

DRAFT REPORT

Wastewater Rates, Fees,
and Charges Study

Orange County Sanitation District

Orange County, CA
November 2022





November 21, 2022

Ms. Angela Brandt
Financial Management Division and Revenue/Payroll Supervisor
Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, California 92708

Subject: Wastewater Rates, Fees, and Charges Study - Draft

Dear Ms. Brandt:

HDR Engineering Inc. (HDR) was engaged to conduct a comprehensive cost of service wastewater rate, fees, and charges study (Study) by the Orange County Sanitation District (OC San). The Study includes development of cost based Regional Wastewater Service rates, Capital Facility Capacity Charge, Supplemental Capital Facility Charge, and ancillary charges provided to OC San customers over a 5-year period beginning July 1, 2023.

OC San outlined several goals to accomplish with this Study. This included the establishment of proposed rates at sufficient levels to fund annual operations and maintenance expense and necessary capital infrastructure that are cost-based and proportional to customers. The Study also reviewed and updated the capital facility charges to cost-based levels. The study also updated miscellaneous fees and charges to cost-based levels that reflect the costs associated with providing the specific service. Finally, this report provides the basis for developing and implementing rates that are cost-based, defensible, and equitable to OC San's customers.

This report details the steps and methodology used in the development of the rates and charges for the next five years. The Study and analysis were done using generally accepted rate setting principles as described in the Water Environmental Federation Manual of Practice 27.

We appreciate the opportunity to work with OC San management and staff in the development of the Study.

Sincerely yours,
HDR Engineering, Inc.

Shawn Koorn
Associate Vice President

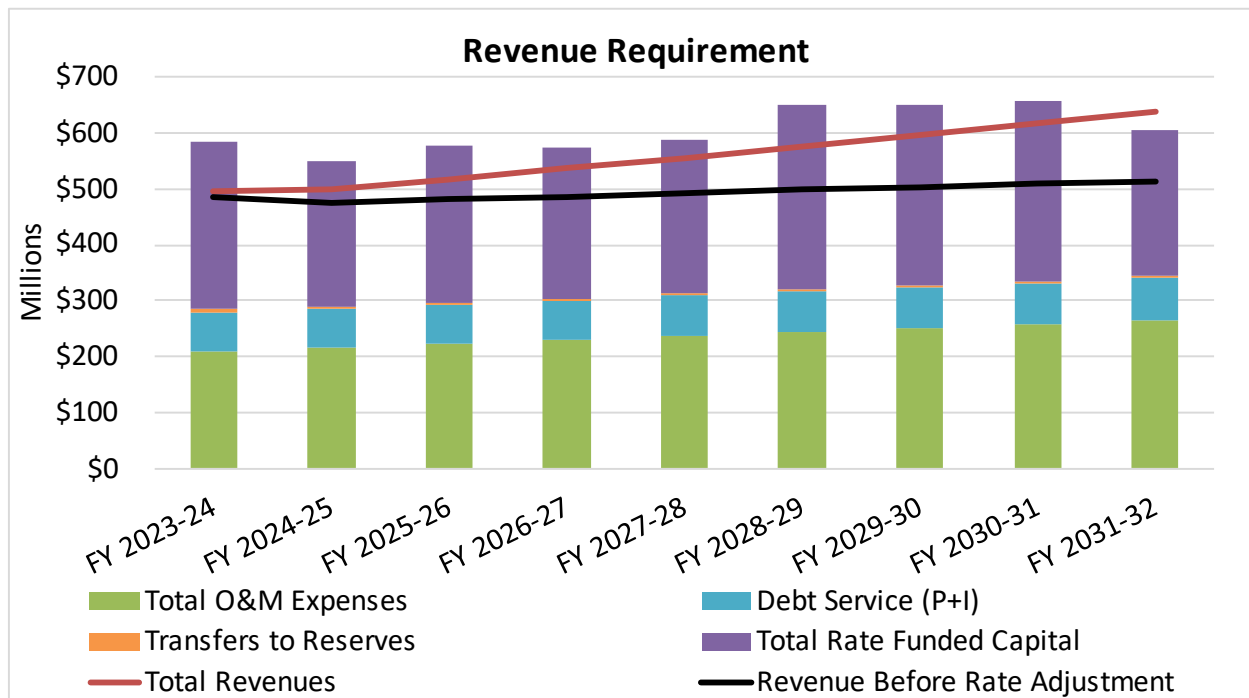


Executive Summary

HDR completed a comprehensive cost of service wastewater rate, fee, and charges study (Study) for Orange County Sanitation District (OC San). The Study was completed using generally accepted rate and fee setting principles consistent with the methods outlined in the Water Environmental Federation Manual of Practice number 27. The goal of a comprehensive rate and fee study is to establish proportional rates that reflect the cost to the utility to serve its customers.

