocated to Untreated Customers	Untreated 2023 Planned Usage	Unit Cost (\$) / AF
Water Supply Cost (86%) ¹	\$1.13M	6,000	\$189
Water Supply Staff Costs (10%)	\$125K	6,000	\$21
Overhead (4%)	\$54K	6,000	\$9
Untreated Water Rate	\$1.3M	6,000	\$219
CY 2021 Reconciliation Charge (1/3 of total)	\$323K	6,000	\$55
Total Unit Rate			\$274

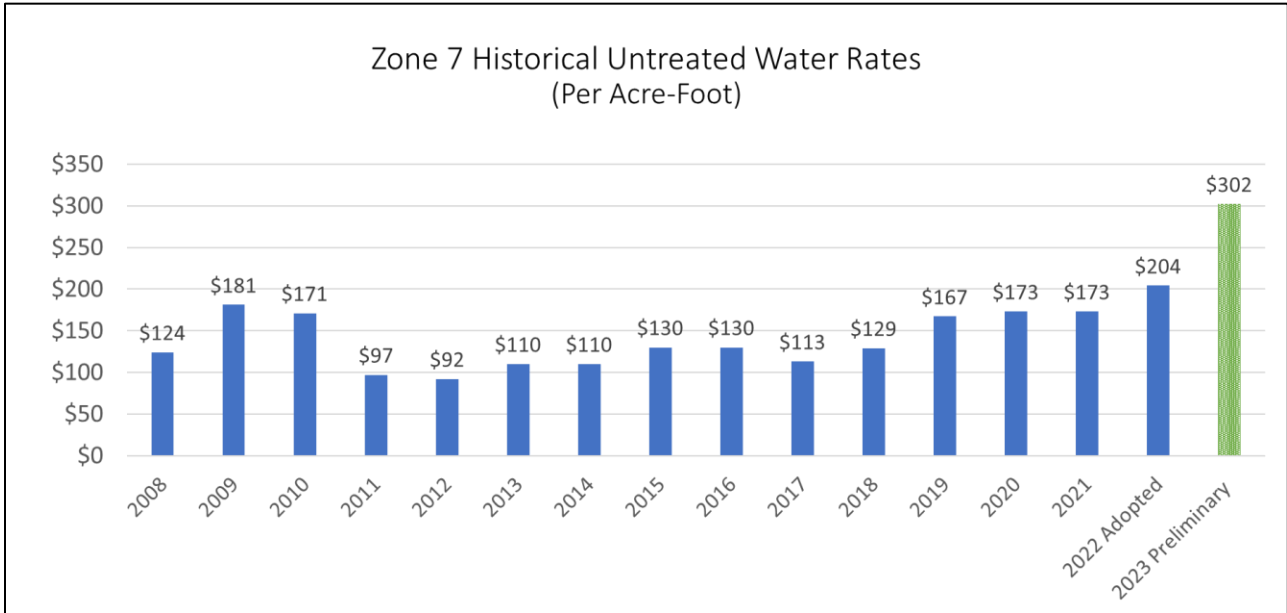
¹Water supply costs = \$8M

- If adopted, the rates will take effect January 1, 2023.

DISCUSSION:

Current Untreated Water Rate

The CY 2022 untreated water rate is \$204 per acre-foot (AF) of water delivered, billed monthly. This rate includes a reconciliation credit of \$22/AF. The following chart shows historical untreated water rates as well as the preliminary rate for CY 2023.



Allocation of Costs – The table below shows the CY 2023 projected demand for treated and untreated water customers and the allocation of costs to each customer. The allocation is calculated by taking the specific demand and dividing it by total demand. Based on CY 2023 projections, untreated customers are responsible for roughly 14.2% of the shared costs.

	2023 Projected Demand	Allocation of Costs
Untreated Water Demand	6,000 AF	14.2%
Water Supply Staff Costs	36,361 AF	85.8%
Agency Overhead Costs	42,361 AF	100%

The formula below shows the next step in the calculation and is used to determine the unit cost per AF of water.



CY 2023 Preliminary Untreated Water Rate

Calendar year 2022 is a critically dry year and is the third dry year in a row. The State Water Project (SWP) allocation this year is 5%, following a 5% allocation in 2021 and a 20% allocation in 2020. In preparation for another dry year and a very low initial SWP Table A allocation, Zone 7 is actively pursuing water transfer opportunities for 2023 and beyond.

