



City of Carlsbad
Wastewater Cost-of-Service Study

2021 WASTEWATER RATE STUDY

FINAL | October 2021



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Abbreviations

BOD	Biological Oxygen Demand
Carollo	Carollo Engineers, Inc.
CDFA	California Department of Food and Agriculture
CEC	California Energy Commission
cf	cubic feet
CIP	Capital Improvement Plan
CPUC	California Public Utilities Commission
DWR	Department of Water Resources
EDU	Equivalent Dwelling Unit
EWA	Encina Wastewater Authority
EWPCF	Encina Water Pollution Control Facility
HCF	Hundred cubic feet
MFR	Multi-Family Residential
mgd	million gallons per day
O&M	Operation and maintenance
SDU	Second dwelling unit
SFR	Single Family Residential
SWRCB	State Water Resources Control Board
TSS	Total Suspended Solids

Section 1 – Introduction

The City of Carlsbad owns a wastewater system that provides wastewater service to roughly two thirds (2/3) of the City’s population and is responsible for the collection and conveyance of sewer discharges to the Encina Water Pollution Control Facility (EWPCF). The EWPCF is jointly owned by the cities of Carlsbad, Vista, Encinitas, the Buena Sanitation District, Vallecitos Water District, and Leucadia Wastewater District and provides full secondary treatment, sludge handling, and disposal through a deep ocean outfall that extends along the ocean floor to a point 1.5 miles offshore.

The City’s wastewater service customer base includes approximately 26,600 sewer accounts, consisting of single family residential, multi-family residential, commercial, other, breweries, industrial, and schools. The City maintains a separate wastewater enterprise fund with its own operating and capital reserves. The wastewater user rates are designed to distribute the cost of the operation and improvement of the City’s collection system and the City’s share of the EWPCF equitably among all users in accordance with California legal requirements as defined by Proposition 218.

1.1 Study Purpose and Key Drivers

Carlsbad retained Carollo Engineers, Inc. (Carollo) to perform a comprehensive Cost-of-service Study (Study) of the City’s potable water, recycled water, and wastewater systems and to develop a rate plan for the upcoming five-year period, Fiscal Year Ending (FYE) 2022 through FYE 2026. The City has historically set rates on a calendar year basis and will continue to do so through the study period. The first increase based on this study will be delayed by two months and implemented on March 1, 2022. Subsequent increases will be implemented on January 1 of each year.

Carollo’s analysis was guided by the policies and practices of the City, industry best practices for cost-of-service analyses as outlined by the Water Environment Federation (WEF) Manual of Practice No. 27 “Financing and Charges for Wastewater Systems”, and requirements for establishing wastewater rates within the State of California. The findings and recommendations of the cost-of-service and rate analysis for wastewater are detailed within this report. The findings of the cost-of-service analysis for potable and recycled water are provided by Carollo in a separate report.

Several issues influence the need to conduct a comprehensive cost-of-service rate design study. Identifying these issues upfront defines the strategic intent needed to complete this project successfully. These issues include the following:

- The State of California requires that all utility rates meet the cost-of-service requirements imposed under Proposition 218. These principles underlie the approach to rate setting such that all customers are charged rates that are proportional to the cost of providing service attributable to a parcel based on the demands that each customer class places on the system.
- Although there are others, the main factor driving the need for increased rate revenues for this COSS is funding of the capital improvement plans (CIP). Based on current projections, the City and the EWPCF have identified a total of \$88 million (2021 dollars) in necessary capital improvements over the next 5 years. The City’s share of the EWPCF projects is expected to total approximately half of the City’s total CIP expenses over this time period.

1.2 Study Approach

Rate analyses are typically performed periodically so that revenues from rates adequately fund utility operations and maintenance (O&M) and capital investments. Additionally, in California, wastewater rates must adhere to the cost-of-service requirements imposed by the State Constitution. California Constitution article XIII D, Section 6 (Article XIII D) requires that property-related fees and charges, including wastewater rates, do not exceed the reasonable and proportional cost of providing the service.

To achieve these requirements, a comprehensive rate study typically consists of the following progression of three interconnected processes.

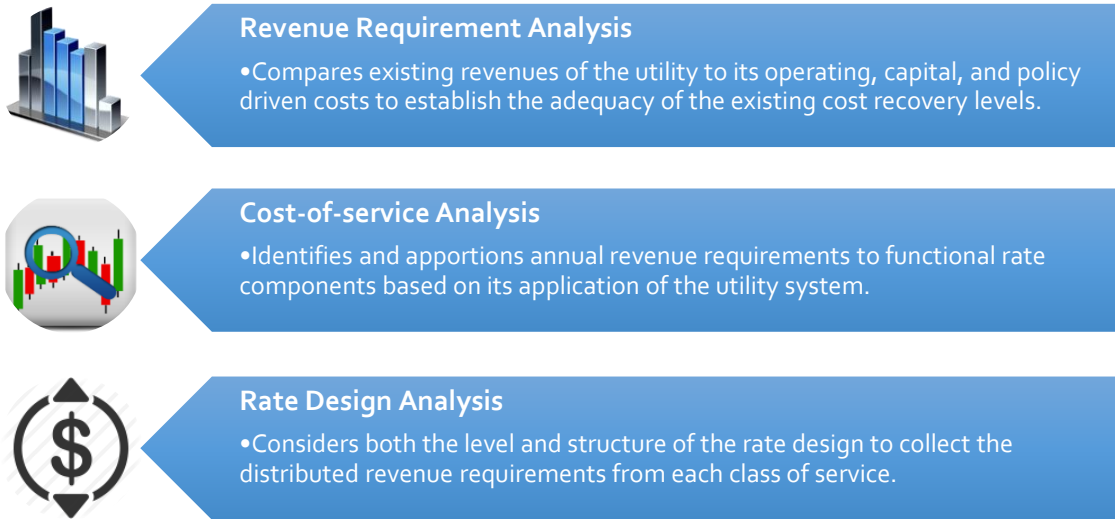


Figure 1 Wastewater Rate Setting Processes

1.3 Project Findings and Recommendations

Based on the analysis projections, the City will need to increase wastewater rate revenues to implement identified capital improvement projects within the collection system and at the EWPCF, and to a lesser extent to keep pace with inflationary increase to O&M costs. While the use of reserves to fund a share of capital projects will help to mitigate the necessary level of rate increases, significant rate increases will still be required due to the magnitude of the capital improvements that are necessary. It is recommended that the City reviews its revenues and expenditures on an annual basis to verify that the implemented rates are adequately recovering costs.

The key findings and recommendations are as follows:

- **Proposed Rate Increases.** Given the need for large rate increases, two increase implementation options have been developed. The first option (Option 1) would spread the large increases out over three years and would include annual user rate revenue increases of 20 percent for each of the first three years of the study period (FYE 2022 through FYE 2024) and 4 percent in the last two years (FYE 2025 and FYE 2026). The second option, Option 2 would include a single large increase of 50 percent in FYE 2022 followed by 4 percent annual increases thereafter. A third and a fourth implementation strategy would be to adopt only 2 years of increases at this time, equal to those of Option 1 or Option 2, and reevaluate the need for further increases after FYE 2023.

Because Option 2 would increase rate revenues higher in the first year, rather than the smoothed ramp-up in Option 1, Option 2 would generate more funding for capital over the next three years, while resulting in lower ultimate rates than Option 1. In Option 1, rate revenue increases would generate \$13.7 million for capital funding through FYE 2024 and result in a monthly single family rate of \$51.74 for that year. Over the same time period, Option 2 rate revenue increases would generate \$18.2 million for capital funding and result in a single family rate of \$48.57 in FYE 2024.

- **Retain the Current Rate Structure.** The proposed user rates largely retain the City’s current rate structure and will include a cost-of-service adjustment in FYE 2022 (implemented on March 1, 2022) based on the updated cost-of-service allocations followed by across the board increases in FYE 2023 through FYE 2026 (implemented on January 1 of each year.
- **Minimum Operating Reserve.** It is recommended that the City continues to complete financial planning based on the current operating reserve practice that sets a minimum operating reserve of 40 percent of annual operating expenses. However, given the identified CIP, the fund balance is projected to temporarily drop below this level in each of the implementation options.
 - Under Option 1, the operating fund balance would be drawn down to just above the 40 percent target in FYE 2023 and remain slightly above the target through the end of the study period. In FYE 2026 approximately \$3.2 million would be available within the replacement fund.
 - Under Option 2, the operating fund balance would be drawn down to just above the 40 percent target in FYE 2023 and remain slightly above the target through the end of the study period. In FYE 2026 approximately \$4.7 million would be available within the replacement fund.

Table 1 outlines the calculated wastewater charges for FYE 2022 through FYE 2026 for Option 1.

Table 1 Option 1: Proposed Wastewater Rates by Customer Class

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		20.0% w/COS ⁽¹⁾	20.0% ⁽²⁾	20.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Group I - Residential - Monthly Flat Rate						
Single Family Resident (SFR)	\$29.52	\$35.93	\$43.11	\$51.74	\$53.80	\$55.96
SFR w/ Second Dwelling Unit	\$44.28	\$53.89	\$64.67	\$77.60	\$80.70	\$83.93
Group I - Residential - Rates per HCF						
Multi Family Resident (MFR) (per HCF)	\$3.48	\$4.13	\$4.96	\$5.95	\$6.19	\$6.43
Mobile Home (per HCF)	\$3.48	\$4.13	\$4.96	\$5.95	\$6.19	\$6.43
Commercial - Rates per HCF						
GROUP II - Commercial 2	\$2.88	\$3.51	\$4.21	\$5.06	\$5.26	\$5.47
GROUP III - Commercial 3	\$4.38	\$5.01	\$6.01	\$7.21	\$7.50	\$7.80
GROUP IV - Commercial 4	\$8.10	\$8.76	\$10.51	\$12.61	\$13.12	\$13.64
Industrial Pretreatment Class III	\$4.82	\$5.66	\$6.79	\$8.14	\$8.47	\$8.81
Group V - School - Monthly Rates per Student						
Elementary School (per student)	\$0.59	\$0.71	\$0.85	\$1.02	\$1.06	\$1.10
Junior High School (per student)	\$0.87	\$1.06	\$1.27	\$1.53	\$1.59	\$1.65
High School (per student)	\$1.17	\$1.41	\$1.69	\$2.03	\$2.11	\$2.20
Boarding School (per student)	\$6.09	\$7.34	\$8.80	\$10.56	\$10.99	\$11.42

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		20.0% w/COS ⁽¹⁾	20.0% ⁽²⁾	20.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Breweries - Rates per HCF						
B1 – Brewery without a restaurant and hauls waste for outside treatment	\$2.88	\$3.51	\$4.21	\$5.06	\$5.26	\$5.47
B2 – Brewery without a restaurant that does not haul waste for outside treatment	\$9.34	\$9.76	\$11.72	\$14.06	\$14.62	\$15.21
B3 – Brewery with a restaurant and hauls waste for outside treatment	\$8.10	\$8.76	\$10.51	\$12.61	\$13.12	\$13.64
B4 – Brewery with a restaurant that does not haul waste for outside treatment	\$11.60	\$12.04	\$14.45	\$17.34	\$18.04	\$18.76
Other - Rate per HCF	\$2.97	\$3.43	\$4.12	\$4.94	\$5.14	\$5.35

Note:

- (1) Proposed rates for FYE 2022 include a cost-of-service adjustment and increases for specific rates vary from the 20.0-percent overall rate revenue increase.
- (2) Proposed rates for FYE 2023 and subsequent years are calculated by applying the proposed overall rate revenue increase to the FYE 2022 rate proportionally.

Table 2 outlines the calculated wastewater charges for FYE 2022 through FYE 2026 for Option 2.

Table 2 Option 2: Proposed Wastewater Rates by Customer Class

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		50.0% w/COS ⁽¹⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Group I - Residential - Monthly Flat Rate						
Single Family Resident (SFR)	\$29.52	\$44.91	\$46.71	\$48.57	\$50.52	\$52.54
SFR w/ Second Dwelling Unit	\$44.28	\$67.36	\$70.06	\$72.86	\$75.77	\$78.80
Group I - Residential - Rates per HCF						
Multi Family Resident (MFR) (per HCF)	\$3.48	\$5.16	\$5.37	\$5.59	\$5.81	\$6.04
Mobile Home (per HCF)	\$3.48	\$5.16	\$5.37	\$5.59	\$5.81	\$6.04
Commercial - Rates per HCF						
GROUP II - Commercial 2	\$2.88	\$4.39	\$4.57	\$4.75	\$4.94	\$5.13
GROUP III - Commercial 3	\$4.38	\$6.26	\$6.51	\$6.77	\$7.04	\$7.32
GROUP IV - Commercial 4	\$8.10	\$10.95	\$11.39	\$11.84	\$12.32	\$12.81
Industrial Pretreatment Class III	\$4.82	\$7.07	\$7.35	\$7.64	\$7.95	\$8.27

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		50.0% w/COS ⁽¹⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Group V - School - Monthly Rates per Student						
Elementary School (per student)	\$0.59	\$0.88	\$0.92	\$0.96	\$0.99	\$1.03
Junior High School (per student)	\$0.87	\$1.32	\$1.38	\$1.43	\$1.49	\$1.55
High School (per student)	\$1.17	\$1.76	\$1.84	\$1.91	\$1.98	\$2.06
Boarding School (per student)	\$6.09	\$9.17	\$9.54	\$9.92	\$10.31	\$10.73
Breweries - Rates per HCF						
B1 – Brewery without a restaurant and hauls waste for outside treatment	\$2.88	\$4.39	\$4.57	\$4.75	\$4.94	\$5.13
B2 – Brewery without a restaurant that does not haul waste for outside treatment	\$9.34	\$12.20	\$12.69	\$13.20	\$13.73	\$14.28
B3 – Brewery with a restaurant and hauls waste for outside treatment	\$8.10	\$10.95	\$11.39	\$11.84	\$12.32	\$12.81
B4 – Brewery with a restaurant that does not haul waste for outside treatment	\$11.60	\$15.05	\$15.66	\$16.28	\$16.93	\$17.61
Other - Rate per HCF	\$2.97	\$4.29	\$4.47	\$4.65	\$4.83	\$5.02

Note:

- (1) Proposed rates for FYE 2022 include a cost-of-service adjustment and increases for specific rates vary from the 50.0-percent overall rate revenue increase.
- (2) Proposed rates for FYE 2023 and subsequent years are calculated by applying the proposed overall rate revenue increase to the FYE 2022 rate proportionally.

Section 2 – Assumptions and Data

Financial, operational, and billing information provided by the City serve as the backbone of the revenue requirement and cost-of-service analysis. The projections developed for this analysis are based on several sources of information including the budgeted revenues and expenditures for FY 2021/22, actual revenues and expenditures from several prior fiscal years, EWPCF charge records, and other pertinent information. The analyses were completed by adding supplemental information and calculations to the City's existing financial model.

2.1 Growth and Wastewater Usage

The escalation factors used in this analysis are based on a review of both long-term and recent cost escalation factors from the Engineering News-Record Index, an industry benchmarking resource, and based on input from Carlsbad staff based on realized cost escalations. Other costs were escalated based on recent and specific cost trends. A customer growth escalation factor, used to project revenues, wastewater accounts, and wastewater discharge, is included based on the City's planning growth estimates. These factors are presented in Table 3.

Table 3 Escalation Factors

	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
General Inflation	2.5%	2.5%	2.5%	2.5%	2.5%
Labor Inflation	3.0%	3.0%	3.0%	3.0%	3.0%
Labor - PERS (Normal Cost)	13.2%	13.2%	13.2%	13.2%	13.2%
Labor - Health Insurance	15.7%	16.5%	16.7%	17.0%	16.8%
Chemicals Inflation	7.1%	6.9%	6.6%	6.4%	6.1%
Utilities Inflation	2.5%	2.5%	2.5%	2.5%	2.5%
Construction Inflation	3.5%	3.5%	3.5%	3.5%	3.5%
Property Tax Increase	2.5%	2.5%	2.5%	2.5%	2.5%
Depreciation Funding	1.2%	1.2%	1.2%	1.2%	1.2%
Interest Earnings	1.9%	2.1%	2.3%	2.5%	2.5%
Customer Growth	0.5%	0.3%	0.6%	0.2%	0.7%
General Inflation + Customer Growth	3.0%	2.8%	3.1%	2.7%	3.2%
No Annual Increase	0.0%	0.0%	0.0%	0.0%	0.0%

2.2 User Rate Categories

Carlsbad classifies its wastewater customers as follows:

- Group I
 - Single family residential (SFR)
 - Single family residential with second dwelling unit
 - Mobile Home
 - Multi-Family Residential
- Group II - Commercial 2
- Group III - Commercial 3
- Group IV - Commercial 4
- Group V - Schools
 - Elementary Schools
 - Junior High Schools
 - High Schools
 - Boarding Schools
- Group VI - Large volume (no accounts)
- Breweries
 - B1 – Brewery *without* a restaurant and hauls waste for outside treatment
 - B2 – Brewery *without* a restaurant that does not haul waste for outside treatment
 - B3 – Brewery *with* a restaurant and hauls waste for outside treatment
 - B4 – Brewery *with* a restaurant that does not haul waste for outside treatment
- Industrial pretreatment class III

SFR customers are charged a fixed monthly fee. SFR with a second-dwelling unit (SDU) has a higher fixed monthly fee to account for the additional discharges associated with the SDU as compared to a normal SFR account. All commercial groups and group VI customers are subject to a volumetric charge based on water usage. Schools are charged based on the number of students, as that influences a school's impact on the wastewater system.

The volumetric charges vary between customer classes based on each class's assumed flow and loadings. Wastewater customers' effluent discharges are not individually metered; instead, each user's discharges are estimated using wastewater billing records and/or metered water consumption records and assumed strength characteristics. The City's billing system has a detailed listing of historic water consumption by customer, property use classification, and month.

Commercial customers are grouped into the Group II, Group III and Group IV depending on their discharge characteristics. Customers in the Brewery category are split into separate rate classes based on whether or not they also operate as a restaurant, and whether they haul their brewing waste offsite for treatment.

The Group VI - Large Volume rate category is currently not in use as the only customer in this category is located outside the service area and no longer has a business presence within the City.

Section 3 – Revenue Requirement Analysis

The revenue requirement analysis is a comprehensive test of a utility's fiscal health, scrutinizing the adequacy of current revenues, and setting the basis for rate planning. It reviews the utility's revenues, expenses, debts, and reserve policies, and other requirements assessing the viability of each metric going forward. Where cash flows and balances are insufficient, the revenue requirement analysis determines the needed additional cash flows to meet all funding goals.

The City's FYE 2022 budget expenses serve as the base year for O&M costs. Furthermore, Carollo collected information related to current cash and restricted fund balances and policies, the budgeted capital improvement plan expenditures, and all other operating and non-operating future revenues and expenditures.

Once the revenue requirement is established by compiling all of the City's cost drivers, three tests are utilized to define the annual revenues necessary.

1. The cash flow sufficiency test looks for a net positive cash flow at the end of each fiscal year. This test looks at whether revenues exceed expenses; when they do not, this test recommends additional revenue.
2. The second test is the debt service coverage test. Utility bond issuances regularly include a stipulation that the agency maintain sufficient cash flows to cover the planned debt service, plus an additional percent of that debt service, typically between 25 and 40 percent. Currently, the City has no debt and but plans to enter into State Revolving Fund (SRF) loan agreements during the study period. For planning purposes, these loans are assumed to require debt coverage of 25 percent.
3. The third test is the reserve sufficiency test which determines whether projected cash balances are sufficient to guard the utility in the event of unforeseen costs or revenue shortfalls.

Revenues must be sufficient to satisfy each of the tests. If revenues are found to be deficient through one or both of the tests, then the greater deficiency (shortfall) drives the rate increase.

3.1 Fiscal Policies

As a part of the Revenue Requirement Analysis, the utility's fiscal policies were reviewed and evaluated in relation to capital funding and appropriate levels for the operating, capital and bond reserves. Based on the results of this review, these policies were incorporated within the financial model by tracking fund balances, interest earnings, use of capacity fees, deposits and withdrawals to funds, and tracking the operating fund as a way to assess the impacts of adjustments to wastewater rates.

3.1.1 Fund Policies and Benchmarks

Utility fund policies are intended to be implemented as a measure of safety and security against future events that may negatively impact the utility's financial health. Fund balances can address variability and timing of expenditures and receipts, as well as occasional disruptions in activities, costs, or revenues. The general objectives of these policies are to facilitate stable and predictable rates and funding sources, along with equitable recovery of costs from customers as they are being incurred (or accrued). Overall, a utility's fund policies are a collection of rules and guidelines. The collective use of individual funds will allow the utility to minimize its exposure to revenue shortfalls and coverage defaults. The City currently has a minimum target balance for its operating reserve set at 40 percent of annual operating expenditures.