The first step in the study was to conduct a revenue requirement analysis. A revenue requirement analysis compares the utilities revenue to the utility’s operating expenses and capital funding approach and determines if current rate levels are sufficient or if a rate adjustment is necessary to responsibly operate and maintain the utility. An important part of a revenue requirement is to set rates that maintain the utilities financial policies and legal requirements. The focus of the study is on the five-year rate setting period of 2023-24 through 2027-28. The revenue requirement extends beyond the rate setting period matching the same time frame of OC San’s capital plan which extends to FY 2031-32. The extended view of the revenue requirement helps to provide an advanced look at what OC San can expect beyond the near term.

The chart below represents the revenue requirement, with the bars representing OC San’s costs and the lines representing OC San’s revenue. The red line represents the revenue with an annual increase of 3.5% and the black line is the projected revenue with no rate adjustments.

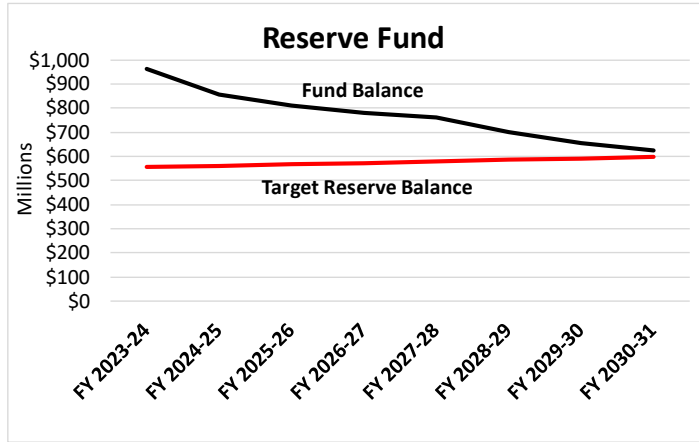


The chart above shows, in all but the last year, OC San’s expenses exceed the estimated revenue OC San is expected to collect each year. The shortfall in annual revenue is expected to be covered by OC San’s available available reserve balances.

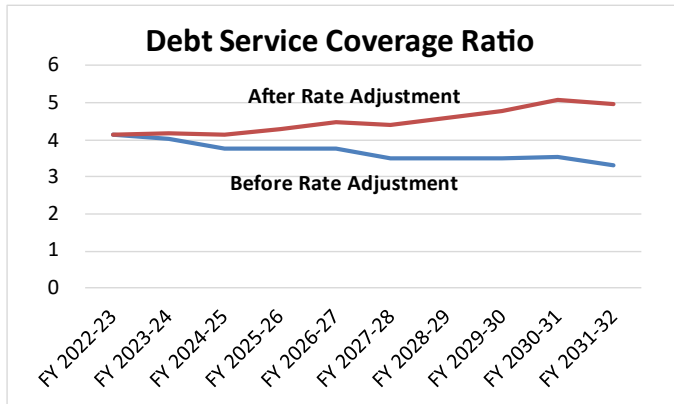


OC San has two policies that are particularly relevant to the revenue requirement, a target ending reserve balance and debt service coverage (DSC).

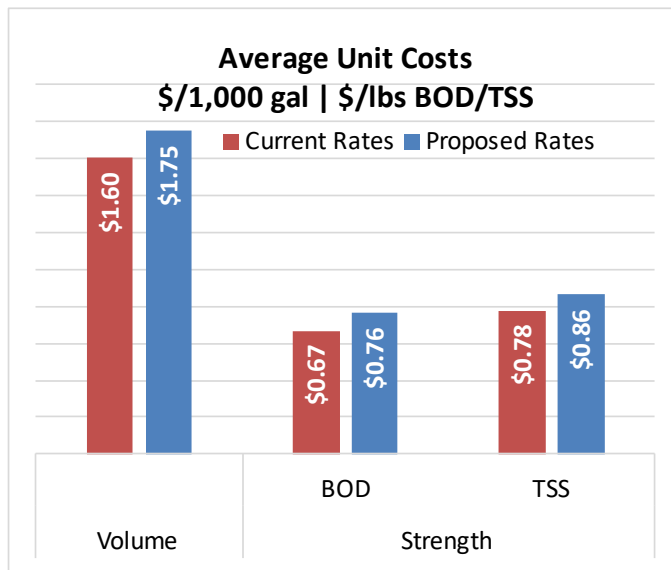
OC San currently has approximately \$964 million in reserve funds. One of OC San’s objectives for the revenue requirement analysis was to set rates at a level that would facilitate a controlled drawdown of the available reserve balance over the extended revenue requirement period. The chart to the right shows the projected ending fund balance reaching OC San’s target fund balance.