At the August 2022 Finance Committee meeting, staff presented the results of the CY 2021 rate reconciliation which resulted in an estimated reconciliation charge of \$164/AF (see Attachment A for details). It was noted that staff would present options to smooth the reconciliation charge.

A preliminary untreated water rate of \$302/acre-foot (AF) has been calculated using the Board approved rate components and methodology per Resolution No. 21-77 dated October 20, 2021. This is a \$98/AF increase over the CY 2022 rate of \$204/AF due to a 59% increase in water supply costs. The rate calculation is shown in the Table 2 below and more details are included in Attachment A - Untreated Water Rate Study, Draft Report - September 2022.

Table 2 – Preliminary CY 2023 Untreated Water Rate			
Rate Component	Total Untreated	Untreated Deliveries (AF)	Unit Rate (\$/AF)
Water Supply Cost (90%) ¹	\$1.63M	6,000	\$272
Water Supply Staff Costs (17%)	\$125K	6,000	\$21
Overhead (3%)	\$54K	6,000	\$9
Preliminary Untreated Water Rate	\$1.3M		\$302

¹Water supply costs = \$11.5M

The preliminary rate of \$302/AF, combined with the reconciliation charge of \$164/AF is a significant increase over the current rate of \$204/AF. To minimize rate shock, staff has developed options for the CY 2023 rate and CY 2021 reconciliation charge. These options are detailed in the Table 3 below.

Table 3 – Untreated Water Rate Options			
Option	CY 2021 Reconciliation Charge (\$/AF)	CY 2023 Untreated Rate (\$/AF)	Unit Rate (\$/AF)
Option 1 – Preliminary Rate Calculation + Rate Reconciliation Charge	\$164	\$302	\$466
Option 2 – Averaging Water Supply Costs	\$164	\$219	\$383
Option 3 – Phase-in CY 2021 Reconciliation Charge	\$55	\$219	\$274

Option 1 – Preliminary Rate Calculation + Rate Reconciliation Charge

- **Benefit:** Financial stability for the Agency because all reconciled costs for CY 2021 are collected at once.
- **Impact:** Rate shock to untreated water customers.

The calculation for Option 1 is shown in Table 4 below:

Table 4 Option 1 – Preliminary Rate Calculation + Rate Reconciliation Charge			
Untreated Water Rate Components	Cost Allocated to Untreated Customers	Untreated 2023 Planned Usage	Unit Cost (\$)/ AF
Water Supply Cost (90%) ¹	\$1.63M	6,000	\$272
Water Supply Staff Costs (17%)	\$125K	6,000	\$21
Overhead (3%)	\$54K	6,000	\$9
CY 2023 Untreated Water Rate	\$1.3M	6,000	\$302
CY 2021 Reconciliation Charge	\$978K	6,000	\$164
Total Unit Rate			\$466

¹Water supply costs = \$11.5M

Option 2 – Averaging Water Supply Costs

Using the three-year average water supply cost (\$8M) for the rate calculation. Since the untreated program does not have cash reserves, any over or under collection would be determined with the CY 2023 rate reconciliation process. The reconciliation would be presented to the Finance Committee in Summer 2024 and any over or under collection would be implemented as a charge or credit in the CY 2025 untreated water rate.

- **Benefit:** Less initial rate shock and financial impacts to untreated water customers. Untreated customers have time to plan for higher rates.
- **Impact:** If actual water costs exceed \$8M, less financial stability for Zone 7 because one-time costs are recovered over multiple years, and the potential for another reconciliation charge for untreated water customers.

The calculation for Option 2 is shown in Table 5 below:

Table 5 Option 2 – Averaging Water Supply Costs			
Untreated Water Rate Components	Cost Allocated to Untreated Customers	Untreated 2023 Planned Usage	Unit Cost (\$)/ AF
Water Supply Cost (86%) ¹	\$1.13M	6,000	\$189
Water Supply Staff Costs (10%)	\$125K	6,000	\$21
Overhead (4%)	\$54K	6,000	\$9
CY 2023 Untreated Water Rate	\$1.3M	6,000	\$219
CY 2021 Reconciliation Charge	\$978K	6,000	\$164
Total Unit Rate			\$383

¹Water supply costs = \$8M

Option 3 – Phase-in CY 2021 Reconciliation Charge

Incorporates Option 2 and phases-in the CY 2021 Reconciliation Charge over a three-year period. This phase-in period will minimize impacts to untreated water customers to the extent possible but will also reduce the administrative complexity of phasing-in costs over a longer period.