3.1.2 Operating Fund

Carlsbad's past and current practice has targeted maintaining a minimum balance for utility funds equivalent to 40 percent of annual operating expenditures.

The operating fund provides a minimum year-end unrestricted fund balance needed to accommodate the cyclical nature of revenues and expenses. It provides a "cushion," which can be used to cover cash balance fluctuations. This fund is intended to address both anticipated and unanticipated changes in revenues and expenses. Anticipated changes may include billing and receipt cycles, payroll cycles, and other payables. The operating fund can be used to meet cash deficiencies due to unanticipated changes in usage, unforeseen expenditures, or drops in revenues.

The fund's target balance is characterized as a percentage of annual expenditures set at a level commensurate to the potential shortfall in revenues, based on the relative volatility of revenues of the utility's volume-based rate structure. In general, utilities that recover a significant portion of their costs through volume charges will experience greater fluctuations in revenues due to seasonal usage patterns and will face a greater degree of revenue risk than a utility with a flat rate structure. As noted, under Carlsbad's current rate structure, single family residential customers and schools are charged a flat monthly charge for sewer services and all other customers are charged on a volumetric basis.

Carlsbad should prepare itself for potential revenue volatility by maintaining an operating fund balance that meets or exceeds the minimum target fund balance, as set by utility practices.

3.1.3 Capital Fund

In addition to resources designed to protect against variations in operating costs and revenues, a capital fund can help meet the cost of capital projects, repairs, replacements, and unexpected emergency capital outlays. While it would be impractical to reserve against major system-wide failures such as a catastrophic earthquake (utilities often hold insurance policies for such catastrophic events), it is reasonable and prudent to identify and quantify possible failures of individual system components.

The City uses system reinvestment as the mechanism to determine capital funding levels. This provides a relatively stable and predictable source of funding for capital projects. Depreciation is a commonly used benchmark for system reinvestment. There are three major sources of funding for this capital balance: capacity fee revenues, interest, and depreciation funding from rates.

In addition to the Operating Fund, the capital fund will be used to meet capital needs and in cash funding a larger portion of its projected capital repair and replacement program during the study years. This will save the wastewater utility ratepayers money.

3.2 Operating Revenues

Operating revenues are projected from budgeted revenues based on the escalation factors shown in Table 3. Table 4 shows the projected user rate revenues based on the current rates and prior to the inclusion of any rate increases for FYE 2022 through FYE 2026. This base level of rate revenue is expected to increase modestly over the study period based on the expected level of growth in customer accounts.

Table 4 Current Rate Revenues (\$ millions)

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Commodity Usage	\$14.01	\$14.05	\$14.13	\$14.15	\$14.25
Sewer Pre-Treat	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02
Total Wastewater Rate Revenues	\$14.03	\$14.07	\$14.15	\$14.17	\$14.27

* Line or column totals may not tie due to rounding

In addition to above rate revenues, the City also receives other offsetting revenues that can be used to decrease the amount of revenues needed from user rates. Table 5 summarizes the projected offsetting revenues for the wastewater fund.

Table 5 Offsetting Revenues (\$ millions)

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Fines & Forfeitures	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
Income from Prop & Investments ⁽¹⁾	\$0.08	\$0.09	\$0.10	\$0.11	\$0.11
Interdepartmental	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02
Other Revenues	\$0.07	\$0.21	\$0.07	\$0.07	\$0.07
Total Offsetting Revenues	\$0.19	\$0.35	\$0.21	\$0.23	\$0.23

Note:

(1) Includes interest earned on the City's fund balance based on the Option 1 rate implementation. Option 2 would result in slightly higher fund balances and therefore slightly higher interest earnings.

* Line or column totals may not tie due to rounding

3.3 Operations and Maintenance Expenditures

The cost-of-service analysis utilizes the wastewater fund's FYE 2022 budget as the basis for forecasting future revenue needs. O&M expenditures are assumed to increase commensurate with cost inflation and projected cost increases associated with increases in wastewater flows due to growth and higher treatment standards. Revenues and expenses are projected for future fiscal years using the annual escalation factors shown in Table 3. Table 6 presents a summary of the projected operating expenditures for FYE 2022 through FYE 2026. Detailed O&M projections are included in Appendix A for Option 1 and in Appendix B for Option 2.

Table 6 Operating Expenditures (\$ millions)

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Personnel	\$2.78	\$2.98	\$3.09	\$3.20	\$3.30
Encina (EWPCF) Operations	\$4.67	\$4.80	\$4.94	\$5.07	\$5.24
Maintenance & Equipment	\$2.23	\$1.82	\$1.87	\$1.93	\$1.99
Capital Outlay	-	-	-	-	-
Replacement Funding	\$5.30	-	-	-	-
Projected Debt Service	-	\$0.21	\$0.21	\$0.21	\$0.21
Total Operating Expenses	\$14.98	\$9.80	\$10.11	\$10.41	\$10.73

* Line or column totals may not tie due to rounding

3.4 Capital Improvement Plan Funding

The City completed a wastewater master plan update in 2019 as well as an asset management master plan and a SCADA master plan. The plans developed capital improvement strategies, and the City has continually worked to refine the CIP based on project execution timelines, system needs, and funding availability. The City categorizes its expansion-related projects as 'connection projects' and replacement-related projects as 'replacement projects.' Along with the City identified collection system projects, the EWPCF expects to continue its own reinvestment through rehabilitation and replacement projects.

The City has budgeted \$33.3 million for 19 replacement projects for the next five years. In addition, there are projects associated with the EWA's general improvement projects and planned asset replacements totaling approximately \$43.4 million. The City also has budgeted \$11.3 million for 10 connection (expansion related) projects for the next five years. Table 7 shows the projected CIP project costs for FYE 2022 through FYE 2026. The funding analysis includes a 3.5 percent per year capital cost escalation factor to account for increases in construction and contracting costs starting in FYE 2023 and compounding for each subsequent year. For example, escalated project costs for FYE 2023 are 3.5 percent higher than the budgeted costs for that year, escalated costs for FYE 2024 are 7.1 percent higher than the budgeted costs to account for two years' of compounded escalation. Project level detail of the CIP is included in Appendix C.

Table 7 Capital Improvement Plan Expenditures (\$ millions)

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Connection Fee Fund Projects - Collections	\$1.3	\$1.7	\$1.4	\$3.9	\$3.0
Replacement Fund Projects - Collections	\$6.8	\$11.9	\$7.0	\$4.5	\$3.2
Encina Projects	\$11.8	\$7.1	\$7.7	\$8.5	\$8.2
Total Sewer Projects	\$19.9	\$20.7	\$16.1	\$16.9	\$14.4
Total Escalated Cost	\$19.9	\$21.4	\$17.2	\$18.7	\$16.6

* Line or column totals may not tie due to rounding

The City frequently adjusts this CIP based on engineering and planning needs for the wastewater system. Prior to the completion of the sewer master plan and asset management master plan, the City's CIP spending had been limited. However, the City continued to set aside a minimal amount of funds for capital projects throughout that time in anticipation of increased investments, however, not to the level required by the sewer master plan. This will provide a source of funds to cover a portion of the CIP. While the use of reserves to fund a share of capital projects will help to mitigate the necessary level of rate increases, significant rate increases will still be required due to the magnitude of the capital improvements that are necessary based on the recommendations of the sewer master plan and on the EWPCF's CIP needs.

Table 8 shows projected sources of funds for capital projects as well as the resulting capital funds balance. Over the next five years, the escalated CIP is projected to total approximately \$93.8 million as shown in Table 7. As of July 1, 2021 the City had approximately \$29.7 million in available capital funds including the connection fee and replacement fund balances, leaving approximately \$64.1 million in funding needs. As shown in Table 8, these funding needs will be met with a variety of sources including \$46.9 million of direct rate funding (shown in the "Amount to Be Rate Funded" line), \$11.0 million in replacement funding transfers (Transfers and Replacement Funding line), an expected \$4.6 million SRF loan, and a small amount of funding from connection fee revenues and interest earnings. Due to the level of capital spending needed, capital reserves will be depleted by FYE 2025.

The projected debt service associated with that loan is included in the “Projected Debt Service” line in Table 6.

Table 8 Capital Improvement Plan Funding (\$ millions)

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Escalated Capital Costs	\$19.86	\$21.41	\$17.22	\$18.74	\$16.57
Amount to be Rate Funded	-	-	\$4.64	\$10.57	\$12.32
Amount to be Funded with Reserves and Loans	\$19.86	\$21.41	\$12.58	\$8.17	\$4.25
Beginning Capital Funds Balance (Connection Fee and Replacement)	\$29.67	\$19.77	\$12.27	\$7.74	\$4.11
Transfers and Replacement Funding	\$9.28	\$9.00	\$7.74	\$4.11	\$3.21
Interest	\$0.33	\$0.21	\$0.14	\$0.10	\$0.05
Connection Fees	\$0.34	\$0.11	\$0.17	\$0.33	\$0.10
Loan Proceeds	-	\$4.60	-	-	-
Use of Funds for Projects	(\$19.86)	(\$21.41)	(\$12.58)	(\$8.17)	(\$4.25)
Year-End Balance	\$19.77	\$12.27	\$7.74	\$4.11	\$3.21
Change in Capital Reserves	\$9.90	\$7.50	\$4.52	\$3.64	\$0.90

* Line or column totals may not tie due to rounding

An important aspect of the capital funding plan is that the City intends to draw on both existing replacement reserves and existing connection fee reserves to fund capital projects. Since the implementation of the City's existing connection fees, reduced volumetric discharges due to conservation and changes in planned developments have reshaped the CIP projects that are necessary to serve new users. While some of the projects initially conceived and included in the connection fees have changed, other projects have been modified or expanded to take their place. Further, replacements and upgrades to the City's existing infrastructure are required to maintain the assets that serve new users and to maintain the excess system capacity that will be needed to serve users that have not yet connected to the system. To these ends, the City plans to allocate existing connection fee reserves, as well as a share of future connection fees, to pay for replacement projects that have an excess capacity component. The City plans to update their connection fees in a future study within the next twelve months.

3.5 Recommended Revenue Requirements

Significant rate revenue increases will be necessary in order to meet the City's projected revenue requirements, with funding of the capital program as the primary driver.

Given the need for large rate increases, four increase implementation options have been developed. The first option (Option 1) would spread the large increases out over three years followed by two years of lower increase. The second Option 2 would implement a single large increase in FYE 2022 followed by 4 years of lower increases. The calculated rate revenue increases for each option are shown in Table 9. The proposed rate revenue increases for FYE 2022 will be implemented by a full cost-of-service adjustment, and rate adjustments will vary by customer class. Ongoing increases for 2023 through 2026 will be applied across-the-board to FYE 2022 cost-of-service-based rates.

Table 9 Rate Revenue Increase Options

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Implementation Option	Rate Revenue Increase				
	Mar. 1, 2022	Jan. 1, 2023	Jan. 1, 2024	Jan. 1, 2025	Jan. 1, 2026
Option 1	20.0%	20.0%	20.0%	4.0%	4.0%
Option 2	50.0%	4.0%	4.0%	4.0%	4.0%

A third or a fourth implementation strategy would be to adopt only 2 years of increases at this time, equal to those of Option 1 or Option 2, and reevaluate the need for further increases after FYE 2023.

Each of the options would allow the City to fund the CIP and, over time, stabilize the wastewater fund balance. It is recommended that the City continues to complete financial planning based on the current operating reserve practice that sets a minimum operating reserve of 40 percent of annual operating expenses. However, the magnitude of the CIP will result in reserves falling below that target temporarily.

- Under Option 1, the operating fund balance would be drawn down to just above the 40 percent target in FYE 2023 and remain slightly above the target through the end of the study period. In FYE 2026 approximately \$3.2 million would be available within the replacement fund.
- Under Option 2, the operating fund balance would be drawn down to just above the 40 percent target in FYE 2023 and remain slightly above the target through the end of the study period. In FYE 2026 approximately \$4.7 million would be available within the replacement fund.

Table 10 below summarizes the revenue requirement projection for Option 1. Additional details of the Option 1 revenue requirement calculations are shown in Appendix D.

Table 10 Option 1 Revenue Requirement Summary (\$ millions)

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Pre-Rate Increase					
Rate Revenues without Increases	\$14.03	\$14.07	\$14.15	\$14.17	\$14.27
Revenue from Previous Years' Increases	-	\$2.81	\$6.23	\$10.32	\$11.37
Offsetting Revenues	\$0.19	\$0.21	\$0.22	\$0.23	\$0.24
Operating Revenues	\$14.22	\$17.09	\$20.59	\$24.72	\$25.88
Less Operating Expenditures	(\$14.98)	(\$9.80)	(\$10.11)	(\$10.41)	(\$10.73)
Less Rate Funded Capital	-	-	(\$4.64)	(\$10.57)	(\$12.32)
Cash Flow Surplus/(Deficit)	(\$0.76)	\$7.29	\$5.84	\$3.74	\$2.83
Rate Revenue Increase	20.0%	20.0%	20.0%	4.0%	4.0%
Post-Rate Increase					
Revenue from Increase	\$2.81	\$3.38	\$4.07	\$0.98	\$1.03
(Less): Rate Increase Delay	(\$1.87)	(\$1.69)	(\$2.04)	(\$0.49)	(\$0.51)
Cash Flow Surplus/(Deficit)	\$0.18	\$8.97	\$7.87	\$4.23	\$3.34

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Operating Fund Reserve					
Beginning Operating Fund Balance	\$8.11	\$4.30	\$4.28	\$4.41	\$4.54
Cash Flow	\$0.18	\$8.97	\$7.87	\$4.23	\$3.34
Transfers from Operating to Capital	(\$3.98)	(\$9.00)	(\$7.74)	(\$4.11)	(\$3.21)
Ending Operating Fund Balance	\$4.30	\$4.28	\$4.41	\$4.54	\$4.68
Ending Capital Fund Balance	\$19.77	\$12.27	\$7.74	\$4.11	\$3.21
Combined Ending Balance	\$24.07	\$16.55	\$12.15	\$8.64	\$7.88
Days of O&M Costs	908 days	629 days	448 days	309 days	273 days
Percent of Operations	28.7%	43.7%	43.6%	43.6%	43.6%

* Line or column totals may not tie due to rounding

Table 11 below summarizes the revenue requirement projection for Option 2. Additional details of the Option 2 revenue requirement calculations are shown in Appendix E.

Table 11 **Option 2 Revenue Requirement Summary (\$ millions)**

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Pre-Rate Increase					
Rate Revenues without Increases	\$14.03	\$14.07	\$14.15	\$14.17	\$14.27
Revenue from Previous Years' Increases	-	\$7.03	\$7.92	\$8.82	\$9.81
Offsetting Revenues	\$0.19	\$0.21	\$0.22	\$0.23	\$0.24
Operating Revenues	\$14.22	\$21.31	\$22.29	\$23.22	\$24.31
Less Operating Expenditures	(\$14.98)	(\$9.80)	(\$10.11)	(\$10.41)	(\$10.73)
Less Rate Funded Capital	-	-	(\$0.22)	(\$5.99)	(\$9.23)
Cash Flow Surplus/(Deficit)	(\$0.76)	\$11.51	\$11.96	\$6.83	\$4.36
Rate Revenue Increase	50.0%	4.0%	4.0%	4.0%	4.0%
Post-Rate Increase					
Revenue from Increase	\$7.01	\$0.84	\$0.88	\$0.92	\$0.96
(Less): Rate Increase Delay	(\$4.68)	(\$0.42)	(\$0.44)	(\$0.46)	(\$0.48)
Cash Flow Surplus/(Deficit)	\$1.58	\$11.93	\$12.40	\$7.29	\$4.84
Operating Fund Reserve					
Beginning Operating Fund Balance	\$8.11	\$4.30	\$4.28	\$4.41	\$4.54
Cash Flow	\$1.58	\$11.93	\$12.40	\$7.29	\$4.84
Transfers from Operating to Capital	(\$5.39)	(\$11.95)	(\$12.27)	(\$7.16)	(\$4.70)
Ending Operating Fund Balance	\$4.30	\$4.28	\$4.41	\$4.54	\$4.68
Ending Capital Fund Balance	\$21.17	\$16.64	\$12.27	\$7.16	\$4.70
Combined Ending Balance	\$25.47	\$20.92	\$16.68	\$11.70	\$9.38
Days of O&M Costs	961 days	796 days	615 days	419 days	325 days
Percent of Operations	28.7%	43.7%	43.6%	43.6%	43.6%

* Line or column totals may not tie due to rounding

Section 4 – Cost-of-Service Analysis

The purpose of a cost-of-service (COS) analysis is to provide a rational basis for distributing the full costs of wastewater service to each customer in proportion to the demands they place on the system. The COS analysis yields an appropriate method for allocating costs, which could be continued until substantial changes in cost drivers or customer flow or loading patterns occur.

Using a COS analysis, user rates are developed to allocate O&M, debt service, and rehabilitation and replacement costs to system users. Allocating costs begins by developing unit costs for each billable constituent: treatment flow, biological oxygen demand (BOD), total suspended solids (TSS), and collections flow. Unit costs are then applied to the flow and loading of each customer category in order to allocate the costs to each customer. The City's current rate structure was developed using a COS analysis. The overall procedure used to develop the user rates is as follows:

- *Revenue Needs.* Define the annual revenue that must be recovered from user rates and permit users.
- *Functional Allocation.* Determine the percentage allocation of O&M and capital costs to the billable constituents: treatment flow, BOD, TSS, and collection flow.
- *Unit Costs.* Develop unit costs for each billable constituent by dividing the total cost allocated to that constituent by the total wastewater flow or loadings of that constituent.
- *Customer Category Rates.* Calculate customer rates based on each customer type's wastewater discharge characteristics.

Note: The cost-of-service analysis values presented and discussed in this section are based on the Option 1 rate revenue increase implementation strategy outlined in the previous section. The calculation tables based on the Option 1 implementation strategy are included for reference in Appendix F. The calculation tables based on the Option 2 implementation strategy are included for reference in Appendix G.

4.1 Revenue Needs

The revenue needs are defined as the amount of revenues that must be recovered through user rates and industrial user rates in order to cover annual expenditures less any offsetting revenues. Expenditures and offsetting revenues for FYE 2022 are shown in Table 12 below.

Table 12 Expenditures and Offsetting Revenues (in millions)

	FYE 2022
O&M Expenses	\$9.68
Replacement Funding	\$5.30
Adjustment for Mid-Year Increase	\$1.87
Operating Cash Flows	\$0.18
Less: Offsetting Revenues	(\$0.19)
Rate Revenues Required	\$16.83

* Line or column totals may not tie due to rounding

For FYE 2022, wastewater rates must be set to recover \$16.83 million in annual revenue requirements. Because the rate revenue increases will be implemented in the middle of each fiscal year, the rate revenue requirements for each year include an “Adjustment for Mid-year Increase.” This line item adjusts the required rate revenue to reflect a full year increase to match the full year of projected discharges and customer bills that is used to calculate the rates for each year.

4.2 Functional Allocation

The American Water Works Association (AWWA) defines a two-step process for recovering costs for wastewater services. First, capital and O&M costs should be allocated to applicable functional categories. A functional category is a primary function of the utility that costs can be allocated to, then recovered based on how customers utilize the system. For this study, four functional categories were assumed as follows:

- **Treatment Flow** costs are associated with the treatment of sewage at the EWPCF based on volume and regardless of strength. The City does not meter sewage discharges. Instead, flows by each customer class are estimated using water consumption. The flow component is measured in assumed flow in hundred cubic feet (HCF).
- **BOD** costs are associated with providing the transportation and treatment of dissolved organisms within sewage effluent. BOD costs are allocated based on assumed BOD strength in a user class’ discharges. BOD is measured in pound.
- **TSS** costs relate to providing the transportation and treatment of solid objects within sewage effluent. TSS costs are allocated based on assumed TSS strength in a user class’ discharges. TSS is measured in pounds.
- **Collection Flow** costs represent the collection and transportation of sewage discharges to the EWPCF for treatment. The City does not meter sewage discharges. Instead, flows by each customer class are estimated using water consumption. The flow component is measured in assumed flow in hundred cubic feet (HCF).

Once the functional categories have been defined, each operating and capital cost is allocated on a line item basis to one or more of these functional categories. The functional costs are then used to develop unit costs for each category’s billable constituent.

4.2.1 Functional Allocation Factors

Annual expenditures and off-setting non-rate revenues are allocated on a line-by-line item basis between the functional components outlined in Table 13. The allocation metrics shown above are consistent with industry standards. Items that cannot be reasonably allocated between these functional categories are allocated "As-All-Others" and costs are split proportionally based on the allocation split of all other items.