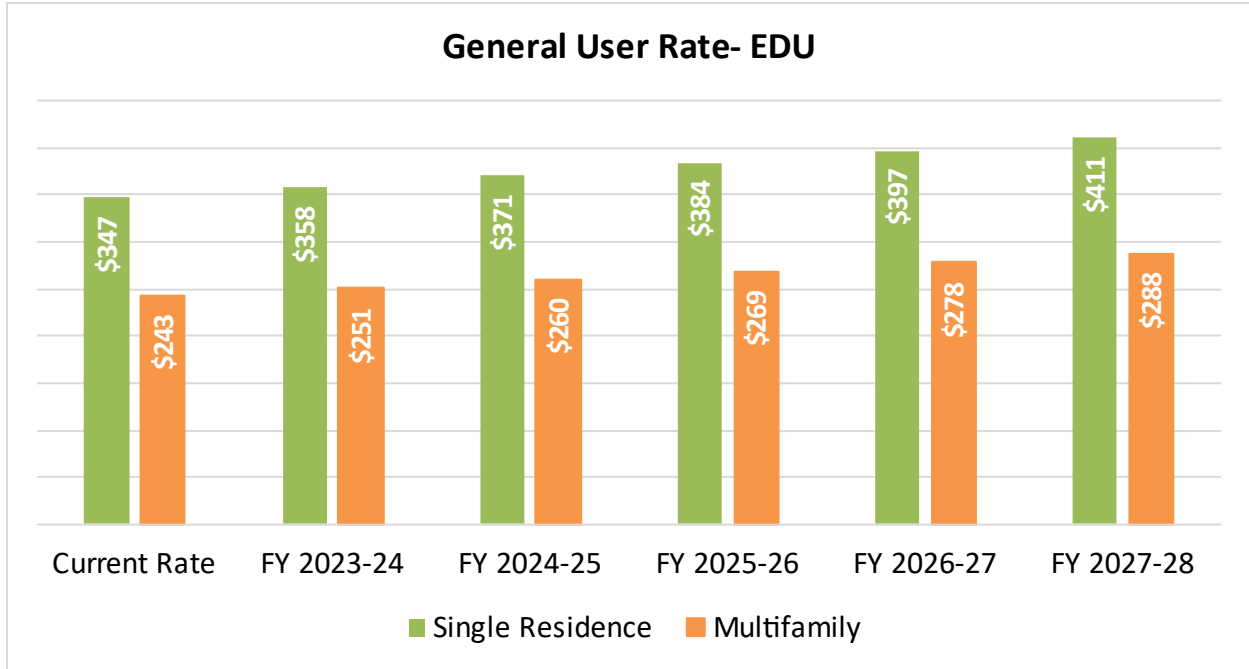
DSC is a measure of financial health and their ability to make debt service payments and is often expressed as a ratio of funds available after paying for operations and maintenance compared to their annual debt service payment. A typical minimum DSC ratio 1.25, which means after operations and maintenance there are 1.25 times their debt service payment. OC San has an exceptionally strong DSC ratio which exceeds 4.0 over the extended analysis period with the assumed 3.5% annual rate adjustments.