- **Benefit:** Less initial rate shock and financial impacts to untreated water customers. Untreated customers have time to plan for higher rates.
- **Impact:** Less financial stability for the Agency and the potential for another reconciliation charge on top of the CY 2021 Reconciliation phase-in. This option recommends phasing-in over three years. Phasing-in over 5 years or longer may cause unnecessary complexity and higher impacts in future years' rates. Can reduce the Agency's financial stability since costs are recouped over a longer period.

The calculation for Option 3 is shown in Table 6 below:

Table 6 Option 3 – Phase-in CY 2021 Reconciliation Charge			
Untreated Water Rate Components	Cost Allocated to Untreated Customers	Untreated 2023 Planned Usage	Unit Cost (\$ / AF
Water Supply Cost (86%) ¹	\$1.13M	6,000	\$189
Water Supply Staff Costs (10%)	\$125K	6,000	\$21
Overhead (4%)	\$54K	6,000	\$9
CY 2023 Untreated Water Rate	\$1.3M	6,000	\$219
CY 2021 Reconciliation Charge (1/3 of total)	\$323K	6,000	\$55
Total Unit Rate			\$274

¹Water supply costs = \$8M

FUNDING:

Untreated Water Sales revenue accrues to Fund 100 – Water Enterprise Operations.

RECOMMENDED ACTION:

Adopt the attached Resolution.

ATTACHMENTS:

Resolution
Attachment A – Untreated Water Rate Study, Draft Report - September 2022

ZONE 7
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

BOARD OF DIRECTORS

RESOLUTION NO.

INTRODUCED BY
SECONDED BY

Adoption of Calendar Year 2023 Untreated Water Rates

WHEREAS, the proposed action is in support of Strategic Plan Goal G - Fiscal Responsibility: Operate the Zone 7 Water Agency (the "Agency") in a fiscally responsible manner. In carrying out these fiscal responsibilities, the Agency sets rates and fees to recover cost of service; and

WHEREAS, the Agency contracted with Raftelis to determine untreated water rates for Calendar Year (CY) 2023 using the rate methodology and rate components approved in Board Resolution No. 21-77; and

WHEREAS, in order to minimize rate impacts to untreated water customers, the untreated water rate for CY 2023 shall be calculated using a three-average of prior year water supply costs of \$8 million; and

WHEREAS, should water supply cost for CY 2023 be more or less than \$8 million, a rate reconciliation charge or credit shall be applied to future untreated water rates as directed by the Board; and

WHEREAS, a reconciliation charge of \$164 per acre-foot for CY 2021 has been determined, and 1/3 of the total amount will be applied to the CYs 2023, 2024 and 2025 untreated water rates in the amount of \$55 per/acre-foot, per year, to minimize impacts to untreated water customers.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District, adopt the following rate schedule for Untreated Water Service, Temporary Untreated Water Service, and Non-Scheduled Untreated Water Services, be adopted:

FIRST, for Untreated Water Service, a delivery charge of \$274 per acre-foot for all metered water delivered to each customer per month; and

SECOND, for Temporary Untreated Water Service, an initial service establishment charge of \$125 per turnout for each new direct connection to the Zone system or a system supplying the Zone system; and

A monthly service charge of \$21 per turnout; and

A delivery charge of \$1,028 per acre-foot for all water delivered monthly based on total meter readings or as may be otherwise determined by the Agency; and

THIRD, for Non-Scheduled Untreated Water Service, a delivery charge of \$1,028 per acre-foot for water delivered to each customer per month; and

BE IT FURTHER RESOLVED, that said rate schedule for Untreated Water Service, Temporary Untreated Water Service, and Non-Scheduled Untreated Water Service shall be effective as of January 1, 2023, and shall end on the next effective date for such water rates adopted by the Board.

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSENT:

ABSTAIN:

I certify that the foregoing is a correct copy of a Resolution adopted by the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District on October 19, 2022.

By: _____
President, Board of Directors

ZONE 7

WATER AGENCY

Untreated Water Rate Study

Draft Report / September 2022

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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 30 percent of the current water demand is met through SWP water.