Table 13 Functional Allocation Factors

Allocation Factor	Treatment Flow	BOD	TSS	Collection Flow	As All Other (Weighted Average)	Total
Treatment Flow/BOD/TSS	37.8%	35.7%	26.5%	0.0%	0.0%	100%
Collections	0.0%	5.0%	5.0%	90.0%	0.0%	100%
Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%	100%
Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%	100%
Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%	100%
Weighted Average O&M	25.6%	25.8%	19.5%	29.1%	N/A	100%
Weighted Average Total Rate Revenue Requirements	23.6%	23.2%	19.7%	33.5%	N/A	100%

* Line or column totals may not tie due to rounding

The allocation factors shown in Table 13 were determined as follows:

Treatment Flow/BOD/TSS: This allocation factor is used to allocate the ongoing costs the City pays to the EWPCF for wastewater treatment. It represents the estimated average allocation of the City's EWPCF charges and was determined based on detailed records of the City's EWPCF invoices by allocating specific invoice elements to Treatment Flow, BOD, and TSS.

Collections: This allocation factor is applied to line item costs that are specifically attributable to the City's wastewater collection activities. Collections costs are driven primarily by flow, and therefore they are allocated 90 percent to collections flow. The City's collections staff also spend time and resources reacting to and preventing issues within the collection system that are related to the BOD and TSS carried in the wastewater. These issues include material buildup, pipe degradation, and odor problems among others. To recognize these activities, a small share of collections costs are allocated to BOD and TSS at 5 percent each.

Staff Allocation: The staff allocation was determined using an analysis of the City's wastewater staff positions and the typical costs for each position. Operations and maintenance staff as well as asset management staff were allocated to the functional categories using the collections allocation, as their responsibilities relate to the collection system. All other staff costs are allocated to the As All Other category to be redistributed based on the weighted average O&M costs.

Vehicles: The vehicles allocation was determined based on the responsibilities of the staff members who typically utilize City vehicles. These include predominantly operations and maintenance personnel and as such, the majority of vehicle costs are allocated based on the collections allocation and split between Collection Flow, BOS, and TSS. The remaining 11.3 percent of costs are allocated to the As All Other category to be redistributed based on the weighted average O&M costs.

Capital Improvement Plan: Costs related to capital improvements are allocated to reflect the proposed CIP over the next 10 years. As shown in Table 14, capital costs for the collection system are assigned to the Collection Flow component. Capital costs for EWPCF projects are split between Treatment Flow, BOD, and TSS based on a typical allocation for municipal wastewater treatment plants. Using the 10-year CIP rather than a single year reflects that CIP projects are long-lived investments and helps to avoid large swings in cost allocations that could result from changes in the types of projects being completed from year-to-year.

Weighted Average – O&M: This allocation reflects the overall allocation of O&M costs.

Weighted Average – Total Revenue Requirements: This allocation reflects the overall allocation of total revenue requirements.

4.2.2 Functional Allocation Results

Table 15 shows the functional allocation of projected O&M costs for FYE 2022. The resulting allocated O&M is then included along with the other revenue requirement elements to determine the overall revenue requirements allocation as shown in Table 16. The total allocated revenue requirements for each functional category are then used to determine the unit costs by billable constituent and subsequently the rates. Additional detail showing the line item allocations is included in Appendix F.

Table 14 CIP Functional Allocation (\$ millions)

CIP Allocation	Treatment Flow	BOD	TSS	Collection Flow	Ten-Year Total
Encina Projects - Treatment	\$29.04	\$26.84	\$28.93	-	\$84.80
Carlsbad Projects - Collections	-	-	-	\$64.88	\$64.88
Less: Debt Funded Projects	-	-	-	(\$4.60)	(\$4.60)
Allocated Cash Funded CIP Costs	\$29.04	\$26.84	\$28.93	\$60.28	\$145.08
CIP Percentage Allocation	20.0%	18.5%	19.9%	33.5%	100%

* Line or column totals may not tie due to rounding

Table 15 O&M Functional Allocation (\$ millions)

O&M Cost Allocation	Treatment Flow	BOD	TSS	Collection Flow	As All Other (Weighted Average)	Total
Personnel	-	\$0.07	\$0.07	\$1.33	\$1.31	\$2.78
Maintenance & Equipment	-	\$0.06	\$0.06	\$1.12	\$2.07	\$3.31
Encina Services	\$1.76	\$1.66	\$1.24	-	-	\$4.67
Capital Outlay	-	-	-	-	-	-
Budget Adjustment	-	(\$0.02)	(\$0.02)	(\$0.43)	(\$0.60)	(\$1.08)
Allocated Costs	\$1.76	\$1.78	\$1.35	\$2.01	\$2.78	\$9.68
Reallocation of "As All Other"	\$0.71	\$0.72	\$0.54	\$0.81	(\$2.78)	-
Total O&M Allocation	\$2.47	\$2.49	\$1.89	\$2.82	-	\$9.68
O&M Percentage Allocation	25.6%	25.8%	19.5%	29.1%		100.0%

* Line or column totals may not tie due to rounding

Table 16 Revenue Requirements Functional Allocation (\$ millions)

Revenue Requirements Allocation	Treatment Flow	BOD	TSS	Collection Flow	As All Other (Weighted Average)	Total
Allocated O&M	\$2.47	\$2.49	\$1.89	\$2.82	-	\$9.68
Replacement Funding	\$1.06	\$0.98	\$1.06	\$2.20	-	\$5.30
Adjustment for Mid-Year Increase	-	-	-	-	\$1.87	\$1.87
Operating Cash Flows	-	-	-	-	\$0.18	\$0.18
Less: Offsetting Revenues	-	-	-	-	(\$0.19)	(\$0.19)
Allocated Costs	\$3.54	\$3.47	\$2.95	\$5.02	\$1.86	\$16.83
Reallocation of "As All Other"	\$0.44	\$0.43	\$0.37	\$0.62	(\$1.86)	-
Total O&M Allocation	\$3.97	\$3.90	\$3.31	\$5.64		\$16.83
O&M Percentage Allocation	23.6%	23.2%	19.7%	33.5%		100.0%

* Line or column totals may not tie due to rounding

Section 5 – Rate Design Analysis

5.1 Customer Characteristics

The City does not individually meter wastewater usage by its customers. Metering wastewater is an expensive and generally inefficient process. Single family residential customers, including duplex and flat billed multi-family customers tracked as 'M1' customers in the billing system data, incur a flat monthly charge for service. Schools are charged on a per student basis, and all other customer classes are charged based on a percentage of water consumption, which is outlined in this report.

For the purposes of this study, City staff provided wastewater billing records, including January 2018 through March 2021. FY 2019/20 data were utilized to develop usage information by customer class and by month. Wastewater billing records list monthly charges by customer as well as the amount of water used by each customer. Water consumption was not provided for those customers who receive a flat monthly bill (i.e., single family residences and schools). For these customers, data from the water utility billing system was used to estimate discharges to the sewer system. In order to test the validity of the customer data, two tests were performed: an accuracy test and a reliability test.

The accuracy test verifies that the correct data is being used by performing a price out on the provided data set in order to calculate revenues and compare the result to the City's actual revenues. An acceptable margin of error for this test is +/-3 percent (actual revenues compared to revenues calculated from the billing records). Based on preliminary actuals for FYE 2021, the actual wastewater rate revenues collected by the City in amounted to \$14.0 million. Using the customer data set provided, the calculated amount came to \$13.8 million, a difference of \$0.2 million or 1.5 percent. This minimal level of discrepancy validates that the data provided is sufficiently accurate to be used in the model and calculations.

Performing a reliability test is also necessary in order to confirm that the correct data is being used. From a statistical standpoint, the definition of reliability is the consistency of a set of measurements. In other words, "Can the provided data be considered a 'normal' year?" It is important to verify that a normalized year of data is being used as the foundation for developing rates; otherwise, revenues may be over or under collected. For example, during a wet year, consumption may be reduced. If a test for reliability is not performed under these circumstances, then the customer base may be understated. Rates would then be set at a level higher than needed and revenues would be over collected. While there is no guarantee that a 'normal' year will occur in the years addressed by this study, for the sake of projections, it is prudent to assume that this will be the case.

After the provided customer data sets were validated, the number of accounts, the amount of flow, BOD, and TSS for each customer class were determined. This allowed for the allocation of costs from the various functional categories (as described in the previous section) to each customer class. The customer classes are defined as follows:

- **Single Family Residential** includes single family residences, duplexes and M1 (multiple PDUs) accounts. These users are charged a flat monthly wastewater bill. The analysis of water usage was used to determine and estimated wastewater discharge of 203 gallons per day (gpd) or 8.27 HCF per month. The estimated discharge was calculated by applying a 90 percent return to sewer factor to the average water use for minimum two months of each of the last three fiscal years. This amount represents the estimated monthly indoor water use that is discharged to the sewer by each single family customer.
- **Multi-Family Residential** includes multi-family residences and mobile homes. These users are charged based on 95 percent of their water usage (per HCF).
- **Group II Commercial** includes soft water services, car washes, office buildings, professional buildings, laundromats, department and retail stores, warehouses, hospital convalescent homes and indoor theaters. These users are charged based on 95 percent of their water usage (per HCF).
- **Group III Commercial** includes hotels and motels without restaurants, repair and service stations, shopping centers, amusement parks, nightclubs, nurseries and greenhouses, commercial laundries, manufacturing and lumber yards. These users are charged based on 95% of their water usage (per HCF).
- **Group IV Commercial** includes hotels and motels with restaurants, wholesale bakeries, supermarkets, mortuaries, and restaurants. These users are charged based on 95 percent of their water usage (per HCF).
- **Group V** includes schools:
 - Elementary Schools are billed on a per-student basis.
 - Middle Schools are billed on a per-student basis.
 - High Schools are billed on a per-student basis.
 - Boarding Schools are billed on a per-student basis.
- **Group VI Large Volume** includes organizations and social services. These users are charged based on 95 percent of their water usage (per HCF). Currently, there is no accounts under this class.
- **Breweries** include all businesses where beer or beverage brewing takes place. Breweries are split into four classes based on the strength of their discharge. Each brewery class has specific concentration assumptions depending on whether or not they have an attached restaurant and whether or not they haul their brewing waste offsite for treatment. The brewery classes are:
 - B1 – Brewery without a restaurant and hauls waste for outside treatment. These users are charged based on 82.5 percent of their water usage (per HCF).
 - B2 – Brewery without a restaurant that does not haul waste for outside treatment. These users are charged based on 82.5 percent of their water usage (per HCF).
 - B3 – Brewery with a restaurant and hauls waste for outside treatment. These users are charged based on 82.5 percent of their water usage (per HCF).
 - B4 – Brewery with a restaurant and hauls waste for outside treatment. These users are charged based on 82.5 percent their water usage (per HCF).
- **Industrial Pretreatment Class III** includes any user discharging waste other than domestic waste, having a reasonable potential to adversely affect the Encina Water Pollution Control Facility and requires annual inspection and permits every three years. These users are charged based on 95 percent of their water usage.

5.1.1 Customer Class Loading and Allocation

The City provided a table that outlines the assumed loading concentrations by user class. It is assumed that these concentrations are accurate. No changes have been made to the assumed loading concentrations that are shown in Table 17.

Table 17 Loading Assumption by Class

	BOD (MG/L)	TSS (MG/L)
GROUP I - SFR & Minimum Charges	200	200
GROUP I - MFR/Mobile Homes	200	200
GROUP II - Commercial 2	130	121
GROUP III - Commercial 3	328	279
GROUP IV - Commercial 4	820	680
Group V Schools		
Elementary School	130	100
Middle School	130	100
High School	130	100
Boarding School	130	100
GROUP VI - Large Volume (no accounts)	80	80
Breweries		
B1 – Brewery without a restaurant that hauls waste for outside treatment (assumptions equal to Group II commercial)	130	121
B2 – Brewery without a restaurant that does not haul waste for outside treatment	1265	810
B3 – Brewery with a restaurant that hauls waste for outside treatment (assumptions equal to Group IV commercial)	820	680
B4 – Brewery with a restaurant that does not haul waste for outside treatment	1610	1090
Industrial Pretreatment Class III	299	477

* Line or column totals may not tie due to rounding

Using these assumptions, water consumption data, and the wastewater billing records, assumed usage by each customer class was calculated and is summarized in Table 18.

Table 18 Billed Units by Customer Class for FY 2021/22

Customer Class	Monthly Account	Flow	BOD	TSS
GROUP I - SFR & Minimum Charges	22,724	2,254,505	2,814,688	2,814,688
GROUP I - MFR/Mobile Homes	977	517,586	646,192	646,192
GROUP II - Commercial 2	1,237	341,658	277,969	257,115
GROUP III - Commercial 3	355	359,280	736,371	625,480
GROUP IV - Commercial 4	238	105,086	537,909	446,071
Other (No Accounts)	266	58,907	47,804	36,772
Brewery - B2	8	2,895	22,867	14,645

Customer Class	Monthly Account	Flow	BOD	TSS
Brewery - B4	4	3,308	33,246	22,508
GROUP VI - Large Volume (no accounts)	0	0	0	0
Industrial Pretreatment Class III	262	44,386	82,723	132,230
GROUP V - Elementary Schools	17	8,794	7,137	5,490
GROUP V - Junior High Schools	22	5,218	4,234	3,257
GROUP V - High Schools	72	9,657	7,836	6,028
GROUP V - Boarding Schools	3	5,373	4,360	3,354
Total	26,185	3,716,655	5,223,336	5,013,831

* Line or column totals may not tie due to rounding

Unit costs for each billable constituent are calculated by dividing the total allocated revenue requirements from Table 16 by the billed units from Table 18. Table 19 shows the calculation of unit costs for FYE 2022.

Table 19 Unit Costs per Billable Constituents

Unit Cost Calculation	Treatment Flow	BOD	TSS	Collection Flow
Allocated Rate Revenue (Millions)	\$3.97	\$3.90	\$3.31	\$5.64
Unit Basis for Rate Design	Estimated Sewer Flows (HCF)	Estimated BOD Discharges (lbs)	Estimated TSS Discharges (lbs)	Estimated Sewer Flows (HCF)
FYE 2022 Billed Units	3,716,655	5,223,336	5,013,831	3,716,655
FYE 2022 Unit Costs	\$1.07	\$0.75	\$0.66	\$1.52
	per HCF	per lb	per lb	per HCF

* Line or column totals may not tie due to rounding

5.2 Rate Design

Based on the rate evaluation performed under the previous tasks, it was determined that in general, the City’s current rate structure is capable of meeting the City’s goals. The recommended rates are based on “cost-of-service” principles that incorporate the work performed in previous tasks and adhere to Proposition 218 requirements.

Rates for each class are determined using two general steps:

- First, a unit cost per HCF of wastewater discharge is determined for each class based on the unit costs per billable constituent from Table 19 and the assumed BOD and TSS concentrations from Table 17.
- Next, each class’ unit cost per HCF of discharge is used along with other assumptions to determine the proposed rate.
 - For single family and other flat rate customers, the class unit cost per HCF is multiplied by the assumed flow per month to determine the monthly charge.

- For customers charges based on water usage, each class’s unit cost per HCF is multiplied by its return-to-sewer factor to determine the rate per HCF of water consumption.
- For schools, the class unit cost per HCF s multiplied by the assumed flow per student to determine the monthly rate per student.

The following sections outline the calculations used to determine rates for each customer class.

5.2.1 Class Unit Costs per HCF Discharges

* As noted above, the first step in the rate calculations is determining each class’s unit cost per HCF of sewage discharged. This calculation is performed by converting the BOD and TSS mg/l concentrations from Table 17 to a mass load concentration in lb/HCF. Next, the mass load in lb/HCF is multiplied by its respective unit cost per lb from Table 19 to calculate a component unit cost per HCF. Finally, the component unit costs per HCF for BOD and TSS are added to the unit costs for Treatment Flow and Collection Flow from Table 19 (already in terms of per HCF) to determine the total unit cost per HCF. An example of this calculation for Group 1 residential customers is shown in Table 20. An identical calculation is used to determine the \$/HCF unit cost for each class as summarized in Table 21.

Table 20 Group I Unit Cost per HCF Calculation

Group I Unit Cost per HCF Example	Concentration (mg/l)	Mass Load lb/HCF	Unit Cost \$/lb	Unit Cost \$/HCF Discharged
Item	A	B	C	D
BOD	200	1.25	\$0.75	\$0.93
TSS	200	1.25	\$0.67	\$0.83
Treatment Flow	N/A	N/A	N/A	\$1.07
Collections Flow	N/A	N/A	N/A	\$1.51
Total Unit Cost per HCF	N/A	N/A	N/A	\$4.35
Mass Load, lb per HCF (B) = [Concentration, mg/l (A)] x [3.785 gallons per L] x [748 gallons per HCF] / [453,592 mg per lb]				
Unit Cost, \$/HCF (D) = [Mass Load, lb/HCF (B)] x [Unit Cost, \$/lb (C)]				

* Line or column totals may not tie due to rounding

Table 21 All Classes Unit Cost per HCF Calculation

Customer Class Unit Costs per HCF Discharged	BOD (mg/l)	BOD (\$/HCF)	TSS (mg/l)	TSS (\$/HCF)	Flow (\$/HCF)	Total \$ Per HCF Discharged
GROUP I - SFR & Minimum Charges	200	\$0.93	200	\$0.82	\$2.59	\$4.35
GROUP I - MFR/Mobile Homes	200	\$0.93	200	\$0.82	\$2.59	\$4.35
GROUP II - Commercial 2	130	\$0.61	121	\$0.50	\$2.59	\$3.69
GROUP III - Commercial 3	328	\$1.53	279	\$1.15	\$2.59	\$5.27
GROUP IV - Commercial 4	820	\$3.82	680	\$2.80	\$2.59	\$9.22
Other (No Accounts)	130	\$0.61	100	\$0.41	\$2.59	\$3.61
Brewery - B2	1265	\$5.90	810	\$3.34	\$2.59	\$11.83
Brewery - B4	1610	\$7.51	1090	\$4.50	\$2.59	\$14.59

Customer Class Unit Costs per HCF Discharged	BOD (mg/l)	BOD (\$/HCF)	TSS (mg/l)	TSS (\$/HCF)	Flow (\$/HCF)	Total \$ Per HCF Discharged
GROUP VI - Large Volume (no accounts)	80	\$0.37	80	\$0.33	\$2.59	\$3.29
Industrial Pretreatment Class III	299	\$1.39	477	\$1.97	\$2.59	\$5.95
GROUP V - Elementary Schools	130	\$0.61	100	\$0.41	\$2.59	\$3.61
GROUP V - Junior High Schools	130	\$0.61	100	\$0.41	\$2.59	\$3.61
GROUP V - High Schools	130	\$0.61	100	\$0.41	\$2.59	\$3.61
GROUP V - Boarding Schools	130	\$0.61	100	\$0.41	\$2.59	\$3.61

* Line or column totals may not tie due to rounding

5.2.2 Customer Class Rate Calculations

Charges for customers that pay flat monthly fees are determined by multiplying their \$/HCF unit cost by their assumed monthly flow. The calculation of monthly charges for single-family and applicable multi-family, duplex, and flat charges is shown in Table 22. The calculated FYE 2022 charge for a single EDU customer is \$35.93, equal to the \$/HCF unit cost multiplied by the estimated monthly flow of 8.27 HCF. For single family customers with an accessory dwelling unit (ADU), and EDU flow factor of 1.5 is applied to reflect the additional sewage discharged by the ADU. This results in a calculated charge for FYE 2022 of \$53.89.

Table 22 Group I Monthly Rate Calculation

	Unit Cost \$/HCF Discharged	EDU Flow Factor	Estimated Monthly Discharge (HCF)	Proposed Monthly Rate (per Account) Rounded
GROUP I – Single-Family & Minimum Charges	\$4.35	1.00	8.27	\$35.93
Single Family with ADU	\$4.35	1.50	12.40	\$53.89

Table 23 shows the rate calculation for classes that pay rates based on their billed water consumption in HCF. The rates are determined by multiplying each class's \$/HCF unit cost by the return to sewer factor to determine the rate per HCF of water consumed.

Table 23 Rates per HCF of Water Consumption Calculation

Usage Based Rates	Unit Cost \$/HCF Discharged	Return to Sewer Factor	Calculated Monthly Rate (per HCF of Water Used) Rounded
GROUP I – Multi-Family/Mobile Homes	\$4.35	95%	\$4.13
GROUP II - Commercial 2	\$3.69	95%	\$3.51
GROUP III - Commercial 3	\$5.27	95%	\$5.01
GROUP IV - Commercial 4	\$9.22	95%	\$8.76
Other (No Accounts)	\$3.61	95%	\$3.43
Brewery - B2	\$11.83	83%	\$9.76

Usage Based Rates	Unit Cost \$/HCF Discharged	Return to Sewer Factor	Calculated Monthly Rate (per HCF of Water Used) Rounded
Brewery - B4	\$14.59	83%	\$12.04
GROUP VI - Large Volume (no accounts)	\$3.29	95%	\$3.13
Industrial Pretreatment Class III	\$5.95	95%	\$5.66

Charges for schools that pay rates on a per-student basis are determined by multiplying their \$/HCF unit cost by their assumed monthly flow per student. The calculation of monthly charges for each type of school is shown in Table 24.