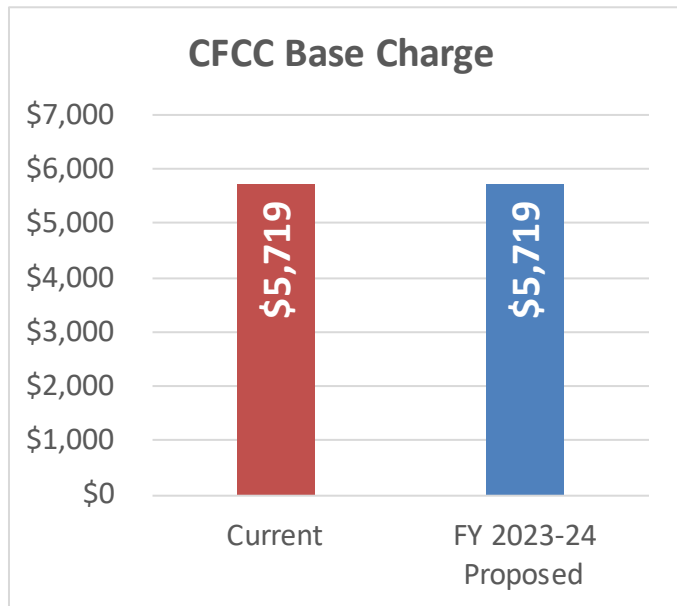
The next step in the comprehensive rate study is the cost of service analysis. HDR used generally accepted cost allocation methods in the allocation of OC San’s costs to Volume, Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS). The results of the analysis were the unit costs by volume and by pound. The chart below shows the current unit cost compared to the results of the cost of service. These unit charges are the basis for the Industrial/Permit user



The cost of service analysis also determines OC San’s Equivalent Dwelling Unit (EDU) charge for the General User customers.



Another task in the study was to update the Capital Facility Capacity Charge (CFCC). This analysis is different from development of user rates in that it is not based on OC San’s cost to continue operating but rather a means of maintaining equity among new and existing OC San customers. OC San’s ability to serve new customers requires them to already have excess capacity or for them to build new capacity to serve new customers. The CFCC is calculated based on OC San’s existing and future infrastructure costs expressed as a unit of capacity or EDU. The CFCC analysis determined that the CFCC was \$5,568 which is only slightly less than the existing charge of \$5,719. Given the closeness of the calculated rate and the current rate it was decided that the charge would remain the same for FY 2023-24, forgoing the annual adjustment for inflation.



This concludes the executive summary portion of the Study. The executive summary provides an overview of the study as a whole. The next sections of the report provide a more detailed explanation of the Study and the methods used in the development of the analysis.



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1 Comprehensive Wastewater Rate Study

1.1 Introduction

HDR Engineering Inc. (HDR) was retained by the Orange County Sanitation District (OC San) to conduct a comprehensive cost of service wastewater rate, fee, and charges study (Study). The purpose of the Study is to develop cost-based rates and fees for the next five year period. The purpose of conducting a cost of service study such as this, is to establish cost-based and proportional rates for OC San's customers and adhere to the requirements for setting rates according to State law under Proposition 218 (Prop 218).

The objective of this Study was to collaborate with OC San staff to develop a wastewater financial plan and cost-based rates necessary to meet the operation and maintenance (O&M) expenses and the capital improvement plan for OC San. This Study determined the adequacy of the existing wastewater rates and provides the framework for future revenue (rate) adjustments.

1.2 Key Objectives of the Study

OC San had a number of key objectives in developing the Study. These key objectives were as follows:

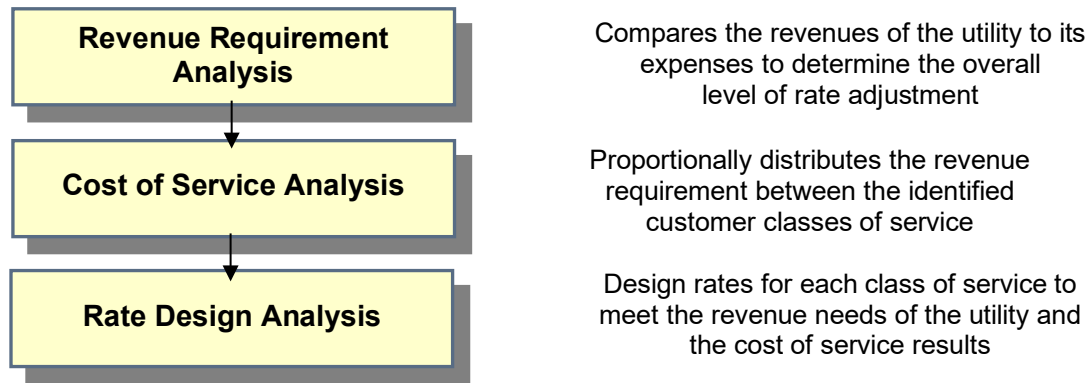
- Set rates in a manner that is consistent with the principles and methodologies established by the Water Environment Federation Manual of Practice number 27.
- Develop OC San's revenue requirement analysis to provide prudent and adequate funding levels for O&M and capital infrastructure.
- Develop a ten-year financial planning model (revenue requirement) that provides prudent funding levels for O&M activities along with the capital infrastructure identified in OC San's capital improvement planning documents.
- Develop a cost allocation methodology that proportionally distributes the cost of providing wastewater service to OC San's customers.
- Develop proposed wastewater rates for a five-year period which are cost-based, proportional, and legally defensible.
- Update OC San's Capital Facility Capacity Charges (CFCC) and Supplemental Capital Facility Capacity Charges (SCFCC) to conform to legal requirements
- Update other miscellaneous charges including permit and sampling charges.