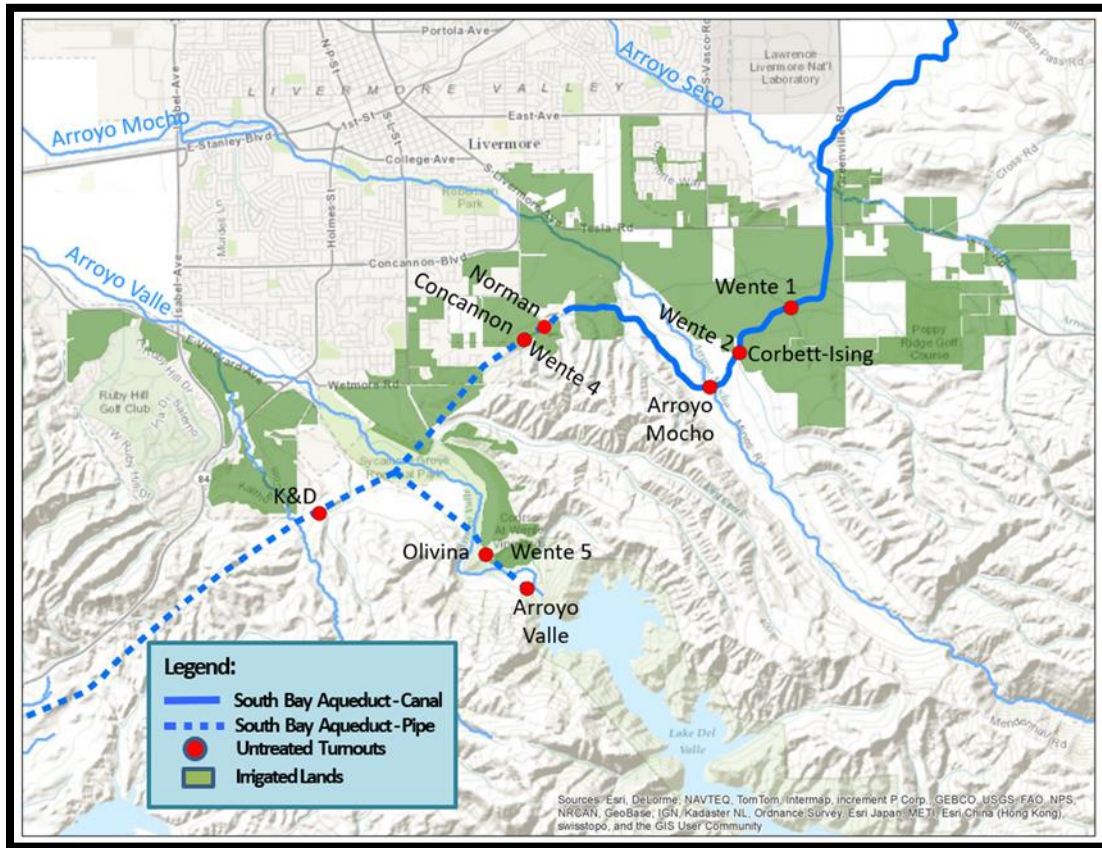
The Agency began delivering untreated water to its service area from the California Department of Water Resources (DWR) via the South Bay Aqueduct in 1962. Over the years, deliveries increased with the agricultural development of South Livermore. The Agency provides untreated water service to 81 untreated 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 2022, 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, 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 determine overhead costs
- » Develop untreated and temporary untreated water rates for calendar year (CY) 2023, including a water reconciliation charge for CY 2021
- » 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 2022.

Table 1: Current Untreated Water Rates (CY 2022)

Current Untreated Water Rates (\$/AF)	CY 2022
Untreated Water Rate	\$204 ¹
Temporary Untreated Water Rate	\$977

Planned Water Deliveries

Table 2 shows the planned water deliveries for untreated and treated water customers in CY 2023 and the percent of total deliveries for each service.

Table 2: Planned Water Deliveries (CY 2023)

Planned Water Deliveries	Total AF	% of Total
Untreated Water	6,000	14.2%
Treated Water	36,361	85.8%
Total	42,361	100.0%

Recommendations

The CY 2023 untreated water rates are based on the untreated water rate and reconciliation charge framework developed in the prior year’s study. Raftelis does not recommend any changes to this framework. The CY 2021 reconciliation charge, which is applied to the CY 2023 untreated water rate to recoup the difference in planned and actual costs to the untreated water system, may be phased-in over several years based on the policy direction from the Agency’s Board of Directors.