Table 24 Schools Rates Calculation

Group V - Schools Rates	Unit Cost \$/HCF Discharged	Assumed Flow per Student (gpd)	Assumed Flow per Student (HCF per Month)	Proposed Monthly Rate (per Student) Rounded
GROUP V - Elementary Schools	\$3.61	4.8	0.2	\$0.71
GROUP V - Junior High Schools	\$3.61	7.2	0.3	\$1.06
GROUP V - High Schools	\$3.61	9.6	0.4	\$1.41
GROUP V - Boarding Schools	\$3.61	50.0	2.0	\$7.34

5.2.3 Proposed Rates

Table 25 shows the proposed rates for the Option 1 implementation strategy. The proposed rates for FYE 2022 are determined based on the COS analysis and Rate Design analysis as discussed above. Rates for FYE 2023 through FYE 2026 are determined by applying the proposed rate revenue increases for those to the FYE 2022 rates.

Table 25 Option 1: Proposed Wastewater Rates by Customer Class

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		20.0% w/COS ⁽¹⁾	20.0% ⁽²⁾	20.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Group I - Residential - Monthly Flat Rate						
Single Family Resident (SFR)	\$29.52	\$35.93	\$43.11	\$51.74	\$53.80	\$55.96
SFR w/ Second Dwelling Unit	\$44.28	\$53.89	\$64.67	\$77.60	\$80.70	\$83.93
Group I - Residential - Rates per HCF						
Multi Family Resident (MFR) (per HCF)	\$3.48	\$4.13	\$4.96	\$5.95	\$6.19	\$6.43
Mobile Home (per HCF)	\$3.48	\$4.13	\$4.96	\$5.95	\$6.19	\$6.43

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		20.0% w/COS ⁽¹⁾	20.0% ⁽²⁾	20.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Commercial - Rates per HCF						
GROUP II - Commercial 2	\$2.88	\$3.51	\$4.21	\$5.06	\$5.26	\$5.47
GROUP III - Commercial 3	\$4.38	\$5.01	\$6.01	\$7.21	\$7.50	\$7.80
GROUP IV - Commercial 4	\$8.10	\$8.76	\$10.51	\$12.61	\$13.12	\$13.64
Industrial Pretreatment Class III	\$4.82	\$5.66	\$6.79	\$8.14	\$8.47	\$8.81
Group V - School - Monthly Rates per Student						
Elementary School (per student)	\$0.59	\$0.71	\$0.85	\$1.02	\$1.06	\$1.10
Junior High School (per student)	\$0.87	\$1.06	\$1.27	\$1.53	\$1.59	\$1.65
High School (per student)	\$1.17	\$1.41	\$1.69	\$2.03	\$2.11	\$2.20
Boarding School (per student)	\$6.09	\$7.34	\$8.80	\$10.56	\$10.99	\$11.42
Breweries - Rates per HCF						
B1 – Brewery without a restaurant and hauls waste for outside treatment	\$2.88	\$3.51	\$4.21	\$5.06	\$5.26	\$5.47
B2 – Brewery without a restaurant that does not haul waste for outside treatment	\$9.34	\$9.76	\$11.72	\$14.06	\$14.62	\$15.21
B3 – Brewery with a restaurant and hauls waste for outside treatment	\$8.10	\$8.76	\$10.51	\$12.61	\$13.12	\$13.64
B4 – Brewery with a restaurant that does not haul waste for outside treatment	\$11.60	\$12.04	\$14.45	\$17.34	\$18.04	\$18.76
Other - Rate per HCF	\$2.97	\$3.43	\$4.12	\$4.94	\$5.14	\$5.35

Notes:

- (1) Proposed rates for FYE 2022 include a cost-of-service adjustment and increases for specific rates vary from the 20.0-percent overall rate revenue increase.
- (2) Proposed rates for FYE 2023 and subsequent years are calculated by applying the proposed overall rate revenue increase to the FYE 2022 rate proportionally.

Table 26 shows the proposed rates for the Option 2 implementation strategy. The proposed rates for FYE 2022 are determined based on the COS analysis and Rate Design analysis as discussed above. Rates for FYE 2023 through FYE 2026 are determined by applying the proposed rate revenue increases for those to the FYE 2022 rates. Tables detailing the cost-of-service and rate design analyses for Option 2 are included in Appendix H.

Table 26 Option 2: Proposed Wastewater Rates by Customer Class

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		50.0% w/COS ⁽¹⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Group I - Residential - Monthly Flat Rate						
Single Family Resident (SFR)	\$29.52	\$44.91	\$46.71	\$48.57	\$50.52	\$52.54
SFR w/ Second Dwelling Unit	\$44.28	\$67.36	\$70.06	\$72.86	\$75.77	\$78.80
Group I - Residential - Rates per HCF						
Multi Family Resident (MFR) (per HCF)	\$3.48	\$5.16	\$5.37	\$5.59	\$5.81	\$6.04
Mobile Home (per HCF)	\$3.48	\$5.16	\$5.37	\$5.59	\$5.81	\$6.04
Commercial - Rates per HCF						
GROUP II - Commercial 2	\$2.88	\$4.39	\$4.57	\$4.75	\$4.94	\$5.13
GROUP III - Commercial 3	\$4.38	\$6.26	\$6.51	\$6.77	\$7.04	\$7.32
GROUP IV - Commercial 4	\$8.10	\$10.95	\$11.39	\$11.84	\$12.32	\$12.81
Industrial Pretreatment Class III	\$4.82	\$7.07	\$7.35	\$7.64	\$7.95	\$8.27
Group V - School - Monthly Rates per Student						
Elementary School (per student)	\$0.59	\$0.88	\$0.92	\$0.96	\$0.99	\$1.03
Junior High School (per student)	\$0.87	\$1.32	\$1.38	\$1.43	\$1.49	\$1.55
High School (per student)	\$1.17	\$1.76	\$1.84	\$1.91	\$1.98	\$2.06
Boarding School (per student)	\$6.09	\$9.17	\$9.54	\$9.92	\$10.31	\$10.73
Breweries - Rates per HCF						
B1 – Brewery without a restaurant and hauls waste for outside treatment	\$2.88	\$4.39	\$4.57	\$4.75	\$4.94	\$5.13
B2 – Brewery without a restaurant that does not haul waste for outside treatment	\$9.34	\$12.20	\$12.69	\$13.20	\$13.73	\$14.28
B3 – Brewery with a restaurant and hauls waste for outside treatment	\$8.10	\$10.95	\$11.39	\$11.84	\$12.32	\$12.81
B4 – Brewery with a restaurant that does not haul waste for outside treatment	\$11.60	\$15.05	\$15.66	\$16.28	\$16.93	\$17.61
Other - Rate per HCF	\$2.97	\$4.29	\$4.47	\$4.65	\$4.83	\$5.02

Note:

- (1) Proposed rates for FYE 2022 include a cost-of-service adjustment and increases for specific rates vary from the 50.0-percent overall rate revenue increase.
- (2) Proposed rates for FYE 2023 and subsequent years are calculated by applying the proposed overall rate revenue increase to the FYE 2022 rate proportionally.

Section 6 – Rate Comparison

Carollo conducted a survey of wastewater rates to compare the City’s existing and proposed rates to those of surrounding agencies. All wastewater systems face unique challenges, and they develop their rates accordingly. Taking this into consideration, Figure 3 below summarizes regional monthly wastewater bills for single family residential customers, including the City’s current and proposed monthly flat rates. As shown in the figure, the City’s rate is the lowest amongst surveyed agencies. With the proposed increases for FYE 2022, for both implementation options, the rate remains below the regional average. Additionally, this survey might not reflect rate increases currently under review, but not yet implemented.

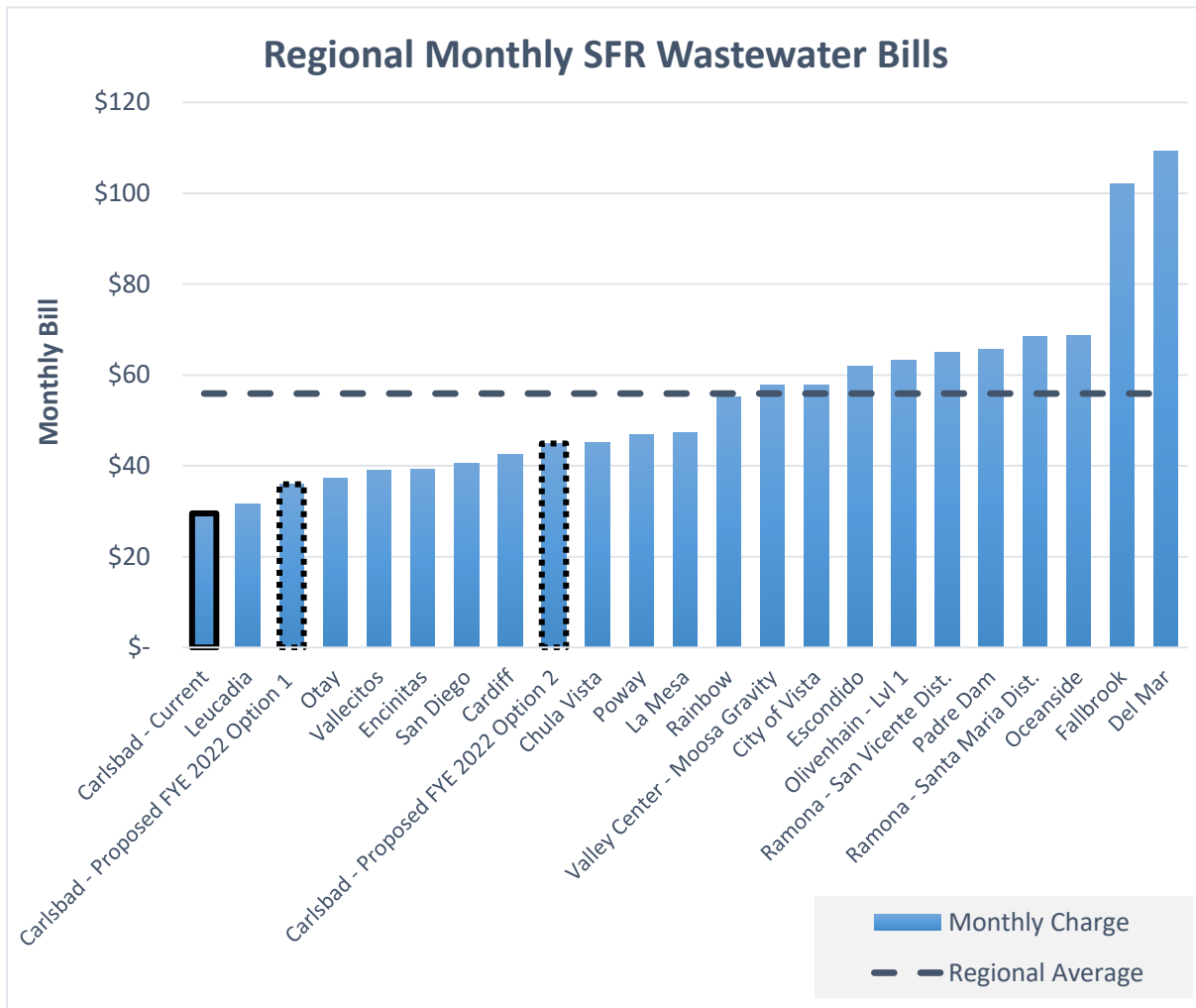


Figure 2 Regional Monthly Single-Family Residential Rate Comparison

Appendix A

PROJECTED O&M – OPTION 1

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
REVENUES			Projection	Projection	Projection	Projection	Projection
Charges for Services							
5100	Commodity Usage	Customer Demand Growth	\$ 14,007,136	\$ 16,858,290	\$ 20,344,680	\$ 24,454,300	\$ 25,606,480
5112	Sewer Pre-Treat	Customer Demand Growth	19,614	23,610	28,490	34,240	35,850
5121	Sewer Laterals	Customer Demand Growth	-	-	-	-	-
	Other Charges for Services	General Inflation	-	-	-	-	-
Total Charges for Services			\$ 14,026,750	\$ 16,881,900	\$ 20,373,170	\$ 24,488,540	\$ 25,642,330
Fines and Forfeitures							
5225	Late Charges	Customer Demand Growth	\$ 30,399	\$ 30,490	\$ 30,660	\$ 30,710	\$ 30,920
	Other Fines and Forfeitures	Customer Demand Growth	-	-	-	-	-
Total Fines and Forfeitures			\$ 30,399	\$ 30,490	\$ 30,660	\$ 30,710	\$ 30,920
Income from Property & Investments							
5300	Interest Income - Pooled Cash	[Calculated]	\$ 75,000	\$ 90,360	\$ 98,440	\$ 110,280	\$ 113,480
5305	Interest-Unrealzd Gains/Losses	General Inflation	-	-	-	-	-
5310	Interest Income Frm Othr Inv	General Inflation	-	-	-	-	-
5360	Sale of Capital Assets (cash adj)	General Inflation	-	-	-	-	-
5361	Donated Assets	General Inflation	-	-	-	-	-
	Other Income from Property & Investments	General Inflation	-	-	-	-	-
Total Income from Property & Investments			\$ 75,000	\$ 90,360	\$ 98,440	\$ 110,280	\$ 113,480
Interdepartmental							
5430	Eng Labor	General Inflation	\$ 15,931	\$ 16,330	\$ 16,740	\$ 17,160	\$ 17,590
	Other Interdepartmental	General Inflation	-	-	-	-	-
Total Interdepartmental			\$ 15,931	\$ 16,330	\$ 16,740	\$ 17,160	\$ 17,590
Other Revenues							
5550	Prior Year Fee Refunds	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
5636	Loss Recovery	General Inflation	2,895	2,970	3,040	3,120	3,200
5639	Misc Reimbursement Exp.	General Inflation	65,777	67,420	69,110	70,840	72,610
5664	MISC AR Write Offs	General Inflation	-	-	-	-	-
5674	Misc Revenues	General Inflation	-	-	-	-	-
	Other Other Revenues	General Inflation	-	-	-	-	-
Total Other Revenues			\$ 68,672	\$ 70,390	\$ 72,150	\$ 73,960	\$ 75,810
TOTAL REVENUES			\$ 14,216,752	\$ 17,089,470	\$ 20,591,160	\$ 24,720,650	\$ 25,880,130

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
EXPENDITURES			Projection	Projection	Projection	Projection	Projection
Personnel							
6100	Reg Salaries	Labor Inflation	\$ 1,784,827	\$ 1,838,370	\$ 1,893,520	\$ 1,950,330	\$ 2,008,840
6101	Incentive Pay	Labor Inflation	-	-	-	-	-
6135	Hazard Pay	Labor Inflation	31,602	32,550	33,530	34,540	35,580
6150	IOD Worker's Comp	Labor Inflation	-	-	-	-	-
6200	Overtime Salaries	Labor Inflation	60,000	61,800	63,650	65,560	67,530
6210	Standby Pay	Labor Inflation	26,000	26,780	27,580	28,410	29,260
6300	Parttimes Salaries	Labor Inflation	18,776	19,340	19,920	20,520	21,140
6305	Intern Salaries	Labor Inflation	7,429	7,650	7,880	8,120	8,360
6400	Temporary Help	Labor Inflation	-	-	-	-	-
6501	Health Insurance	Labor - Health Insurance	318,780	340,710	363,300	386,480	410,170
6510	Life Insurance	General Inflation	1,270	1,300	1,330	1,360	1,390
6511	AD&D - City Paid	General Inflation	635	650	670	690	710
6520	Vision Insurance	General Inflation	-	-	-	-	-
6530	Medicare	General Inflation	27,859	28,560	29,270	30,000	30,750
6629	Cell Phone Reimbursement	General Inflation	-	-	-	-	-
6630	Auto Allowance	General Inflation	1,138	1,170	1,200	1,230	1,260
6640	Earned Leave Accrual	Labor Inflation	-	-	-	-	-
6651	Healthy Emp Awards	General Inflation	-	-	-	-	-
6653	Final Vacation Pay	Labor Inflation	17,000	17,510	18,040	18,580	19,140
6654	Final Sick Leave Pay	Labor Inflation	-	-	-	-	-
6655	Disability	General Inflation	16,146	16,550	16,960	17,380	17,810
6656	Unemployment	General Inflation	9,129	9,360	9,590	9,830	10,080
6657	Worker's Compensation	General Inflation	32,250	33,060	33,890	34,740	35,610
6720	PERS	Labor - PERS (Normal Cost)	220,696	242,665	249,945	257,444	265,167
6723	PERS Unfunded Liab Exp	Labor - PERS (Normal Cost)	204,586	304,066	315,460	330,581	337,284
6721	PERS (GASB 68 CONTRA ACCOUNT)	Labor - PERS (Normal Cost)	-	-	-	-	-
6722	Operation Expense	General Inflation	-	-	-	-	-
6730	Social Security	General Inflation	-	-	-	-	-
6740	Deferred Comp	General Inflation	705	720	740	760	780
	Other Personnel	General Inflation	-	-	-	-	-
Total Personnel Costs			\$ 2,778,829	\$ 2,982,811	\$ 3,086,475	\$ 3,196,554	\$ 3,300,861

Maintenance & Equipment

7111	Other Mach & Equip	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
7115	Vehicle Rentals	General Inflation	-	-	-	-	-
7119	Misc Rentals	General Inflation	6,500	6,660	6,830	7,000	7,180
7120	Misc Leases	General Inflation	-	-	-	-	-
7210	Office Equip Maint	General Inflation	-	-	-	-	-
7211	Communication Equip Maintenance	General Inflation	1,000	1,030	1,060	1,090	1,120
7215	Software Maintenance	General Inflation	46,650	47,820	49,020	50,250	51,510
7216	Computer Maintenance	General Inflation	-	-	-	-	-
7220	Vehicle Maintenance	General Inflation	15,000	15,380	15,760	16,150	16,550
7221	Wash and Wax	General Inflation	4,500	4,610	4,730	4,850	4,970
7222	Other Equip Maint	General Inflation	-	-	-	-	-
7226	Pipeline Maintenance	General Inflation	145,000	148,630	152,350	156,160	160,060
7230	Routine Building Maintenance	General Inflation	-	-	-	-	-
7241	Asphalt Repairs	General Inflation	10,000	10,250	10,510	10,770	11,040
7249	Maintenance, Repair and Rehab	General Inflation	3,000	3,080	3,160	3,240	3,320
7400	Audit	General Inflation	-	-	-	-	-
7410	Legal	General Inflation	-	-	-	-	-
7435	Administrative	General Inflation	-	-	-	-	-
7490	Misc Professional Services	General Inflation	287,100	294,280	301,640	309,180	316,910
7500	Encina Services	Gnrl Infltn + Cstmr Dmnd Grwth	4,665,000	4,795,430	4,942,510	5,074,310	5,235,890
7500	Encina Services (Pension Payoff)	No Annual Increase	-	(266,721)	(273,876)	(281,750)	(289,850)
7550	Miscellaneous Outside Services	General Inflation	293,500	300,840	308,360	316,070	323,970
7551	Bank Services	General Inflation	31,800	32,600	33,420	34,260	35,120
7553	Comm Arts Support	General Inflation	-	-	-	-	-
7554	Regulatory/Permitting Fees	General Inflation	45,000	46,130	47,280	48,460	49,670
7556	Misc Services	General Inflation	-	-	-	-	-
7558	Laundry and Uniform Mainteance	General Inflation	5,000	5,130	5,260	5,390	5,520
7559	Electrical/SCADA Services	General Inflation	15,600	15,990	16,390	16,800	17,220
7560	Water Sampling Services	General Inflation	-	-	-	-	-
7562	FOG Inspection Services	General Inflation	61,000	62,530	64,090	65,690	67,330
7563	Smartcover WIFI/Alarm Services	General Inflation	50,000	51,250	52,530	53,840	55,190
7564	Landscaping Services	General Inflation	60,000	61,500	63,040	64,620	66,240
7710	Ads and Publishing	General Inflation	2,000	2,050	2,100	2,150	2,200
7711	Dues and Subscriptions	General Inflation	10,500	10,760	11,030	11,310	11,590
7712	Books and Publications	General Inflation	500	510	520	530	540
7713	Audio Visual Materials	General Inflation	-	-	-	-	-
7715	Printing	General Inflation	7,500	7,690	7,880	8,080	8,280
7720	Postage	General Inflation	3,500	3,590	3,680	3,770	3,860
7725	Office Supplies	General Inflation	5,000	5,130	5,260	5,390	5,520
7726	Office Furniture & Equipment	General Inflation	5,000	5,130	5,260	5,390	5,520
7730	Computer Software	General Inflation	10,000	10,250	10,510	10,770	11,040
7731	Misc. Computer Hardware	General Inflation	3,000	3,080	3,160	3,240	3,320
7735	Promo Materials	General Inflation	5,000	5,130	5,260	5,390	5,520
7745	Food Expense	General Inflation	-	-	-	-	-
7750	Heat and Light	Utilities Inflation	285,000	292,130	299,430	306,920	314,590