These key objectives provided guidance as the Study was developed and progressed.

1.3 Overview of the Rate Study Process

Wastewater rates must be set at a level where a utility’s annual operating and capital expenses are met with the revenues received from customers. This is an important point, as failure to achieve this objective may lead to insufficient funds to maintain system integrity. To evaluate the adequacy of the existing rates, comprehensive rate studies are often performed. A comprehensive wastewater rate study consists of three interrelated analyses. Figure 1 provides an overview of these analyses.

Figure 1
Overview of the Comprehensive Wastewater Rate Analyses



The above framework was utilized in the development of the OC Sans Study. Provided below is a summary of the analyses undertaken and our findings, conclusions, and recommendations.

1.4 Development of the Revenue Requirement Analysis

The development of revenue requirement analysis is the first step in the comprehensive wastewater rate study process. A revenue requirement analysis determines the adequacy of the overall level of OC San’s wastewater rates. From this analysis, a determination can be made as to the level of the revenue (rate) adjustments needed to provide adequate and prudent funding for projected operating and capital needs.

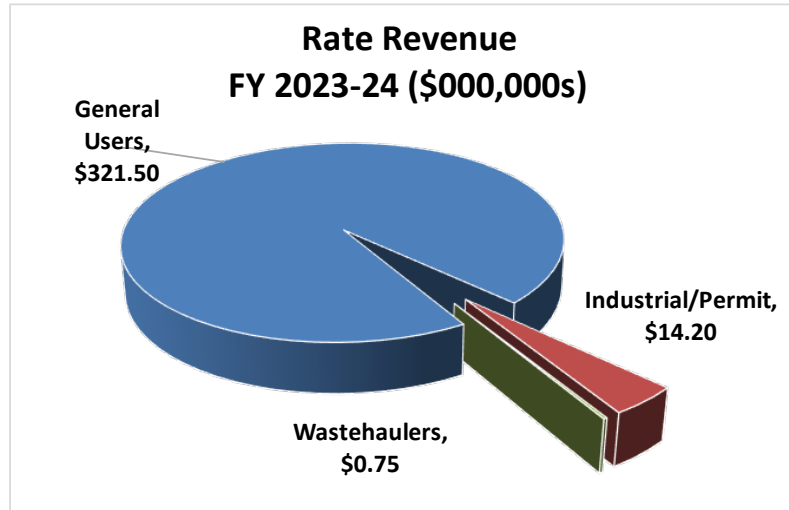
1.4.1 Determination of Time Period and Method of Accumulating Costs

The initial step in calculating the revenue requirement for OC San was to establish a “test period”, or time frame of reference for the revenue requirement analysis. For this particular study, the focus of the revenue requirement was for the 5-year projected time period of FY 2023-24 through FY 2027-28. However, the model developed by HDR projects rates over a 10-year period to take into consideration future revenue needs and plan for future capital improvements. By reviewing costs over an extended time period, OC San can anticipate and plan around any significant changes or needs in operating and capital requirements.

The second step in determining the revenue requirements for OC San was to determine the basis of accumulating costs. In this case, a “cash basis” revenue requirement methodology was utilized. This methodology includes both operating and capital costs within the total revenue requirements and was the methodology used in previous rate studies completed for OC San.

1.4.2 Projection of Revenues

The first step in developing the revenue requirement was to develop a projection of rate revenues, at present rate levels. In developing this portion of the analysis, the customer billing units for the historical FY 2020-21 were reviewed and then escalated to reflect OC San’s estimated billing units for the projected time period of FY 2023-24 through FY 2031-32. OC San charges its primary customer type, General Users, a rate based on an Equivalent Dwelling Unit (EDU) basis.



Industrial/Permit user are charge based on their actual volume of wastewater and calculated pounds of Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS). Wastehaulers, the final customer class, are a much smaller customer group and are charged by the gallon of wastewater discharged into the system.