This phase-in period will minimize impacts to the Agency’s customers to the extent possible but will also reduce the administrative complexity of phasing-in costs over a longer period of time. For example, the CY 2021 reconciliation charge will be collected in the CY 2023, CY 2024, and CY 2025 rates. If the CY 2022 reconciliation charge (which will be calculated in next year) is also phased-in over three years, then the CY 2024 untreated water rate will include a third of the CY 2021 reconciliation and a third of the CY 2022 reconciliation. This may cause unnecessary complexity and higher impacts in future years’ rates and reduce the financial stability of the Agency since costs are recouped over a longer period of time.

¹ This figure includes a \$22 reconciliation credit for CY 2020.

Proposed Rates

Table 3 shows the proposed untreated water rates based on the prior recommendations, including the water reconciliation charge based on the recommended policy framework.

Table 3: Proposed Untreated Water Rates (CY 2023)

Proposed Untreated Water Rates (\$/AF)	CY 2023
Untreated Water Rate	\$302
2021 Water Reconciliation Charge	\$164
Untreated Water Rate (Net of Reconciliation)	\$466
Temporary Untreated Water Rate	\$1,028

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 2023. 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 2023 from **Table 2**.

Table 4: Water Supply Management Staff Cost Summary (CY 2023)

Water Supply Management Staff Costs Summary	Total Agency	% To Untreated	Total Untreated
State Water Project Program	\$110,395	14.2%	\$15,636
Untreated Water Program	\$40,675	100.0%	\$40,675
Water Supply and Storage Planning	\$470,734	14.2%	\$66,675
Cawelo Banked Water Program	\$6,575	14.2%	\$931
Semitropic Banked Water Program	\$4,097	14.2%	\$580
Total - Water Supply Management Staff Costs	\$632,476	19.7%	\$124,498

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:

$$\$5,849,643 \text{ total Central Administration costs} \times (\$2,951,433 \text{ Water Utility Support Services direct labor costs} / \$13,489,082 \text{ total direct labor costs}) = \$1,279,911$$

Table 5: Agency Overhead Costs

Programs	Direct Labor	Indirect Labor	Central Admin
Water Utility Support Services	\$2,951,433	\$0	\$1,279,911
Supply Source & Conveyance	\$222,233	\$0	\$96,373
Water Storage	\$1,048,969	\$0	\$454,893
Water Treatment	\$6,380,457	\$0	\$2,766,933
Water Transmission	\$1,038,470	\$0	\$450,340
Central Administration	\$0	\$5,849,643	\$0
Flood Protection	\$1,847,521	\$0	\$801,191
Total - Programs	\$13,489,082	\$5,849,643	\$5,849,643

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 43.4 percent represents approximately 43 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	\$2,951,433	\$1,279,911
Supply Source & Conveyance	\$222,233	\$96,373
Water Storage	\$1,048,969	\$454,893
Total - Untreated Water Programs	\$4,222,634	\$1,831,177
Overhead Percentage		43.4%

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 2023 in **Table 4**.

Table 7: Untreated Water Overhead Costs (CY 2023)

Overhead Costs	Total Untreated
Untreated Water Supply Management Staff Costs	\$124,498
Overhead Percentage	43.4%
Untreated Water Overhead Costs	\$53,989

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.

Water Supply Costs

Agency staff provided estimated water supply costs for CY 2023 based upon a 10 percent SWP allocation. However, the actual water supply costs and availability for CY 2023 will not be available until mid-2024.

Table 8 shows the variable unit costs, planned purchases in AF, variable costs, and fixed costs for each water supply source for CY 2023.