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
7751	Telephone & Communications	Utilities Inflation	12,000	12,300	12,610	12,930	13,250
7752	Waste Disposal Services	Utilities Inflation	10,000	10,250	10,510	10,770	11,040
7753	Water	Utilities Inflation	36,000	36,900	37,820	38,770	39,740
7801	Building Maintenance	General Inflation	-	-	-	-	-
7810	Electrical Supplies	General Inflation	500	510	520	530	540
7811	Janitorial Supplies	General Inflation	300	310	320	330	340
7820	Parts-Vehicles	General Inflation	500	510	520	530	540
7821	Parts-Equip	General Inflation	169,000	173,230	177,560	182,000	186,550
7830	Rock and Mineral Products	General Inflation	4,000	4,100	4,200	4,310	4,420
7831	Asphalt	General Inflation	500	510	520	530	540
7850	Small Tools	General Inflation	1,500	1,540	1,580	1,620	1,660
7851	Safety Equipment	General Inflation	21,300	21,830	22,380	22,940	23,510
7852	Uniforms and Accessories	General Inflation	5,000	5,130	5,260	5,390	5,520
7853	Meters/Fittings	General Inflation	-	-	-	-	-
7857	Personal Protective Equipment	General Inflation	-	-	-	-	-
7880	Gasoline and Oil	Utilities Inflation	2,000	2,050	2,100	2,150	2,200
7883	Chemicals	Chemicals Inflation	72,000	73,800	75,650	77,540	79,480
7886	Training Supplies	General Inflation	-	-	-	-	-
7896	Medical Supplies - Disposable	General Inflation	-	-	-	-	-
7899	Misc Supplies	General Inflation	24,400	25,010	25,640	26,280	26,940
8110	Employee Training	General Inflation	3,000	3,080	3,160	3,240	3,320
8120	Tuition Reimbursement	General Inflation	-	-	-	-	-
8130	Training/Training Related Travel	General Inflation	3,000	3,080	3,160	3,240	3,320
8500	Depreciation	Depreciation Funding	5,300,000	5,363,070	5,425,820	5,488,760	5,551,880
<i>Note: Depreciation transfer for FYE 2023 to FYE 2026 not included in revenue requirement calculations for rate study.</i>							
8520	Conference Travel	General Inflation	500	510	520	530	540
8522	Misc. Meals/Miles	General Inflation	6,000	6,150	6,300	6,460	6,620
8530	Bad Debt Exp - Other Inv/Bills	General Inflation	40,600	41,620	42,660	43,730	44,820
8532	Disposal of Assets	General Inflation	-	-	-	-	-
8534	Reg Over/Short	General Inflation	-	-	-	-	-
8542	NED Rental Assistance Payments	No Annual Increase	-	-	-	-	-
8544	Lateral Assistance Program	No Annual Increase	25,000	25,000	25,000	25,000	25,000
8610	Settlements	General Inflation	-	-	-	-	-
8700	Contingencies	No Annual Increase	-	-	-	-	-
8809	Vehicle Direct Charges	General Inflation	18,628	19,090	19,570	20,060	20,560
8810	Vehicle Maintenance (2)	General Inflation	92,440	94,750	97,120	99,550	102,040
8811	Vehicle Replacement	General Inflation	250,342	256,600	263,020	269,600	276,340
8830	General Liab	General Inflation	98,220	100,680	103,200	105,780	108,420
8860	Information Technologies	General Inflation	231,260	237,040	242,970	249,040	255,270
8890	Misc Interdepartmental Charges	General Inflation	768,005	787,210	806,890	827,060	847,740
8891	Mis Chg Back	General Inflation	-	-	-	-	-
8892	Utility Billing Chargeback	General Inflation	-	-	-	-	-
8910	Fiscal Agent Fees	General Inflation	-	-	-	-	-
8911	Arbitrage Costs	General Inflation	-	-	-	-	-
8920	Principal	[Calculated]	-	114,535	116,826	119,162	121,545
8921	Interest Expense	[Calculated]	-	92,929	90,639	88,302	85,919
8922	Int Exp-Capitalized Interest	One Time Expense	-	-	-	-	-
	Other - Heat & Light	No Annual Increase	-	-	-	-	-
	Other - Parts & Equipment	No Annual Increase	-	-	-	-	-
	Other - Smart Covers	No Annual Increase	-	-	-	-	-
	Add'l Maintenance & Equipment	General Inflation	-	-	-	-	-
	Other Maintenance & Equipment	[Calculated Below]	(1,081,941)	(1,103,580)	(1,125,651)	(1,148,164)	(1,171,128)
Total Maintenance & Equipment Costs			\$ 12,196,704	\$ 12,391,613	\$ 12,656,547	\$ 12,907,290	\$ 13,189,417

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Capital Outlay							
9005	Capital Outlay < \$10k - New	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
9006	Capital Outlay < \$10k - Repl	General Inflation	-	-	-	-	-
9010	Cap Outlay - Vehicles	General Inflation	-	-	-	-	-
9020	Computer Equip > \$10k - Repl	General Inflation	-	-	-	-	-
9021	Office Equipment	General Inflation	-	-	-	-	-
9022	Other Equipment	General Inflation	-	-	-	-	-
9030	Office Furniture	General Inflation	-	-	-	-	-
9050	Capitalized Assets	General Inflation	-	-	-	-	-
	Other Capital Outlay	General Inflation	-	-	-	-	-
Total Capital Outlay Costs			\$ -	\$ -	\$ -	\$ -	\$ -
Other Financing Uses							
9999	Additional Transfer to Capital Fund	One Time Expense	\$ -	\$ -	\$ -	\$ -	\$ -
	Transfer Out - Debt Service	General Inflation	-	-	-	-	-
Total Other Financing Uses Costs			\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL EXPENDITURES			\$ 14,975,533	\$ 15,374,425	\$ 15,743,022	\$ 16,103,844	\$ 16,490,278
TOTAL W/O DEPR & TRANSFER TO CAPITAL			\$ 9,675,533	\$ 10,011,355	\$ 10,317,202	\$ 10,615,084	\$ 10,938,398
RATE REVENUES WITHOUT INCREASES							
	Commodity Usage	Customer Demand Growth	\$ 14,007,136	\$ 14,048,576	\$ 14,128,254	\$ 14,151,796	\$ 14,248,623
	Sewer Pre-Treat	Customer Demand Growth	\$ 19,614	\$ 19,672	\$ 19,783	\$ 19,816	\$ 19,952
	Sewer Laterals	Customer Demand Growth	\$ -	\$ -	\$ -	\$ -	\$ -
	Other Charges for Services	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
			\$ 14,026,750	\$ 14,068,248	\$ 14,148,037	\$ 14,171,613	\$ 14,268,575

Appendix B

PROJECTED O&M – OPTION 2

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
REVENUES			Projection	Projection	Projection	Projection	Projection
Charges for Services							
5100	Commodity Usage	Customer Demand Growth	\$ 14,007,136	\$ 21,072,860	\$ 22,040,070	\$ 22,959,870	\$ 24,041,640
5112	Sewer Pre-Treat	Customer Demand Growth	19,614	29,510	30,860	32,150	33,660
5121	Sewer Laterals	Customer Demand Growth	-	-	-	-	-
	Other Charges for Services	General Inflation	-	-	-	-	-
Total Charges for Services			\$ 14,026,750	\$ 21,102,370	\$ 22,070,930	\$ 22,992,020	\$ 24,075,300
Fines and Forfeitures							
5225	Late Charges	Customer Demand Growth	\$ 30,399	\$ 30,490	\$ 30,660	\$ 30,710	\$ 30,920
	Other Fines and Forfeitures	Customer Demand Growth	-	-	-	-	-
Total Fines and Forfeitures			\$ 30,399	\$ 30,490	\$ 30,660	\$ 30,710	\$ 30,920
Income from Property & Investments							
5300	Interest Income - Pooled Cash	[Calculated]	\$ 75,000	\$ 90,360	\$ 98,440	\$ 110,280	\$ 113,480
5305	Interest-Unrealzd Gains/Losses	General Inflation	-	-	-	-	-
5310	Interest Income Frm Othr Inv	General Inflation	-	-	-	-	-
5360	Sale of Capital Assets (cash adj)	General Inflation	-	-	-	-	-
5361	Donated Assets	General Inflation	-	-	-	-	-
	Other Income from Property & Investments	General Inflation	-	-	-	-	-
Total Income from Property & Investments			\$ 75,000	\$ 90,360	\$ 98,440	\$ 110,280	\$ 113,480
Interdepartmental							
5430	Eng Labor	General Inflation	\$ 15,931	\$ 16,330	\$ 16,740	\$ 17,160	\$ 17,590
	Other Interdepartmental	General Inflation	-	-	-	-	-
Total Interdepartmental			\$ 15,931	\$ 16,330	\$ 16,740	\$ 17,160	\$ 17,590
Other Revenues							
5550	Prior Year Fee Refunds	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
5636	Loss Recovery	General Inflation	2,895	2,970	3,040	3,120	3,200
5639	Misc Reimbursement Exp.	General Inflation	65,777	67,420	69,110	70,840	72,610
5664	MISC AR Write Offs	General Inflation	-	-	-	-	-
5674	Misc Revenues	General Inflation	-	-	-	-	-
	Other Other Revenues	General Inflation	-	-	-	-	-
Total Other Revenues			\$ 68,672	\$ 70,390	\$ 72,150	\$ 73,960	\$ 75,810
TOTAL REVENUES			\$ 14,216,752	\$ 21,309,940	\$ 22,288,920	\$ 23,224,130	\$ 24,313,100

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
EXPENDITURES			Projection	Projection	Projection	Projection	Projection
Personnel							
6100	Reg Salaries	Labor Inflation	\$ 1,784,827	\$ 1,838,370	\$ 1,893,520	\$ 1,950,330	\$ 2,008,840
6101	Incentive Pay	Labor Inflation	-	-	-	-	-
6135	Hazard Pay	Labor Inflation	31,602	32,550	33,530	34,540	35,580
6150	IOD Worker's Comp	Labor Inflation	-	-	-	-	-
6200	Overtime Salaries	Labor Inflation	60,000	61,800	63,650	65,560	67,530
6210	Standby Pay	Labor Inflation	26,000	26,780	27,580	28,410	29,260
6300	Parttimes Salaries	Labor Inflation	18,776	19,340	19,920	20,520	21,140
6305	Intern Salaries	Labor Inflation	7,429	7,650	7,880	8,120	8,360
6400	Temporary Help	Labor Inflation	-	-	-	-	-
6501	Health Insurance	Labor - Health Insurance	318,780	340,710	363,300	386,480	410,170
6510	Life Insurance	General Inflation	1,270	1,300	1,330	1,360	1,390
6511	AD&D - City Paid	General Inflation	635	650	670	690	710
6520	Vision Insurance	General Inflation	-	-	-	-	-
6530	Medicare	General Inflation	27,859	28,560	29,270	30,000	30,750
6629	Cell Phone Reimbursement	General Inflation	-	-	-	-	-
6630	Auto Allowance	General Inflation	1,138	1,170	1,200	1,230	1,260
6640	Earned Leave Accrual	Labor Inflation	-	-	-	-	-
6651	Healthy Emp Awards	General Inflation	-	-	-	-	-
6653	Final Vacation Pay	Labor Inflation	17,000	17,510	18,040	18,580	19,140
6654	Final Sick Leave Pay	Labor Inflation	-	-	-	-	-
6655	Disability	General Inflation	16,146	16,550	16,960	17,380	17,810
6656	Unemployment	General Inflation	9,129	9,360	9,590	9,830	10,080
6657	Worker's Compensation	General Inflation	32,250	33,060	33,890	34,740	35,610
6720	PERS	Labor - PERS (Normal Cost)	220,696	242,665	249,945	257,444	265,167
6723	PERS Unfunded Liab Exp	Labor - PERS (Normal Cost)	204,586	304,066	315,460	330,581	337,284
6721	PERS (GASB 68 CONTRA ACCOUNT)	Labor - PERS (Normal Cost)	-	-	-	-	-
6722	Operation Expense	General Inflation	-	-	-	-	-
6730	Social Security	General Inflation	-	-	-	-	-
6740	Deferred Comp	General Inflation	705	720	740	760	780
	Other Personnel	General Inflation	-	-	-	-	-
Total Personnel Costs			\$ 2,778,829	\$ 2,982,811	\$ 3,086,475	\$ 3,196,554	\$ 3,300,861

Maintenance & Equipment

7111	Other Mach & Equip	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
7115	Vehicle Rentals	General Inflation	-	-	-	-	-
7119	Misc Rentals	General Inflation	6,500	6,660	6,830	7,000	7,180
7120	Misc Leases	General Inflation	-	-	-	-	-
7210	Office Equip Maint	General Inflation	-	-	-	-	-
7211	Communication Equip Maintenance	General Inflation	1,000	1,030	1,060	1,090	1,120
7215	Software Maintenance	General Inflation	46,650	47,820	49,020	50,250	51,510
7216	Computer Maintenance	General Inflation	-	-	-	-	-
7220	Vehicle Maintenance	General Inflation	15,000	15,380	15,760	16,150	16,550
7221	Wash and Wax	General Inflation	4,500	4,610	4,730	4,850	4,970
7222	Other Equip Maint	General Inflation	-	-	-	-	-
7226	Pipeline Maintenance	General Inflation	145,000	148,630	152,350	156,160	160,060
7230	Routine Building Maintenance	General Inflation	-	-	-	-	-
7241	Asphalt Repairs	General Inflation	10,000	10,250	10,510	10,770	11,040
7249	Maintenance, Repair and Rehab	General Inflation	3,000	3,080	3,160	3,240	3,320
7400	Audit	General Inflation	-	-	-	-	-
7410	Legal	General Inflation	-	-	-	-	-
7435	Administrative	General Inflation	-	-	-	-	-
7490	Misc Professional Services	General Inflation	287,100	294,280	301,640	309,180	316,910
7500	Encina Services	Gnrl Infltn + Cstmr Dmnd Grwth	4,665,000	4,795,430	4,942,510	5,074,310	5,235,890
7500	Encina Services (Pension Payoff)	No Annual Increase	-	(266,721)	(273,876)	(281,750)	(289,850)
7550	Miscellaneous Outside Services	General Inflation	293,500	300,840	308,360	316,070	323,970
7551	Bank Services	General Inflation	31,800	32,600	33,420	34,260	35,120
7553	Comm Arts Support	General Inflation	-	-	-	-	-
7554	Regulatory/Permitting Fees	General Inflation	45,000	46,130	47,280	48,460	49,670
7556	Misc Services	General Inflation	-	-	-	-	-
7558	Laundry and Uniform Mainteance	General Inflation	5,000	5,130	5,260	5,390	5,520
7559	Electrical/SCADA Services	General Inflation	15,600	15,990	16,390	16,800	17,220
7560	Water Sampling Services	General Inflation	-	-	-	-	-
7562	FOG Inspection Services	General Inflation	61,000	62,530	64,090	65,690	67,330
7563	Smartcover WIFI/Alarm Services	General Inflation	50,000	51,250	52,530	53,840	55,190
7564	Landscaping Services	General Inflation	60,000	61,500	63,040	64,620	66,240
7710	Ads and Publishing	General Inflation	2,000	2,050	2,100	2,150	2,200
7711	Dues and Subscriptions	General Inflation	10,500	10,760	11,030	11,310	11,590
7712	Books and Publications	General Inflation	500	510	520	530	540
7713	Audio Visual Materials	General Inflation	-	-	-	-	-
7715	Printing	General Inflation	7,500	7,690	7,880	8,080	8,280
7720	Postage	General Inflation	3,500	3,590	3,680	3,770	3,860
7725	Office Supplies	General Inflation	5,000	5,130	5,260	5,390	5,520
7726	Office Furniture & Equipment	General Inflation	5,000	5,130	5,260	5,390	5,520
7730	Computer Software	General Inflation	10,000	10,250	10,510	10,770	11,040
7731	Misc. Computer Hardware	General Inflation	3,000	3,080	3,160	3,240	3,320
7735	Promo Materials	General Inflation	5,000	5,130	5,260	5,390	5,520
7745	Food Expense	General Inflation	-	-	-	-	-
7750	Heat and Light	Utilities Inflation	285,000	292,130	299,430	306,920	314,590

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
7751	Telephone & Communications	Utilities Inflation	12,000	12,300	12,610	12,930	13,250
7752	Waste Disposal Services	Utilities Inflation	10,000	10,250	10,510	10,770	11,040
7753	Water	Utilities Inflation	36,000	36,900	37,820	38,770	39,740
7801	Building Maintenance	General Inflation	-	-	-	-	-
7810	Electrical Supplies	General Inflation	500	510	520	530	540
7811	Janitorial Supplies	General Inflation	300	310	320	330	340
7820	Parts-Vehicles	General Inflation	500	510	520	530	540
7821	Parts-Equip	General Inflation	169,000	173,230	177,560	182,000	186,550
7830	Rock and Mineral Products	General Inflation	4,000	4,100	4,200	4,310	4,420
7831	Asphalt	General Inflation	500	510	520	530	540
7850	Small Tools	General Inflation	1,500	1,540	1,580	1,620	1,660
7851	Safety Equipment	General Inflation	21,300	21,830	22,380	22,940	23,510
7852	Uniforms and Accessories	General Inflation	5,000	5,130	5,260	5,390	5,520
7853	Meters/Fittings	General Inflation	-	-	-	-	-
7857	Personal Protective Equipment	General Inflation	-	-	-	-	-
7880	Gasoline and Oil	Utilities Inflation	2,000	2,050	2,100	2,150	2,200
7883	Chemicals	Chemicals Inflation	72,000	73,800	75,650	77,540	79,480
7886	Training Supplies	General Inflation	-	-	-	-	-
7896	Medical Supplies - Disposable	General Inflation	-	-	-	-	-
7899	Misc Supplies	General Inflation	24,400	25,010	25,640	26,280	26,940
8110	Employee Training	General Inflation	3,000	3,080	3,160	3,240	3,320
8120	Tuition Reimbursement	General Inflation	-	-	-	-	-
8130	Training/Training Related Travel	General Inflation	3,000	3,080	3,160	3,240	3,320
8500	Depreciation	Depreciation Funding	5,300,000	5,363,070	5,425,820	5,488,760	5,551,880
<i>Note: Depreciation transfer for FYE 2023 to FYE 2026 not included in revenue requirement calculations for rate study.</i>							
8520	Conference Travel	General Inflation	500	510	520	530	540
8522	Misc. Meals/Miles	General Inflation	6,000	6,150	6,300	6,460	6,620
8530	Bad Debt Exp - Other Inv/Bills	General Inflation	40,600	41,620	42,660	43,730	44,820
8532	Disposal of Assets	General Inflation	-	-	-	-	-
8534	Reg Over/Short	General Inflation	-	-	-	-	-
8542	NED Rental Assistance Payments	No Annual Increase	-	-	-	-	-
8544	Lateral Assistance Program	No Annual Increase	25,000	25,000	25,000	25,000	25,000
8610	Settlements	General Inflation	-	-	-	-	-
8700	Contingencies	No Annual Increase	-	-	-	-	-
8809	Vehicle Direct Charges	General Inflation	18,628	19,090	19,570	20,060	20,560
8810	Vehicle Maintenance (2)	General Inflation	92,440	94,750	97,120	99,550	102,040
8811	Vehicle Replacement	General Inflation	250,342	256,600	263,020	269,600	276,340
8830	General Liab	General Inflation	98,220	100,680	103,200	105,780	108,420
8860	Information Technologies	General Inflation	231,260	237,040	242,970	249,040	255,270
8890	Misc Interdepartmental Charges	General Inflation	768,005	787,210	806,890	827,060	847,740
8891	Mis Chg Back	General Inflation	-	-	-	-	-
8892	Utility Billing Chargeback	General Inflation	-	-	-	-	-
8910	Fiscal Agent Fees	General Inflation	-	-	-	-	-
8911	Arbitrage Costs	General Inflation	-	-	-	-	-
8920	Principal	[Calculated]	-	114,535	116,826	119,162	121,545
8921	Interest Expense	[Calculated]	-	92,929	90,639	88,302	85,919
8922	Int Exp-Capitalized Interest	One Time Expense	-	-	-	-	-
	Other - Heat & Light	No Annual Increase	-	-	-	-	-
	Other - Parts & Equipment	No Annual Increase	-	-	-	-	-
	Other - Smart Covers	No Annual Increase	-	-	-	-	-
	Add'l Maintenance & Equipment	General Inflation	-	-	-	-	-
	Other Maintenance & Equipment	[Calculated Below]	(1,081,941)	(1,103,580)	(1,125,651)	(1,148,164)	(1,171,128)
Total Maintenance & Equipment Costs			\$ 12,196,704	\$ 12,391,613	\$ 12,656,547	\$ 12,907,290	\$ 13,189,417