Table 8: Water Supply Cost Detail (CY 2023)

Water Supply Costs (CY 2023)	Variable Unit Cost (\$/AF)	Amount Purchased (AF)	Variable Cost	Fixed Costs	Total Costs
Delta Conveyance Project	\$0.00	0	\$0	\$500,000	\$500,000
SWP Transportation	\$130.00	12,840	\$1,669,200	\$0	\$1,669,200
Yuba Accord	\$850.00	600	\$510,000	\$3,000	\$513,000
Dry Year Transfer Program	\$1,130.00	100	\$113,000	\$0	\$113,000
Other Water Transfers	\$1,730.00	2,000	\$3,460,000	\$0	\$3,460,000
Cawelo Banked Water	\$258.93	7,500	\$1,942,000	\$0	\$1,942,000
Semitropic Banked Water	\$306.08	9,100	\$2,785,300	\$0	\$2,785,300
Semitropic Banked Water O&M	\$0.00	0	\$0	\$520,000	\$520,000
Total - Water Supply Costs			\$10,479,500	\$1,023,000	\$11,502,500
Temporary Water Supply Costs			\$0	\$30,743,357	\$30,743,357

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 2023 from **Table 2**.

Table 9: Water Supply Cost Summary (CY 2023)

Water Supply Cost Summary	Total Agency	% To Untreated	Total Untreated
Delta Conveyance Project	\$500,000	14.2%	\$70,820
SWP Transportation	\$1,669,200	14.2%	\$236,425
Yuba Accord	\$513,000	14.2%	\$72,661
Dry Year Transfer Program	\$113,000	14.2%	\$16,005
Other Water Transfers	\$3,460,000	14.2%	\$490,073
Cawelo Banked Water	\$1,942,000	14.2%	\$275,064
Semitropic Banked Water	\$2,785,300	14.2%	\$394,509
Semitropic Banked Water O&M	\$520,000	14.2%	\$73,653
Total - Water Supply Costs	\$11,502,500	14.2%	\$1,629,211
Temporary Water Supply Costs	\$30,743,357	14.2%	\$4,354,480

Water Reconciliation Charge

This section of the report outlines the framework and calculations for the water reconciliation charge.

Reconciliation Framework

For the 2021 Untreated Water Rate Study, 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 trues up costs at least two years prior to the year that it is implemented. For example, actual costs for CY 2021 are available in mid-2022; the water reconciliation charge, which is calculated to true up CY 2021 costs, is then implemented in the CY 2023 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 user group'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 user group'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 2021 untreated water rate did not include an overhead cost component. Therefore, when reconciling the actual costs for CY 2021, 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. 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 2021 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 2023, 2024, and 2025 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 2021 Reconciliation Calculation

This subsection will detail the calculation for the CY 2021 water reconciliation charge following the steps outlined in the framework.

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

The implementation schedule for the CY 2021 water reconciliation charge will be discussed and determined at the September 2022 Finance Committee Meeting. Staff plans to present options to smooth in the CY 2021 rate reconciliation charge. This report will assume a one-year implementation schedule.

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 2021. The planned deliveries for CY 2021 are the same as those used to calculate the CY 2021 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 2021)

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)	5,976	35,638	41,614
Percent Allocation	14.4%	85.6%	100.0%

Table 11 shows the CY 2021 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 2021)

Actual Costs (CY 2021)	Agency Total	Allocation Method	% to Untreated	Total Untreated
Water Supply Costs				
Delta Conveyance Project	\$500,000	Actual Deliveries	14.4%	\$71,803
SWP Transportation	\$2,094,904	Actual Deliveries	14.4%	\$300,840
Yuba Accord	\$603,578	Actual Deliveries	14.4%	\$86,677
Dry Year Transfer Program	\$172,494	Actual Deliveries	14.4%	\$24,771
Other Water Transfers	\$7,416,500	Actual Deliveries	14.4%	\$1,065,050
Semitropic Banked Water	\$1,900,820	Actual Deliveries	14.4%	\$272,968
Semitropic Banked Water O&M	\$462,800	Actual Deliveries	14.4%	\$66,461
Total - Water Supply Costs	\$13,151,096			\$1,888,570
Water Supply Management Staff Costs				
State Water Project Administration	\$120,069	Planned Deliveries	14.0%	\$16,817
Untreated Water Administration	\$24,076	Untreated Water	100.0%	\$24,076
Water Supply and Storage Planning	\$588,706	Planned Deliveries	14.0%	\$82,314
Cawelo Banked Water	\$1,048	Planned Deliveries	14.0%	\$147
Semitropic Banked Water	\$7,312	Planned Deliveries	14.0%	\$1,024
Total - Water Supply Management Staff Costs	\$741,210			\$124,520
Total - Water Supply and Staff Costs	\$13,892,306			\$2,013,090

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 2021 reconciliation, the reconciliation charge balance is \$0 since the CY 2022 rate recovered the amount of reconciliation credit for CY 2020. The implemented rate for CY 2021 is equal to \$173 per AF. The implemented rate is used to calculate the actual untreated water rate revenues to avoid double counting the credited CY 2020 reconciliation balance.