CODE	LINE ITEM	ESCALATOR	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Capital Outlay							
9005	Capital Outlay < \$10k - New	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
9006	Capital Outlay < \$10k - Repl	General Inflation	-	-	-	-	-
9010	Cap Outlay - Vehicles	General Inflation	-	-	-	-	-
9020	Computer Equip > \$10k - Repl	General Inflation	-	-	-	-	-
9021	Office Equipment	General Inflation	-	-	-	-	-
9022	Other Equipment	General Inflation	-	-	-	-	-
9030	Office Furniture	General Inflation	-	-	-	-	-
9050	Capitalized Assets	General Inflation	-	-	-	-	-
	Other Capital Outlay	General Inflation	-	-	-	-	-
Total Capital Outlay Costs			\$ -	\$ -	\$ -	\$ -	\$ -
Other Financing Uses							
9999	Additional Transfer to Capital Fund	One Time Expense	\$ -	\$ -	\$ -	\$ -	\$ -
	Transfer Out - Debt Service	General Inflation	-	-	-	-	-
Total Other Financing Uses Costs			\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL EXPENDITURES			\$ 14,975,533	\$ 15,374,425	\$ 15,743,022	\$ 16,103,844	\$ 16,490,278
TOTAL W/O DEPR & TRANSFER TO CAPITAL			\$ 9,675,533	\$ 10,011,355	\$ 10,317,202	\$ 10,615,084	\$ 10,938,398
RATE REVENUES WITHOUT INCREASES							
	Commodity Usage	Customer Demand Growth	\$ 14,007,136	\$ 14,048,576	\$ 14,128,254	\$ 14,151,796	\$ 14,248,623
	Sewer Pre-Treat	Customer Demand Growth	\$ 19,614	\$ 19,672	\$ 19,783	\$ 19,816	\$ 19,952
	Sewer Laterals	Customer Demand Growth	\$ -	\$ -	\$ -	\$ -	\$ -
	Other Charges for Services	General Inflation	\$ -	\$ -	\$ -	\$ -	\$ -
			\$ 14,026,750	\$ 14,068,248	\$ 14,148,037	\$ 14,171,613	\$ 14,268,575

Appendix C

CAPITAL IMPROVEMENT PLAN

SEWER REPLACEMENT PROJECTS

FYE 2022

FYE 2023

FYE 2024

FYE 2025

FYE 2026

Include	Project ID	Project Title	Total Budget					
✓	55451	Agua Hedionda Lift Station Biological Monitoring and Maintenance	\$ 675,000	\$ 225,000				
✓	55371	Buena Interceptor Sewer Access Road Improvements	2,399,296	100,000	100,000	949,296		
✓	55011	Buena Interceptor Sewer Improvements	7,704,307	-	200,000	800,000	900,000	900,000
✓	55441	Buena Interceptor Sewer Realignment - East Segment	3,040,000	-		408,646	1,013,000	1,013,000
✓	55521	Cannon Road Lift Station Improvements	1,280,000	300,000	530,000			
✓	58011	Encina Capital Projects	176,218,362	11,786,234	7,132,000	7,737,000	8,487,000	8,240,000
✓	55261	Foxes Landing Lift Station Wetwell and Pump Replacement	6,916,834	473,534				
✓	55471	North Batiquitos Access Road Improvement	640,000	50,000		200,000	90,000	
✓	55361	North Batiquitos Lift Station Forcemain Rehabilitation	1,711,743	300,000		545,897		
✓	55201	Odor and Corrosion Prevention Assessment	881,846	280,923				
✓	35723	Orion Center	-	-	3,902,727			
✓	55421	SCADA Improvements	5,764,881	100,000	3,000,000	175,165	380,734	
✓	55131	Sewer Condition Assessment	3,535,992	250,000			100,000	100,000
✓	38401	Sewer Lift Station Repairs and Upgrades	7,937,084	1,418,218	150,000	150,000	150,000	150,000
✓	55481	Sewer Line Capacity Improvements	3,473,000	200,000	1,000,000	1,873,000		
✓	55031	Sewer System Rehabilitation and Replacement	43,065,897	1,610,637	1,200,000	1,850,000	1,900,000	1,000,000
✓	60544	Terramar area coastal improvements	-	-				
✓	55491	Vallecitos Interceptor Sewer Cleaning and CCTV	750,000	250,000				
✓	40153	Village/Barrio traffic circles	-	159,452				
✓	55501	Villas Sewer Lift Station Replacement	2,052,614	934,675				
✓	55511	Vista Carlsbad Interceptor - Rehabilitation (VC1 and VC2)	2,217,946	140,946	1,795,000			
✓		Encina Supplemental Invoice	600,000	-				
✓		Project Adjustments from Dashboard	-	-	-	-	-	-
TOTAL SEWER REPLACEMENT PROJECTS			\$ 270,864,803	\$ 18,579,620	\$ 19,009,727	\$ 14,689,004	\$ 13,020,734	\$ 11,403,000

SUMMARY OF SEWER REPLACEMENT PROJECTS

	UNESCALATED	ESCALATED
5-YEAR CIP (2022-2026)		
R&R	\$ 76,702,085	\$ 81,511,441
Expansion	-	-
TOTAL:	\$ 76,702,085	\$ 81,511,441
10-YEAR CIP (2022-2031)		
R&R	\$ 134,874,085	\$ 155,532,599
Expansion	-	-
TOTAL:	\$ 134,874,085	\$ 155,532,599
TOTAL CIP (2022-2035)		
R&R	\$ 179,074,085	\$ 221,231,404
Expansion	-	-
TOTAL:	\$ 179,074,085	\$ 221,231,404

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
UNESCALATED					
R&R	\$ 18,579,620	\$ 19,009,727	\$ 14,689,004	\$ 13,020,734	\$ 11,403,000
Expansion	-	-	-	-	-
Total	\$ 18,579,620	\$ 19,009,727	\$ 14,689,004	\$ 13,020,734	\$ 11,403,000
ESCALATED					
R&R	\$ 18,579,620	\$ 19,675,067	\$ 15,735,228	\$ 14,436,321	\$ 13,085,205
Expansion	-	-	-	-	-
Total	\$ 18,579,620	\$ 19,675,067	\$ 15,735,228	\$ 14,436,321	\$ 13,085,205

SEWER CONNECTION PROJECTS

FYE 2022

FYE 2023

FYE 2024

FYE 2025

FYE 2026

Include	Project ID	Project Title	Total Budget						
✓	55012	Buena Interceptor Sewer Improvements	\$ 700,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
✓	55531	El Fuerte Lift Station Pump Addition	960,000	\$ -		360,000		600,000	
✓	55391	Faraday and El Camino Real Sewer Replacement - Orion to Palomar A	1,620,000	\$ 140,000	1,200,000				
✓	55401	Las Palmas Trunk Sewer	4,019,000	\$ -	100,000	200,000		256,000	2,907,000
✓		Loan Repay - Sewer Conn to Sewer Repl	3,760,000	\$ -					
✓	55461	Sewer Modeling	624,077	\$ 55,089	50,000	50,000		50,000	50,000
✓	55041	Sewer Monitoring Program (Capacity)	1,392,000	\$ -	70,000	70,000		70,000	70,000
✓	34921	Vista Carlsbad Interceptor - Agua Hedionda LS and Forcemain (VC12-1)	33,828,153	\$ 1,051,426					
✓	55351	Vista Carlsbad Interceptor - Buena Vista Lift Station Improvements	5,504,530	\$ 79,265		200,000		800,000	
✓	38861	Vista Carlsbad Interceptor - Lagoon Bridge Replacement (VC11B)	9,430,772	\$ (53,671)					
✓	39501	Vista Carlsbad Interceptor - Reach VC3	3,286,000	\$ -	100,000	497,000		2,092,000	
✓	39491	Vista Carlsbad Interceptor - Reach VC14 To VC15	21,749,134	\$ -	146,196				
✓		Project Adjustments From Dashboard	-	-	-	-	-	-	-
TOTAL SEWER CONNECTION PROJECTS			\$ 86,873,667	\$ 1,282,109	\$ 1,676,196	\$ 1,387,000	\$ 3,878,000	\$ 3,037,000	

SUMMARY OF SEWER CONNECTION PROJECTS

	UNESCALATED	ESCALATED
5-YEAR CIP (2022-2026)		
R&R	\$ -	\$ -
Expansion	11,260,305	12,287,396
TOTAL:	\$ 11,260,305	\$ 12,287,396
10-YEAR CIP (2022-2031)		
R&R	\$ -	\$ -
Expansion	14,810,305	16,809,334
TOTAL:	\$ 14,810,305	\$ 16,809,334
TOTAL CIP (2022-2035)		
R&R	\$ -	\$ -
Expansion	18,730,305	22,636,016
TOTAL:	\$ 18,730,305	\$ 22,636,016

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
UNESCALATED					
R&R	\$ -	\$ -	\$ -	\$ -	\$ -
Expansion	1,282,109	1,676,196	1,387,000	3,878,000	3,037,000
Total	\$ 1,282,109	\$ 1,676,196	\$ 1,387,000	\$ 3,878,000	\$ 3,037,000
ESCALATED					
R&R	\$ -	\$ -	\$ -	\$ -	\$ -
Expansion	1,282,109	1,734,863	1,485,789	4,299,608	3,485,027
Total	\$ 1,282,109	\$ 1,734,863	\$ 1,485,789	\$ 4,299,608	\$ 3,485,027

CIP TOTALS	UNESCALATED	ESCALATED	COSTS (FYE 21 -35)	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
5-YEAR CIP (2022-2026)			UNESCALATED					
R&R	\$ 76,702,085	\$ 81,511,441	R&R	\$ 18,579,620	\$ 19,009,727	\$ 14,689,004	\$ 13,020,734	\$ 11,403,000
Expansion	11,260,305	12,287,396	Expansion	1,282,109	1,676,196	1,387,000	3,878,000	3,037,000
TOTAL:	\$ 87,962,390	\$ 93,798,837	Total	\$ 19,861,729	\$ 20,685,923	\$ 16,076,004	\$ 16,898,734	\$ 14,440,000
10-YEAR CIP (2022-2031)			ESCALATED					
R&R	\$ 134,874,085	\$ 155,532,599	R&R	\$ 18,579,620	\$ 19,675,067	\$ 15,735,228	\$ 14,436,321	\$ 13,085,205
Expansion	14,810,305	16,809,334	Expansion	1,282,109	1,734,863	1,485,789	4,299,608	3,485,027
TOTAL:	\$ 149,684,390	\$ 172,341,934	Total	\$ 19,861,729	\$ 21,409,930	\$ 17,221,017	\$ 18,735,928	\$ 16,570,232

Appendix D

REVENUE REQUIREMENT ANALYSIS – OPTION 1



CITY OF CARLSBAD
Wastewater Financial Model
Revenue Requirement

2022 2023 2024 2025 2026

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
CASH FLOW TESTS					
REVENUES					
Charges for Services	\$ 14,026,750	\$ 16,881,900	\$ 20,373,170	\$ 24,488,540	\$ 25,642,330
Fines and Forfeitures	30,399	30,490	30,660	30,710	30,920
Income from Property & Investments	75,000	90,360	98,440	110,280	113,480
Interdepartmental	15,931	16,330	16,740	17,160	17,590
Other Revenues	68,672	70,390	72,150	73,960	75,810
TOTAL REVENUES	\$ 14,216,752	\$ 17,089,470	\$ 20,591,160	\$ 24,720,650	\$ 25,880,130
EXPENDITURES					
Ongoing Operating Expenses - Without Depreciation					
Personnel	\$ 2,778,829	\$ 2,982,811	\$ 3,086,475	\$ 3,196,554	\$ 3,300,861
Encina Operations	4,665,000	4,795,430	4,942,510	5,074,310	5,235,890
Maintenance & Equipment	3,313,645	2,921,765	2,998,940	3,077,456	3,157,846
Capital Outlay	-	-	-	-	-
Transfer Out - Debt Service	-	-	-	-	-
Other Operating Expenses					
One-time Funding (<i>Budget Analysis Amount</i>)	(1,081,941)	(1,103,580)	(1,125,651)	(1,148,164)	(1,171,128)
Rate Funded Capital	-	-	4,643,925	10,569,362	12,317,273
Debt Service	-	207,464	207,464	207,464	207,464
Total Operating Expenditures	\$ 9,675,533	\$ 9,803,890	\$ 14,753,663	\$ 20,976,982	\$ 23,048,207
Policy Expenditures					
Replacement Funding - Depreciation	\$ 5,300,000	\$ -	\$ -	\$ -	\$ -
Additional Transfer to Capital Fund	-	-	-	-	-
Additions to Meet Minimum Fund Balances	-	-	-	-	-
Total Policy Expenditures	\$ 5,300,000	\$ -	\$ -	\$ -	\$ -
POLICY OVERRIDES (input in Dashboard)					
Replacement Funding	No Override	\$ -	\$ -	\$ -	\$ -
Additional Transfer to Capital Fund	\$ -	\$ -	\$ -	\$ -	\$ -
Additions to Meet Minimum Fund Balances (*)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL EXPENDITURES	\$ 14,975,533	\$ 9,803,890	\$ 14,753,663	\$ 20,976,982	\$ 23,048,207
CASH FLOW SURPLUS (DEFICIT)	\$ (758,781)	\$ 7,285,580	\$ 5,837,497	\$ 3,743,668	\$ 2,831,923

FYE 2022

FYE 2023

FYE 2024

FYE 2025

FYE 2026

DEBT COVERAGE TEST

1.25 x Bond Coverage

REVENUES

Operating Revenues	\$	14,216,752	\$	17,089,470	\$	20,591,160	\$	24,720,650	\$	25,880,130
Connection Fee Revenues Allowed										

TOTAL REVENUES	\$	14,216,752	\$	17,089,470	\$	20,591,160	\$	24,720,650	\$	25,880,130
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EXPENDITURES

Personnel	\$	2,778,829	\$	2,982,811	\$	3,086,475	\$	3,196,554	\$	3,300,861
Encina Operations		4,665,000		4,795,430		4,942,510		5,074,310		5,235,890
Maintenance & Equipment		3,313,645		2,921,765		2,998,940		3,077,456		3,157,846
Debt Service		-		207,464		207,464		207,464		207,464
One-time Funding (Budget Analysis Amount)		(1,081,941)		(1,103,580)		(1,125,651)		(1,148,164)		(1,171,128)
Coverage		-		51,866		51,866		51,866		51,866

TOTAL EXPENDITURES	\$	9,675,533	\$	9,855,756	\$	10,161,604	\$	10,459,486	\$	10,782,799
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BOND COVERAGE SURPLUS (DEFICIT)	\$	4,541,219	\$	7,233,714	\$	10,429,556	\$	14,261,164	\$	15,097,331
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FYE 2022

FYE 2023

FYE 2024

FYE 2025

FYE 2026

REVENUE REQUIREMENT

Revenue Requirement	\$ (758,781)	\$ 7,233,714	\$ 5,837,497	\$ 3,743,668	\$ 2,831,923
	<i>Cash Flow Driven</i>	<i>Surplus</i>	<i>Surplus</i>	<i>Surplus</i>	<i>Surplus</i>
Month of implementation	March	January	January	January	January
Calculated Increase (%)	16.23%	0.00%	0.00%	0.00%	0.00%
Rate Increase Override (INPUT in Dashboard)	20.00%	20.00%	20.00%	4.00%	4.00%
Rate Increase (%)	20.00%	20.00%	20.00%	4.00%	4.00%
<i>Cumulative Rate Increase (%)</i>	<i>27.4%</i>	<i>55.1%</i>	<i>86.0%</i>	<i>93.5%</i>	<i>101.2%</i>
SFR Rate	\$35.43	\$43.12	\$51.74	\$53.81	\$55.96

CASH FLOW

Revenues Before Rate Increase	\$ 14,216,752	\$ 17,089,470	\$ 20,591,160	\$ 24,720,650	\$ 25,880,130
Revenues From Rate Increase	2,805,350	3,376,380	4,074,634	979,542	1,025,693
Less: Rate Increase Delay	(1,870,233)	(1,688,190)	(2,037,317)	(489,771)	(512,847)
Less: Expenditures	(14,975,533)	(9,803,890)	(14,753,663)	(20,976,982)	(23,048,207)
Cash Flow	\$ 176,336	\$ 8,973,770	\$ 7,874,814	\$ 4,233,439	\$ 3,344,770
RATE REVENUE REQUIREMENT	\$ 16,832,100	\$ 20,258,280	\$ 24,447,804	\$ 25,468,082	\$ 26,668,023
Total Ending Balance	\$ 24,069,814	\$ 16,546,415	\$ 12,154,816	\$ 8,644,609	\$ 7,884,098
	<i>908 Days</i>	<i>629 Days</i>	<i>448 Days</i>	<i>309 Days</i>	<i>273 Days</i>
Operating Fund					
Beginning Balance	\$ 8,111,281	\$ 4,302,990	\$ 4,280,002	\$ 4,411,170	\$ 4,539,328
Cash Flow	176,336	8,973,770	7,874,814	4,233,439	3,344,770
Transfers from Operating to Capital Fund	(3,984,627)	(8,996,757)	(7,743,647)	(4,105,281)	(3,206,259)
Ending Operating Fund Balance	\$ 4,302,990	\$ 4,280,002	\$ 4,411,170	\$ 4,539,328	\$ 4,677,839

Appendix E

REVENUE REQUIREMENT ANALYSIS – OPTION 2



CITY OF CARLSBAD
Wastewater Financial Model
Revenue Requirement

2022 2023 2024 2025 2026

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
CASH FLOW TESTS					
REVENUES					
Charges for Services	\$ 14,026,750	\$ 21,102,370	\$ 22,070,930	\$ 22,992,020	\$ 24,075,300
Fines and Forfeitures	30,399	30,490	30,660	30,710	30,920
Income from Property & Investments	75,000	90,360	98,440	110,280	113,480
Interdepartmental	15,931	16,330	16,740	17,160	17,590
Other Revenues	68,672	70,390	72,150	73,960	75,810
TOTAL REVENUES	\$ 14,216,752	\$ 21,309,940	\$ 22,288,920	\$ 23,224,130	\$ 24,313,100
EXPENDITURES					
Ongoing Operating Expenses - Without Depreciation					
Personnel	\$ 2,778,829	\$ 2,982,811	\$ 3,086,475	\$ 3,196,554	\$ 3,300,861
Encina Operations	4,665,000	4,795,430	4,942,510	5,074,310	5,235,890
Maintenance & Equipment	3,313,645	2,921,765	2,998,940	3,077,456	3,157,846
Capital Outlay	-	-	-	-	-
Transfer Out - Debt Service	-	-	-	-	-
Other Operating Expenses					
One-time Funding (<i>Budget Analysis Amount</i>)	(1,081,941)	(1,103,580)	(1,125,651)	(1,148,164)	(1,171,128)
Rate Funded Capital	-	-	221,920	5,988,947	9,225,134
Debt Service	-	207,464	207,464	207,464	207,464
Total Operating Expenditures	\$ 9,675,533	\$ 9,803,890	\$ 10,331,657	\$ 16,396,567	\$ 19,956,067
Policy Expenditures					
Replacement Funding - Depreciation	\$ 5,300,000	\$ -	\$ -	\$ -	\$ -
Additional Transfer to Capital Fund	-	-	-	-	-
Additions to Meet Minimum Fund Balances	-	-	-	-	-
Total Policy Expenditures	\$ 5,300,000	\$ -	\$ -	\$ -	\$ -
POLICY OVERRIDES (input in Dashboard)					
Replacement Funding	No Override	\$ -	\$ -	\$ -	\$ -
Additional Transfer to Capital Fund	\$ -	\$ -	\$ -	\$ -	\$ -
Additions to Meet Minimum Fund Balances (*)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL EXPENDITURES	\$ 14,975,533	\$ 9,803,890	\$ 10,331,657	\$ 16,396,567	\$ 19,956,067
CASH FLOW SURPLUS (DEFICIT)	\$ (758,781)	\$ 11,506,050	\$ 11,957,263	\$ 6,827,563	\$ 4,357,033

FYE 2022

FYE 2023

FYE 2024

FYE 2025

FYE 2026

DEBT COVERAGE TEST

1.25 x Bond Coverage

REVENUES

Operating Revenues	\$	14,216,752	\$	21,309,940	\$	22,288,920	\$	23,224,130	\$	24,313,100
Connection Fee Revenues Allowed										

TOTAL REVENUES	\$	14,216,752	\$	21,309,940	\$	22,288,920	\$	23,224,130	\$	24,313,100
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EXPENDITURES

Personnel	\$	2,778,829	\$	2,982,811	\$	3,086,475	\$	3,196,554	\$	3,300,861
Encina Operations		4,665,000		4,795,430		4,942,510		5,074,310		5,235,890
Maintenance & Equipment		3,313,645		2,921,765		2,998,940		3,077,456		3,157,846
Debt Service		-		207,464		207,464		207,464		207,464
One-time Funding (Budget Analysis Amount)		(1,081,941)		(1,103,580)		(1,125,651)		(1,148,164)		(1,171,128)
Coverage		-		51,866		51,866		51,866		51,866

TOTAL EXPENDITURES	\$	9,675,533	\$	9,855,756	\$	10,161,604	\$	10,459,486	\$	10,782,799
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BOND COVERAGE SURPLUS (DEFICIT)	\$	4,541,219	\$	11,454,184	\$	12,127,316	\$	12,764,644	\$	13,530,301
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FYE 2022

FYE 2023

FYE 2024

FYE 2025

FYE 2026

REVENUE REQUIREMENT

Revenue Requirement	\$ (758,781)	\$ 11,454,184	\$ 11,957,263	\$ 6,827,563	\$ 4,357,033
	<i>Cash Flow Driven</i>	<i>Surplus</i>	<i>Surplus</i>	<i>Surplus</i>	<i>Surplus</i>
Month of implementation	March	January	January	January	January
Calculated Increase (%)	16.23%	0.00%	0.00%	0.00%	0.00%
Rate Increase Override (INPUT in Dashboard)	50.00%	4.00%	4.00%	4.00%	4.00%
Rate Increase (%)	50.00%	4.00%	4.00%	4.00%	4.00%
<i>Cumulative Rate Increase (%)</i>	<i>59.2%</i>	<i>68.0%</i>	<i>74.7%</i>	<i>81.7%</i>	<i>89.0%</i>
SFR Rate	\$44.28	\$46.71	\$48.58	\$50.52	\$52.55

CASH FLOW

Revenues Before Rate Increase	\$ 14,216,752	\$ 21,309,940	\$ 22,288,920	\$ 23,224,130	\$ 24,313,100
Revenues From Rate Increase	7,013,375	844,095	882,837	919,681	963,012
Less: Rate Increase Delay	(4,675,583)	(422,047)	(441,419)	(459,840)	(481,506)
Less: Expenditures	(14,975,533)	(9,803,890)	(10,331,657)	(16,396,567)	(19,956,067)
Cash Flow	\$ 1,579,011	\$ 11,928,097	\$ 12,398,681	\$ 7,287,404	\$ 4,838,539
RATE REVENUE REQUIREMENT	\$ 21,040,125	\$ 21,946,465	\$ 22,953,767	\$ 23,911,701	\$ 25,038,312
Total Ending Balance	\$ 25,472,489	\$ 20,918,146	\$ 16,678,683	\$ 11,698,574	\$ 9,377,867
	<i>961 Days</i>	<i>796 Days</i>	<i>615 Days</i>	<i>419 Days</i>	<i>325 Days</i>
Operating Fund					
Beginning Balance	\$ 8,111,281	\$ 4,302,990	\$ 4,280,002	\$ 4,411,170	\$ 4,539,328
Cash Flow	1,579,011	11,928,097	12,398,681	7,287,404	4,838,539
Transfers from Operating to Capital Fund	(5,387,302)	(11,951,084)	(12,267,514)	(7,159,245)	(4,700,028)
Ending Operating Fund Balance	\$ 4,302,990	\$ 4,280,002	\$ 4,411,170	\$ 4,539,328	\$ 4,677,839

Appendix F

FUNCTIONAL ALLOCATION – OPTION 1

ALLOCATION INDEX	FYE 2022	TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS
Treatment Flow/BOD/TSS		37.8%	35.7%	26.5%	0.0%	0.0%
50 Percent Customer		0.0%	0.0%	0.0%	0.0%	100.0%
Admin		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 4		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 5		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 6		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 7		0.0%	0.0%	0.0%	0.0%	100.0%
Flow Only		100.0%	0.0%	0.0%	0.0%	0.0%
Customer Only		0.0%	0.0%	0.0%	0.0%	100.0%
As Weighted Average		0.0%	0.0%	0.0%	0.0%	100.0%
Collections			5.0%	5.0%	90.0%	0.0%
Staff Allocation		0.0%	2.6%	2.6%	47.7%	47.0%
Vehicles		0.0%	4.4%	4.4%	79.8%	11.3%
Uniforms		0.0%	5.0%	5.0%	90.0%	0.0%
Miscellaneous Professional Services - 7490		0.0%	0.0%	0.0%	0.0%	100.0%
Miscellaneous Outside Services - 7550		0.0%	0.0%	0.0%	0.0%	100.0%
Capital Improvement Plan		20.0%	18.5%	19.9%	41.5%	0.0%
Weighted Average O&M		25.6%	25.8%	19.5%	29.1%	
Weighed Average Revenue Requirements		23.6%	23.2%	19.7%	33.5%	

PLANT IN SERVICE	RCNLD	TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS
IM - IMPROVEMENTS	\$ 7,187,260				100.0%	0%
JV - JOINT VENTURE	52,584,214	37.8%	35.7%	26.5%		0%
LD - LAND	2,629,102					100%
ME - MACHINERY & EQUIPMENT	533,994					100%
PP - PIPES & PUMPING	68,948,492		5.0%	5.0%	90.0%	0%
Plant-In-Service Sub Total	\$ 131,883,062	\$ 19,884,649	\$ 22,213,611	\$ 17,380,804	\$ 69,240,902	\$ 3,163,096
Reallocation of "As All Others"		\$ 488,635	\$ 545,865	\$ 427,107	\$ 1,701,489	\$ (3,163,096)
Total Allocation	\$ 131,883,062	\$ 20,373,284	\$ 22,759,476	\$ 17,807,911	\$ 70,942,391	\$ -
<i>Percentage Allocation</i>	<i>100%</i>	<i>15.4%</i>	<i>17.3%</i>	<i>13.5%</i>	<i>53.8%</i>	<i>0.0%</i>

EXPENDITURES

Personnel								
Reg Salaries	\$	1,784,827	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Incentive Pay		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Hazard Pay		31,602	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
IOD Worker's Comp		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Overtime Salaries		60,000	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Standby Pay		26,000	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Parttimes Salaries		18,776	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Intern Salaries		7,429	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Temporary Help		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Health Insurance		318,780	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Life Insurance		1,270	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
AD&D - City Paid		635	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Vision Insurance		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Medicare		27,859	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Cell Phone Reimbursement		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Auto Allowance		1,138	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Earned Leave Accrual		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Healthy Emp Awards		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Final Vacation Pay		17,000	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Final Sick Leave Pay		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Disability		16,146	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Unemployment		9,129	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Worker's Compensation		32,250	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
PERS		220,696	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
PERS Unfunded Liab Exp		204,586	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
PERS (GASB 68 CONTRA ACCOUNT)		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Operation Expense		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Social Security		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Deferred Comp		705	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Other Personnel		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Maintenance & Equipment								
Other Mach & Equip	\$	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Vehicle Rentals		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Rentals		6,500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Misc Leases		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Office Equip Maint		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Communication Equip Maintenance		1,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Software Maintenance		46,650	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Computer Maintenance		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Vehicle Maintenance		15,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Wash and Wax		4,500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Other Equip Maint		-	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Pipeline Maintenance		145,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Routine Building Maintenance		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Asphalt Repairs		10,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Maintenance, Repair and Rehab		3,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Audit		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Legal		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Administrative		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Professional Services		287,100	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Encina Services		4,665,000	Treatment Flow/BOD/TSS	37.8%	35.7%	26.5%	0.0%	0.0%
Encina Services (Pension Payoff)		-	Treatment Flow/BOD/TSS	37.8%	35.7%	26.5%	0.0%	0.0%
Miscellaneous Outside Services		293,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Bank Services		31,800	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Comm Arts Support		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Regulatory/Permitting Fees		45,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Misc Services		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Laundry and Uniform Maintenance		5,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Electrical/SCADA Services		15,600	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Water Sampling Services		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
FOG Inspection Services		61,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Smartcover WIFI/Alarm Services		50,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Landscaping Services		60,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Ads and Publishing		2,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Dues and Subscriptions		10,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Books and Publications		500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Audio Visual Materials		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Printing		7,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Postage		3,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Office Supplies		5,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Office Furniture & Equipment		5,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Computer Software		10,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc. Computer Hardware		3,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Promo Materials		5,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Food Expense		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Heat and Light		285,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Telephone & Communications		12,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Waste Disposal Services		10,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Water		36,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Building Maintenance		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Electrical Supplies		500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Janitorial Supplies		300	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%

ALLOCATION INDEX	FYE 2022	TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS	
Parts-Vehicles	500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Parts-Equip	169,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Rock and Mineral Products	4,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Asphalt	500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Small Tools	1,500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Safety Equipment	21,300	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Uniforms and Accessories	5,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Meters/Fittings	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Personal Protective Equipment	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Gasoline and Oil	2,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Chemicals	72,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Training Supplies	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Medical Supplies - Disposable	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Supplies	24,400	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Employee Training	3,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Tuition Reimbursement	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Training/Training Related Travel	3,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Depreciation	Included Below	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Conference Travel	500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc. Meals/Miles	6,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Bad Debt Exp - Other Inv/Bills	40,600	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Disposal of Assets	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Reg Over/Short	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
NED Rental Assistance Payments	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Lateral Assistance Program	25,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Settlements	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Contingencies	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Vehicle Direct Charges	18,628	Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%
Vehicle Maintenance (2)	92,440	Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%
Vehicle Replacement	250,342	Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%
General Liab	98,220	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Information Technologies	231,260	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Interdepartmental Charges	768,005	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Mis Chg Back	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Utility Billing Chargeback	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Fiscal Agent Fees	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Arbitrage Costs	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Principal	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Interest Expense	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Int Exp-Capitalized Interest	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other - Heat & Light	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other - Parts & Equipment	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other - Smart Covers	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Add'l Maintenance & Equipment	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other Maintenance & Equipment	(1,081,941)	[Non-Encina O&M]	0.0%	2.2%	2.2%	40.1%	55.4%
Capital Outlay							
Capital Outlay < \$10k - New	\$ -	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Capital Outlay < \$10k - Repl	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Cap Outlay - Vehicles	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Computer Equip > \$10k - Repl	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Office Equipment	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Other Equipment	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Office Furniture	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Capitalized Assets	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Other Capital Outlay	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Operating Expenditures Sub Total	\$ 9,675,533		\$ 1,764,063	\$ 1,776,485	\$ 1,347,743	\$ 2,009,624	\$ 2,777,618
Reallocation of "As All Others"			\$ 710,344	\$ 715,346	\$ 542,703	\$ 809,225	\$ (2,777,618)
Total Allocation	\$ 9,675,533		\$ 2,474,408	\$ 2,491,831	\$ 1,890,446	\$ 2,818,849	\$ -
<i>Percentage Allocation</i>	<i>100.0%</i>		<i>25.6%</i>	<i>25.8%</i>	<i>19.5%</i>	<i>29.1%</i>	

ALLOCATION INDEX	FYE 2022		TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS
OPERATING EXPENSES (from above)	\$ 9,675,533		25.6%	25.8%	19.5%	29.1%	0.0%
NON-OPERATING EXPENSES							
Replacement Funding - Depreciation (Depreciation)	5,300,000	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Rate Funded Capital	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Debt Service	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Additional Transfer to Capital Fund	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Transfer Out - Debt Service	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Adjustment for Mid Year Increase	1,870,233	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
LESS: Offsetting Revenues							
Over/Under Collection of Revenues (Available for Capital	\$ 176,336	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Fines and Forfeitures	(30,399)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Income from Property & Investments	(75,000)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Interdepartmental	(15,931)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other Revenues	(68,672)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Total Rate Revenues to be Collected	\$ 16,832,100		\$ 3,535,183	\$ 3,472,168	\$ 2,947,271	\$ 5,020,911	\$ 1,856,567
Reallocation of "As All Others"			\$ 438,268	\$ 430,456	\$ 365,383	\$ 622,459	\$ (1,856,567)
Total Allocation	\$ 16,832,100		\$ 3,973,451	\$ 3,902,625	\$ 3,312,654	\$ 5,643,370	\$ -
<i>Percentage Allocation</i>	<i>100%</i>		<i>23.6%</i>	<i>23.2%</i>	<i>19.7%</i>	<i>33.5%</i>	<i>0.0%</i>

Appendix G

FUNCTIONAL ALLOCATION – OPTION 2

ALLOCATION INDEX	FYE 2022	TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS
Treatment Flow/BOD/TSS		37.8%	35.7%	26.5%	0.0%	0.0%
50 Percent Customer		0.0%	0.0%	0.0%	0.0%	100.0%
Admin		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 4		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 5		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 6		0.0%	0.0%	0.0%	0.0%	100.0%
Allocation 7		0.0%	0.0%	0.0%	0.0%	100.0%
Flow Only		100.0%	0.0%	0.0%	0.0%	0.0%
Customer Only		0.0%	0.0%	0.0%	0.0%	100.0%
As Weighted Average		0.0%	0.0%	0.0%	0.0%	100.0%
Collections			5.0%	5.0%	90.0%	0.0%
Staff Allocation		0.0%	2.6%	2.6%	47.7%	47.0%
Vehicles		0.0%	4.4%	4.4%	79.8%	11.3%
Uniforms		0.0%	5.0%	5.0%	90.0%	0.0%
Miscellaneous Professional Services - 7490		0.0%	0.0%	0.0%	0.0%	100.0%
Miscellaneous Outside Services - 7550		0.0%	0.0%	0.0%	0.0%	100.0%
Capital Improvement Plan		20.0%	18.5%	19.9%	41.5%	0.0%
Weighted Average O&M		25.6%	25.8%	19.5%	29.1%	
Weighed Average Revenue Requirements		23.6%	23.2%	19.7%	33.5%	

PLANT IN SERVICE	RCNLD	TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS
IM - IMPROVEMENTS	\$ 7,187,260				100.0%	0%
JV - JOINT VENTURE	52,584,214	37.8%	35.7%	26.5%		0%
LD - LAND	2,629,102					100%
ME - MACHINERY & EQUIPMENT	533,994					100%
PP - PIPES & PUMPING	68,948,492		5.0%	5.0%	90.0%	0%
Plant-In-Service Sub Total	\$ 131,883,062	\$ 19,884,649	\$ 22,213,611	\$ 17,380,804	\$ 69,240,902	\$ 3,163,096
Reallocation of "As All Others"		\$ 488,635	\$ 545,865	\$ 427,107	\$ 1,701,489	\$ (3,163,096)
Total Allocation	\$ 131,883,062	\$ 20,373,284	\$ 22,759,476	\$ 17,807,911	\$ 70,942,391	\$ -
<i>Percentage Allocation</i>	<i>100%</i>	<i>15.4%</i>	<i>17.3%</i>	<i>13.5%</i>	<i>53.8%</i>	<i>0.0%</i>

EXPENDITURES

Personnel								
Reg Salaries	\$	1,784,827	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Incentive Pay		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Hazard Pay		31,602	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
IOD Worker's Comp		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Overtime Salaries		60,000	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Standby Pay		26,000	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Parttimes Salaries		18,776	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Intern Salaries		7,429	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Temporary Help		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Health Insurance		318,780	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Life Insurance		1,270	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
AD&D - City Paid		635	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Vision Insurance		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Medicare		27,859	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Cell Phone Reimbursement		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Auto Allowance		1,138	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Earned Leave Accrual		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Healthy Emp Awards		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Final Vacation Pay		17,000	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Final Sick Leave Pay		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Disability		16,146	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Unemployment		9,129	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Worker's Compensation		32,250	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
PERS		220,696	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
PERS Unfunded Liab Exp		204,586	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
PERS (GASB 68 CONTRA ACCOUNT)		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Operation Expense		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Social Security		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Deferred Comp		705	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Other Personnel		-	Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%
Maintenance & Equipment								
Other Mach & Equip	\$	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Vehicle Rentals		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Rentals		6,500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Misc Leases		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Office Equip Maint		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Communication Equip Maintenance		1,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Software Maintenance		46,650	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Computer Maintenance		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Vehicle Maintenance		15,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Wash and Wax		4,500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Other Equip Maint		-	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Pipeline Maintenance		145,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Routine Building Maintenance		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Asphalt Repairs		10,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Maintenance, Repair and Rehab		3,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Audit		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Legal		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Administrative		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Professional Services		287,100	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Encina Services		4,665,000	Treatment Flow/BOD/TSS	37.8%	35.7%	26.5%	0.0%	0.0%
Encina Services (Pension Payoff)		-	Treatment Flow/BOD/TSS	37.8%	35.7%	26.5%	0.0%	0.0%
Miscellaneous Outside Services		293,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Bank Services		31,800	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Comm Arts Support		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Regulatory/Permitting Fees		45,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Misc Services		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Laundry and Uniform Maintenance		5,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Electrical/SCADA Services		15,600	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Water Sampling Services		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
FOG Inspection Services		61,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Smartcover WIFI/Alarm Services		50,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Landscaping Services		60,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Ads and Publishing		2,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Dues and Subscriptions		10,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Books and Publications		500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Audio Visual Materials		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Printing		7,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Postage		3,500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Office Supplies		5,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Office Furniture & Equipment		5,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Computer Software		10,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc. Computer Hardware		3,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Promo Materials		5,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Food Expense		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Heat and Light		285,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Telephone & Communications		12,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Waste Disposal Services		10,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Water		36,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Building Maintenance		-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Electrical Supplies		500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Janitorial Supplies		300	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%

ALLOCATION INDEX	FYE 2022	TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS	
Parts-Vehicles	500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Parts-Equip	169,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Rock and Mineral Products	4,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Asphalt	500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Small Tools	1,500	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Safety Equipment	21,300	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Uniforms and Accessories	5,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Meters/Fittings	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Personal Protective Equipment	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Gasoline and Oil	2,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Chemicals	72,000	Collections	0.0%	5.0%	5.0%	90.0%	0.0%
Training Supplies	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Medical Supplies - Disposable	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Supplies	24,400	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Employee Training	3,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Tuition Reimbursement	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Training/Training Related Travel	3,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Depreciation	Included Below	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Conference Travel	500	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc. Meals/Miles	6,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Bad Debt Exp - Other Inv/Bills	40,600	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Disposal of Assets	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Reg Over/Short	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
NED Rental Assistance Payments	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Lateral Assistance Program	25,000	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Settlements	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Contingencies	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Vehicle Direct Charges	18,628	Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%
Vehicle Maintenance (2)	92,440	Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%
Vehicle Replacement	250,342	Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%
General Liab	98,220	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Information Technologies	231,260	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Misc Interdepartmental Charges	768,005	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Mis Chg Back	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Utility Billing Chargeback	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Fiscal Agent Fees	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Arbitrage Costs	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Principal	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Interest Expense	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Int Exp-Capitalized Interest	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other - Heat & Light	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other - Parts & Equipment	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other - Smart Covers	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Add'l Maintenance & Equipment	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other Maintenance & Equipment	(1,081,941)	[Non-Encina O&M]	0.0%	2.2%	2.2%	40.1%	55.4%
Capital Outlay							
Capital Outlay < \$10k - New	\$ -	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Capital Outlay < \$10k - Repl	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Cap Outlay - Vehicles	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Computer Equip > \$10k - Repl	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Office Equipment	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Other Equipment	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Office Furniture	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Capitalized Assets	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Other Capital Outlay	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Operating Expenditures Sub Total	\$ 9,675,533		\$ 1,764,063	\$ 1,776,485	\$ 1,347,743	\$ 2,009,624	\$ 2,777,618
Reallocation of "As All Others"			\$ 710,344	\$ 715,346	\$ 542,703	\$ 809,225	\$ (2,777,618)
Total Allocation	\$ 9,675,533		\$ 2,474,408	\$ 2,491,831	\$ 1,890,446	\$ 2,818,849	\$ -
<i>Percentage Allocation</i>	<i>100.0%</i>		<i>25.6%</i>	<i>25.8%</i>	<i>19.5%</i>	<i>29.1%</i>	

ALLOCATION INDEX	FYE 2022	TREATMENT FLOW	BOD	TSS	COLLECTION FLOW	AS ALL OTHERS	
OPERATING EXPENSES (from above)	\$ 9,675,533	25.6%	25.8%	19.5%	29.1%	0.0%	
NON-OPERATING EXPENSES							
Replacement Funding - Depreciation (Depreciation)	5,300,000	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Rate Funded Capital	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Debt Service	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Additional Transfer to Capital Fund	-	Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%
Transfer Out - Debt Service	-	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Adjustment for Mid Year Increase	4,675,583	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
LESS: Offsetting Revenues							
Over/Under Collection of Revenues (Available for Capital	\$ 1,579,011	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Fines and Forfeitures	(30,399)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Income from Property & Investments	(75,000)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Interdepartmental	(15,931)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Other Revenues	(68,672)	As Weighted Average	0.0%	0.0%	0.0%	0.0%	100.0%
Total Rate Revenues to be Collected	\$ 21,040,125		\$ 3,535,183	\$ 3,472,168	\$ 2,947,271	\$ 5,020,911	\$ 6,064,592
Reallocation of "As All Others"			\$ 1,431,631	\$ 1,406,113	\$ 1,193,547	\$ 2,033,302	\$ (6,064,592)
Total Allocation	\$ 21,040,125		\$ 4,966,814	\$ 4,878,281	\$ 4,140,818	\$ 7,054,213	\$ -
<i>Percentage Allocation</i>	<i>100%</i>		<i>23.6%</i>	<i>23.2%</i>	<i>19.7%</i>	<i>33.5%</i>	<i>0.0%</i>

Appendix H

OPTION 2 RATE CALCULATIONS

Cost of Service Analysis Tables for Option 2

The following tables show the results of the cost of service analysis discussed in Section 4 based on Option 2 rate increases. The table numbers below correspond to those in the report body.