Table 12 shows the cash flow analysis to determine the CY 2021 water reconciliation amount, which includes the actual untreated water rate revenues and actual untreated water costs (from **Table 11**).

Table 12: Water Reconciliation Amount (CY 2021)

Water Reconciliation Charge	CY 2021
CY 2021 Actual Untreated Water Rate Revenues	\$1,034,123
CY 2021 Actual Untreated Water Costs	(\$2,013,090)
CY 2021 Reconciliation Amount	(\$978,967)

Step 4: Determine the water reconciliation charge.

The proposed CY 2021 water reconciliation charge is proposed to be implemented over one year and applied to the CY 2023 untreated water rate, as discussed in Step 1.

Table 13 calculates the CY 2021 water reconciliation charge using the reconciliation amount derived in **Table 12** the CY 2023 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 2021 charge is CY 2023. A negative reconciliation amount signifies that the Agency under-collected from its untreated water customers in CY 2021, meaning that a reconciliation charge of \$164 will be applied to the CY 2023 untreated water rate.

Table 13: Water Reconciliation Charge Calculation (CY 2021)

Water Reconciliation Charge	CY 2021
CY 2021 Reconciliation Amount	(\$978,967)
CY 2023 Planned Untreated Water Deliveries (AF)	6,000
CY 2021 Water Reconciliation Charge Applied to CY 2023 Rate (\$/AF)	\$164

Untreated Water Rates

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

Untreated Water Rate Calculation

Table 14 shows the untreated water rate calculation for CY 2023. 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 2021 water reconciliation charge (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. The costs are divided by the planned untreated water deliveries for CY 2023 (from **Table 2**) to derive the rate per AF of water.

Table 14: Untreated Water Rate Calculation (CY 2023)

Untreated Water Rate Calculation	Total Untreated	Untreated Deliveries (AF)	Unit Rate (\$/AF)
Water Supply Costs	\$1,629,211	6,000	\$272
Water Supply Management Staff Costs	\$124,498	6,000	\$21
Overhead Costs	\$53,989	6,000	\$9
Total Untreated Water Rate	\$1,807,698		\$302
Plus CY 2021 Water Reconciliation Charge	\$978,967	6,000	\$164
Total Adjusted Untreated Water Rate	\$2,134,020		\$466
Untreated Water Costs	\$1,807,698	6,000	\$302
Temporary Water Supply Costs	\$4,354,480	6,000	\$726
Total Temporary Untreated Water Rate	\$6,162,178		\$1,028

Proposed Rates

Table 15 shows the adopted untreated water rate and temporary untreated water rate for CY 2023 compared to the current rates for CY 2022.

Table 15: Proposed Untreated Water Rates (CY 2023)

Untreated Water Rates (CY 2023)	Current Rates	Proposed Rates	Difference (\$)
Untreated Water Rate	\$204 ²	\$466	\$262
Temporary Untreated Water Rate	\$977	\$1,028	\$51

² This figure includes a \$22 reconciliation credit for CY 2020.

Technical Appendix

Table 16: Water Supply Management Staff Cost Detail

Water Supply Management Staff Costs	Hourly Pay (\$/hr)	Hours Worked	Total Cost
State Water Project Administration			
Associate Engineer	\$161.00	480	\$77,280
IP Manager	\$206.00	150	\$30,900
Finance Analyst	\$110.00	5	\$550
Junior Planner	\$111.00	15	\$1,665
Total - State Water Project Administration			\$110,395
Untreated Water Administration			
Finance Analyst	\$152.00	30	\$4,560
Finance Analyst	\$110.00	100	\$11,000
IWR Manager	\$214.00	15	\$3,210
IP Manager	\$206.00	15	\$3,090
Associate Engineer	\$161.00	45	\$7,245
Associate Planner	\$128.00	5	\$640
Assistant Planner	\$93.00	10	\$930
Cost of Service Study Consultant Fee			\$10,000
Total - Untreated Water Administration			\$40,675
Water Supply and Storage Planning			
IWR Manager	\$214.00	345	\$73,830
IP Manager	\$206.00	710	\$146,260
Principal Engineer	\$201.00	2	\$402
Associate Engineer	\$161.00	407	\$65,527
Associate Engineer	\$169.00	325	\$54,925
Assistant Engineer	\$111.00	850	\$94,350
Associate Planner	\$128.00	10	\$1,280
Assistant Planner	\$125.00	1	\$125
Junior Planner	\$54.00	95	\$5,130
Associate Planner	\$111.00	185	\$20,535
Assistant Planner	\$93.00	10	\$930
Junior Planner	\$93.00	5	\$465
Assistant Engineer	\$93.00	75	\$6,975
Total - Water Supply and Storage Planning			\$470,734
Cawelo Banked Water Program			
IP Manager	\$206.00	5	\$1,030
Associate Engineer	\$161.00	20	\$3,220
Assistant Planner	\$93.00	25	\$2,325
Total - Cawelo Banked Water Program			\$6,575
Semitropic Banked Water Program			
IP Manager	\$206.00	2	\$412
Associate Engineer	\$161.00	20	\$3,220
Associate Planner	\$93.00	5	\$465
Total - Semitropic Banked Water Program			\$4,097
Total - Water Supply Management Staff Costs			\$632,476

Table 17: Central Administration Indirect Cost Detail

Account Description - Central Administration	Total Indirect Costs	Flood Protection Operations	Water Operations	
			Treated Water Customers	Untreated Water Customers
Salaries and Wages (OGM, Finance, HR and Admin)	\$2,354,154	\$293,883	\$2,038,543	\$21,728
Salaries and Wages (Board of Directors)	\$70,000	\$8,739	\$60,615	\$646
Professional and Technical Services (Website, Communications, North Canyons (NC) Property Management, etc)	\$1,093,477	\$136,505	\$946,879	\$10,092
County Services (Payroll and Vendor checks etc.)	\$1,170,758	\$146,153	\$1,013,799	\$10,806
Insurance Services (Property & liability)	\$532,293	\$66,449	\$460,931	\$4,913
Gas and Electricity for North Canyons	\$136,799	\$17,077	\$118,459	\$1,263
Water Service for NC	\$5,624	\$702	\$4,870	\$52
Communications (Telecommunication services for NC)	\$48,728	\$6,083	\$42,195	\$450
Garbage Disposal Services for NC	\$10,903	\$1,361	\$9,441	\$101
Repairs/Service of Equipment (Backup Generator repairs etc)	\$4,609	\$575	\$3,991	\$43
Repairs/Service of Buildings & Property (Commercial property Mgmt., ADT security services etc.)	\$166,959	\$20,843	\$144,576	\$1,541
Maintenance Parts & Supplies (Irrigation parts, electrical parts and misc. supplies)	\$429	\$54	\$372	\$4
Rents & Leases - Equipment (Copier machine, postage meter etc.)	\$14,737	\$1,840	\$12,762	\$136
General Office Supplies & Expenses (IT services, software, paper, pens, files etc)	\$162,981	\$20,346	\$141,130	\$1,504
Reproduction and Printing (Budget book etc)	\$686	\$86	\$594	\$6
Subscriptions (Newspapers, CA Dept of Fish and Wildlife)	\$1,144	\$143	\$991	\$11
Postage, Delivery & Shipping (Payments to US Postal Services, FedEx etc.)	\$2,548	\$318	\$2,206	\$24
Organization Memberships (Membership for Board Members, GM, Admin Staff etc.)	\$6,725	\$840	\$5,823	\$62
Advertising and Legal Notices (Job postings)	\$18,735	\$2,339	\$16,223	\$173
State and Local Fees (City of Livermore Tri-Valley Tech Park CFD No. 99-1 Series 2015 Bonds)	\$27,982	\$3,493	\$24,231	\$258
Emergency & Safety Supplies & Services (Non-contact termometers, water etc.)	\$518	\$65	\$449	\$5
Training Materials and Services (ACWA Training, Water Education, CSMFO and GFOA)	\$7,717	\$963	\$6,682	\$71
Educational Stipend - Zone 7	\$10,893	\$1,360	\$9,433	\$100
Mileage	\$243	\$30	\$211	\$2
Total	\$5,849,643	\$730,246	\$5,065,407	\$53,989

Note: Totals may not add due to rounding. Untreated customers pay approximately 1% of Agency-wide overhead.