Table 12 Option 2 - [Expenditures and Offsetting Revenues \(in millions\)](#)

	FYE 2022
O&M Expenses	\$9.68
Replacement Funding	\$5.30
Adjustment for Mid-Year Increase	\$4.68
Operating Cash Flows	\$1.58
Less: Offsetting Revenues	(\$0.19)
Rate Revenues Required	\$21.04

* Line or column totals may not tie due to rounding

Table 13 Option 2 - [Functional Allocation Factors](#)

Allocation Factor	Treatment Flow	BOD	TSS	Collection Flow	As All Other (Weighted Average)	Total
Treatment Flow/BOD/TSS	37.8%	35.7%	26.5%	0.0%	0.0%	100%
Collections	0.0%	5.0%	5.0%	90.0%	0.0%	100%
Staff Allocation	0.0%	2.6%	2.6%	47.7%	47.0%	100%
Vehicles	0.0%	4.4%	4.4%	79.8%	11.3%	100%
Capital Improvement Plan	20.0%	18.5%	19.9%	41.5%	0.0%	100%
Weighted Average O&M	25.6%	25.8%	19.5%	29.1%	N/A	100%
Weighted Average Total Rate Revenue Requirements	23.6%	23.2%	19.7%	33.5%	N/A	100%

* Line or column totals may not tie due to rounding

No change from Option 1.

Table 14 Option 2 - CIP Functional Allocation

CIP Allocation	Treatment Flow	BOD	TSS	Collection Flow	Ten-Year Total
Encina Projects - Treatment	\$29.04	\$26.84	\$28.93	-	\$84.80
Carlsbad Projects - Collections	-	-	-	\$64.88	\$64.88
Less: Debt Funded Projects	-	-	-	(\$4.60)	(\$4.60)
Allocated Cash Funded CIP Costs	\$29.04	\$26.84	\$28.93	\$60.28	\$145.08
CIP Percentage Allocation	20.0%	18.5%	19.9%	41.5%	100%

* Line or column totals may not tie due to rounding

No change from Option 1.

Table 15 Option 2 - O&M Functional Allocation

O&M Cost Allocation	Treatment Flow	BOD	TSS	Collection Flow	As All Other (Weighted Average)	Total
Personnel	-	\$0.07	\$0.07	\$1.33	\$1.31	\$2.78
Maintenance & Equipment	-	\$0.06	\$0.06	\$1.12	\$2.07	\$3.31
Encina Services	\$1.76	\$1.66	\$1.24	-	-	\$4.67
Capital Outlay	-	-	-	-	-	-
Budget Adjustment	-	(\$0.02)	(\$0.02)	(\$0.43)	(\$0.60)	(\$1.08)
Allocated Costs	\$1.76	\$1.78	\$1.35	\$2.01	\$2.78	\$9.68
Reallocation of "As All Other"	\$0.71	\$0.72	\$0.54	\$0.81	(\$2.78)	-
Total O&M Allocation	\$2.47	\$2.49	\$1.89	\$2.82	-	\$9.68
O&M Percentage Allocation	25.6%	25.8%	19.5%	29.1%		100%

* Line or column totals may not tie due to rounding

No change from Option 1.

Table 16 Option 2 - Revenue Requirements Functional Allocation

Revenue Requirements Allocation	Treatment Flow	BOD	TSS	Collection Flow	As All Other (Weighted Average)	Total
Allocated O&M	\$2.47	\$2.49	\$1.89	\$2.82	-	\$9.68
Replacement Funding	\$1.06	\$0.98	\$1.06	\$2.20	-	\$5.30
Adjustment for Mid-Year Increase	-	-	-	-	\$4.68	\$4.68
Operating Cash Flows	-	-	-	-	\$1.58	\$1.58
Less: Offsetting Revenues	-	-	-	-	(\$0.19)	(\$0.19)
Allocated Costs	\$3.54	\$3.47	\$2.95	\$5.02	\$6.06	\$21.04
Reallocation of "As All Other"	\$1.43	\$1.41	\$1.19	\$2.03	(\$6.06)	-
Total O&M Allocation	\$4.97	\$4.88	\$4.14	\$7.05		\$21.04
O&M Percentage Allocation	23.6%	23.2%	19.7%	33.5%		

* Line or column totals may not tie due to rounding

Rate Design Analysis Tables for Option 2

The following tables show the results of the cost of service analysis discussed in Section 5 based on Option 2 rate increases. The table numbers below correspond to those in the report body.

Table 18 Option 2 - Billed Units by Customer Class for FY 2021/22

Customer Class	Monthly Account	Flow	BOD	TSS
GROUP I - SFR & Minimum Charges	22,724	2,254,505	2,814,688	2,814,688
GROUP I - MFR/Mobile Homes	977	517,586	646,192	646,192
GROUP II - Commercial 2	1,237	341,658	277,969	257,115
GROUP III - Commercial 3	355	359,280	736,371	625,480
GROUP IV - Commercial 4	238	105,086	537,909	446,071
Other (No Accounts)	266	58,907	47,804	36,772
Brewery - B2	8	2,895	22,867	14,645
Brewery - B4	4	3,308	33,246	22,508
GROUP VI - Large Volume (no accounts)	0	0	0	0
Industrial Pretreatment Class III	262	44,386	82,723	132,230
GROUP V - Elementary Schools	17	8,794	7,137	5,490
GROUP V - Junior High Schools	22	5,218	4,234	3,257
GROUP V - High Schools	72	9,657	7,836	6,028
GROUP V - Boarding Schools	3	5,373	4,360	3,354
Total	26,185	3,716,655	5,223,336	5,013,831

* Line or column totals may not tie due to rounding

No change from Option 1.

Table 19 Option 2 - Unit Costs per Billable Constituents

Unit Cost Calculation	Treatment Flow	BOD	TSS	Collection Flow
Allocated Rate Revenue (Millions)	\$4.97	\$4.88	\$4.14	\$7.05
Unit Basis for Rate Design	Estimated Sewer Flows (HCF)	Estimated BOD Discharges (lbs)	Estimated TSS Discharges (lbs)	Estimated Sewer Flows (HCF)
FYE 2022 Billed Units	3,728,855	5,221,887	4,964,153	3,728,855
FYE 2022 Unit Costs	\$1.34	\$0.93	\$0.83	\$1.90
	per HCF	per lb	per lb	per HCF

* Line or column totals may not tie due to rounding

Table 20 Option 2 - Group I Unit Cost per HCF Calculation

Group I Unit Cost per HCF Example	Concentration (mg/l)	Mass Load lb/HCF	Unit Cost \$/lb	Unit Cost \$/HCF Discharged
Item	A	B	C	D
BOD	200	1.25	\$0.93	\$1.17
TSS	200	1.25	\$0.83	\$1.03
Treatment Flow	N/A	N/A	N/A	\$1.34
Collections Flow	N/A	N/A	N/A	\$1.90
Total Unit Cost per HCF	N/A	N/A	N/A	\$5.43
Mass Load, lb per HCF (B) = [Concentration, mg/l (A)] x [3.785 gallons per L] x [748 gallons per HCF] / [453,592 mg per lb]				
Unit Cost, \$/HCF (D) = [Mass Load, lb/HCF (B)] x [Unit Cost, \$/lb (C)]				

* Line or column totals may not tie due to rounding

Table 21 Option 2 - All Classes Unit Cost per HCF Calculation

Customer Class Unit Costs per HCF Discharged	BOD (mg/l)	BOD (\$/HCF)	TSS (mg/l)	TSS (\$/HCF)	Flow (\$/HCF)	Total \$ Per HCF Discharged
GROUP I - SFR & Minimum Charges	200	\$1.17	200	\$1.03	\$3.23	\$5.43
GROUP I - MFR/Mobile Homes	200	\$1.17	200	\$1.03	\$3.23	\$5.43
GROUP II - Commercial 2	130	\$0.76	121	\$0.62	\$3.23	\$4.62
GROUP III - Commercial 3	328	\$1.91	279	\$1.44	\$3.23	\$6.59
GROUP IV - Commercial 4	820	\$4.78	680	\$3.51	\$3.23	\$11.52
Other (No Accounts)	130	\$0.76	100	\$0.52	\$3.23	\$4.51
Brewery - B2	1265	\$7.38	810	\$4.18	\$3.23	\$14.79
Brewery - B4	1610	\$9.39	1090	\$5.62	\$3.23	\$18.24
GROUP VI - Large Volume (no accounts)	80	\$0.47	80	\$0.41	\$3.23	\$4.11
Industrial Pretreatment Class III	299	\$1.74	477	\$2.46	\$3.23	\$7.44
GROUP V - Elementary Schools	130	\$0.76	100	\$0.52	\$3.23	\$4.51
GROUP V - Junior High Schools	130	\$0.76	100	\$0.52	\$3.23	\$4.51
GROUP V - High Schools	130	\$0.76	100	\$0.52	\$3.23	\$4.51
GROUP V - Boarding Schools	130	\$0.76	100	\$0.52	\$3.23	\$4.51

* Line or column totals may not tie due to rounding

Table 22 Option 2 - Group I Monthly Rate Calculation

	Unit Cost \$/HCF Discharged	EDU Flow Factor	Estimated Monthly Discharge (HCF)	Proposed Monthly Rate (per Account) Rounded
GROUP I – Single-Family & Minimum Charges	\$5.43	1.00	8.27	\$44.91
Single Family with ADU	\$5.43	1.50	12.40	\$67.36

Table 23 Option 2 - Rates per HCF of Water Consumption Calculation

Usage Based Rates	Unit Cost \$/HCF Discharged	Return to Sewer Factor	Calculated Monthly Rate (per HCF of Water Used) Rounded
GROUP I – Multi-Family/Mobile Homes	\$5.43	95%	\$5.16
GROUP II - Commercial 2	\$4.62	95%	\$4.39
GROUP III - Commercial 3	\$6.59	95%	\$6.26
GROUP IV - Commercial 4	\$11.52	95%	\$10.95
Other (No Accounts)	\$4.51	95%	\$4.29
Brewery - B2	\$14.79	83%	\$12.20
Brewery - B4	\$18.24	83%	\$15.05
GROUP VI - Large Volume (no accounts)	\$4.11	95%	\$3.91
Industrial Pretreatment Class III	\$7.44	95%	\$7.07

Table 24 Option 2 - Schools Rates Calculation

Group V - Schools Rates	Unit Cost \$/HCF Discharged	Assumed Flow per Student (gpd)	Assumed Flow per Student (HCF per Month)	Proposed Monthly Rate (per Student) Rounded
GROUP V - Elementary Schools	\$4.51	4.8	0.2	\$0.88
GROUP V - Junior High Schools	\$4.51	7.2	0.3	\$1.32
GROUP V - High Schools	\$4.51	9.6	0.4	\$1.76
GROUP V - Boarding Schools	\$4.51	50.0	2.0	\$9.17

Table 26 Option 2 - Proposed Wastewater Rates by Customer Class

Customer Class	Current Rate	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
		50.0% w/COS ⁽¹⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾	4.0% ⁽²⁾
Group I - Residential - Monthly Flat Rate						
Single Family Resident (SFR)	\$29.52	\$44.91	\$46.71	\$48.57	\$50.52	\$52.54
SFR w/ Second Dwelling Unit	\$44.28	\$67.36	\$70.06	\$72.86	\$75.77	\$78.80
Group I - Residential - Rates per HCF						
Multi Family Resident (MFR) (per HCF)	\$3.48	\$5.16	\$5.37	\$5.59	\$5.81	\$6.04
Mobile Home (per HCF)	\$3.48	\$5.16	\$5.37	\$5.59	\$5.81	\$6.04
Commercial -Rates per HCF						
GROUP II - Commercial 2	\$2.88	\$4.39	\$4.57	\$4.75	\$4.94	\$5.13
GROUP III - Commercial 3	\$4.38	\$6.26	\$6.51	\$6.77	\$7.04	\$7.32
GROUP IV - Commercial 4	\$8.10	\$10.95	\$11.39	\$11.84	\$12.32	\$12.81
Industrial Pretreatment Class III	\$4.82	\$7.07	\$7.35	\$7.64	\$7.95	\$8.27
Group V - School - Monthly Rates per Student						
Elementary School (per student)	\$0.59	\$0.88	\$0.92	\$0.96	\$0.99	\$1.03
Junior High School (per student)	\$0.87	\$1.32	\$1.38	\$1.43	\$1.49	\$1.55
High School (per student)	\$1.17	\$1.76	\$1.84	\$1.91	\$1.98	\$2.06
Boarding School (per student)	\$6.09	\$9.17	\$9.54	\$9.92	\$10.31	\$10.73
Breweries -Rates per HCF						
B1 – Brewery without a restaurant and hauls waste for outside treatment	\$2.88	\$4.39	\$4.57	\$4.75	\$4.94	\$5.13
B2 – Brewery without a restaurant that does not haul waste for outside treatment	\$9.34	\$12.20	\$12.69	\$13.20	\$13.73	\$14.28
B3 – Brewery with a restaurant and hauls waste for outside treatment	\$8.10	\$10.95	\$11.39	\$11.84	\$12.32	\$12.81
B4 – Brewery with a restaurant that does not haul waste for outside treatment	\$11.60	\$15.05	\$15.66	\$16.28	\$16.93	\$17.61
Other - Rate per HCF	\$2.97	\$4.29	\$4.47	\$4.65	\$4.83	\$5.02

Note:

- (1) Proposed rates for FYE 2022 include a cost-of-service adjustment and increases for specific rates vary from the 50.0-percent overall rate revenue increase.
- (2) Proposed rates for FYE 2023 and subsequent years are calculated by applying the proposed overall rate revenue increase to the FYE 2022 rate proportionally.

No change from Option 1.

Appendix I

PROJECTED FLOW AND LOADS

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Customer Growth	0.49%	0.30%	0.57%	0.17%	0.68%
Estimated Sewer Flows (HCF)					
GROUP I - SFR & Minimum Charges	2,254,505	2,261,175	2,273,999	2,277,789	2,293,373
GROUP I - MFR/Mobile Homes	517,586	519,117	522,062	522,931	526,509
GROUP II - Commercial 2	341,658	342,669	344,613	345,187	347,549
GROUP III - Commercial 3	359,280	360,343	362,387	362,990	365,474
GROUP IV - Commercial 4	105,086	105,397	105,995	106,172	106,898
Other	58,907	59,082	59,417	59,516	59,923
Brewery - B2	2,895	2,904	2,920	2,925	2,945
Brewery - B4	3,308	3,318	3,337	3,342	3,365
GROUP VI - Large Volume (no accounts)	-	-	-	-	-
Industrial Pretreatment Class III	44,386	44,518	44,770	44,845	45,152
GROUP V - Elementary Schools	8,794	8,820	8,870	8,885	8,946
GROUP V - Junior High Schools	5,218	5,233	5,263	5,272	5,308
GROUP V - High Schools	9,657	9,685	9,740	9,756	9,823
GROUP V - Boarding Schools	5,373	5,389	5,420	5,429	5,466
Total Estimated Sewer Flows (HCF)	3,716,655	3,727,650	3,748,792	3,755,039	3,780,731
Estimated BOD Discharges (lbs)					
GROUP I - SFR & Minimum Charges	2,814,688	2,823,015	2,839,026	2,843,757	2,863,214
GROUP I - MFR/Mobile Homes	646,192	648,104	651,779	652,866	657,332
GROUP II - Commercial 2	277,969	278,791	280,373	280,840	282,761
GROUP III - Commercial 3	736,371	738,550	742,739	743,976	749,067
GROUP IV - Commercial 4	537,909	539,501	542,560	543,465	547,183
Other	47,804	47,945	48,217	48,297	48,628
Brewery - B2	22,867	22,935	23,065	23,103	23,261
Brewery - B4	33,246	33,344	33,533	33,589	33,819
GROUP VI - Large Volume (no accounts)	-	-	-	-	-
Industrial Pretreatment Class III	82,723	82,967	83,438	83,577	84,149
GROUP V - Elementary Schools	7,137	7,158	7,198	7,210	7,260
GROUP V - Junior High Schools	4,234	4,247	4,271	4,278	4,307
GROUP V - High Schools	7,836	7,860	7,904	7,917	7,971
GROUP V - Boarding Schools	4,360	4,373	4,398	4,405	4,436
Total BOD Discharge (lbs)	5,223,336	5,238,789	5,268,501	5,277,281	5,313,388
Estimated TSS Discharges (lbs)					
GROUP I - SFR & Minimum Charges	2,814,688	2,823,015	2,839,026	2,843,757	2,863,214
GROUP I - MFR/Mobile Homes	646,192	648,104	651,779	652,866	657,332
GROUP II - Commercial 2	257,115	257,876	259,339	259,771	261,548
GROUP III - Commercial 3	625,480	627,330	630,888	631,939	636,263
GROUP IV - Commercial 4	446,071	447,391	449,928	450,678	453,761
Other	36,772	36,881	37,090	37,152	37,406
Brewery - B2	14,645	14,689	14,772	14,797	14,898
Brewery - B4	22,508	22,575	22,703	22,740	22,896
GROUP VI - Large Volume (no accounts)	-	-	-	-	-
Industrial Pretreatment Class III	132,230	132,622	133,374	133,596	134,510
GROUP V - Elementary Schools	5,490	5,506	5,537	5,546	5,584
GROUP V - Junior High Schools	3,257	3,267	3,285	3,291	3,313
GROUP V - High Schools	6,028	6,046	6,080	6,090	6,132
GROUP V - Boarding Schools	3,354	3,364	3,383	3,389	3,412
Total TSS Discharge (lbs)	5,013,831	5,028,664	5,057,184	5,065,611	5,100,270

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Customer Accounts					
GROUP I - SFR & Minimum Charges	22,724	22,792	22,921	22,959	23,116
GROUP I - MFR/Mobile Homes	977	980	985	987	994
GROUP II - Commercial 2	1,237	1,240	1,247	1,250	1,258
GROUP III - Commercial 3	355	356	358	358	361
GROUP IV - Commercial 4	238	239	240	241	242
Other	266	267	268	269	271
Brewery - B2	8	8	8	8	8
Brewery - B4	4	4	4	4	4
GROUP VI - Large Volume (no accounts)	-	-	-	-	-
Industrial Pretreatment Class III	262	263	264	265	267
GROUP V - Elementary Schools	17	17	17	17	17
GROUP V - Junior High Schools	22	22	22	22	22
GROUP V - High Schools	72	72	72	73	73
GROUP V - Boarding Schools	3	3	3	3	3
Total Accounts	26,185	26,262	26,411	26,455	26,636

Number of Students					
GROUP V - Elementary Schools	6,852	6,872	6,911	6,923	6,970
GROUP V - Junior High Schools	2,710	2,718	2,734	2,738	2,757
GROUP V - High Schools	3,762	3,773	3,795	3,801	3,827
GROUP V - Boarding Schools	287	288	290	290	292