The billing units for each customer group were multiplied by the applicable current (present) rates, which included the most recent rate adjustment implemented for the fiscal year 2022-23, to develop the projection of annual rate revenues over the 5-year period.

This calculation resulted in annual rate revenues of approximately \$336 million in FY 2023-24. OC San also has several other revenue streams in addition to the annual rate revenue received. The other, or miscellaneous revenue, for FY 2023-24 includes property tax of \$112 million, Irving Ranch Water District (IRWD) of \$16 million, and Santa Ana Water Project Authority (SAWPA) \$3 million. IRWD and SAWPA are customers of OC San, however, their wastewater rates are established by contracts rather than through this Study.

1.4.3 Projection of Operation and Maintenance Costs

The revenue requirement projected the operation and maintenance (O&M) expenses by utilizing OC San’s most recent preliminary budgeted expenses and escalating them over the ten-year period. The annual rate of inflation was estimated on average to be 3% per year. Total current (FY 2023/24) O&M expenses for OC San are approximately \$210 million. With escalation, O&M expenses are projected to increase to approximately \$236 million in FY 2027/28.



1.4.4 Projection of Debt Service Payments

OC San’s cash basis revenue requirement includes a component for annual debt service payments. Debt service payments relates to annual debt service obligations (principal and interest) when capital projects are financed through long-term debt. OC San has several outstanding debt issues used to fund prior capital expenditures. For the fiscal year 2023-24 principal and interest payments are approximately \$68.6 million according to debt schedules provided by OC San. In the development of the capital funding analysis, no additional debt issuances assumed or were there any refunding of existing outstanding debt.

1.4.5 Projection of Wastewater Capital Improvement Projects Funded from Rate Revenues

The focus of this portion of the analysis is on the funding of capital improvement projects. During the projected five-year period OC San has capital improvement projects for their collection system and treatment plant which total approximately \$1.663 billion. These capital projects were provided by OC San staff as outlined in the current capital improvement plan.

The funding of OC San’s capital program has been historically funded through a combination of current revenues, reserve funds, capital facility charges, and long-term debt. The revenue requirement assumes the \$1.663 billion in capital expenditures will be funded using \$1.388 billion of current revenue, \$98 million of capital facility charge revenue, and the remaining from reserves, assumed savings, and deferrals. A summary of the funding plan is shown below in Table 1-1.

Table 1-1. Summary of the Capital Improvement Plan (\$000,000)

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	5-year Total
Capital Improvement Projects						
Capital Expenditures	\$329	\$312	\$322	\$323	\$325	\$1,611
Future Renewal and Replacement	10	2	6	19	16	52
Total Capital Improvement Projects	\$339	\$314	\$328	\$342	\$340	\$1,663
Capital Funding						
CIP Savings & Deferrals	\$24	\$32	\$27	\$49	\$45	\$177
CFCC & SCFCC Revenue	19	20	20	20	20	98
Rate Revenue and Reserve Funds	297	262	281	273	275	1,388
Total Capital Funding	\$339	\$314	\$328	\$342	\$340	\$1,663

As noted previously, no additional long-term debt is being issued over the Study time period to fund planned capital improvement projects. OC San has specifically developed a capital funding analysis that utilizes available reserves to draw reserve balances to target levels and not issue additional long-term debt.



1.4.6 Transfers to Reserves

OC San is self-insured and contributes \$3.85 million to their insurance reserve fund annually. Additionally OC San also has a transfer for equity purchases of \$3.50 million in FY 2023-24.

1.4.7 Summary of the Wastewater Revenue Requirements

The above components of the revenue requirement are summed to develop the overall wastewater revenue requirements for OC San. Provided below in Table 1-2 is a summary of OC San’s revenue requirement analysis for FY 2023-24 – FY 2027-28.

Table 1-2. Summary of the Revenue Requirement Analysis (\$000,000)

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Revenues –					
Rate Revenues	\$336.4	\$337.4	\$338.4	\$339.4	\$340.3
Other Revenue	<u>149.2</u>	<u>138.0</u>	<u>142.7</u>	<u>146.6</u>	<u>150.9</u>
Total Revenues	\$485.7	\$475.4	\$481.1	\$485.9	\$491.3
Expenses –					
Total O&M Expenses	\$209.9	\$216.2	\$222.7	\$229.4	\$236.2
Total Rate Funded Capital ^[1]	296.8	262.3	\$280.9	273.0	274.9
Debt Service (P+I)	\$68.6	68.6	\$68.6	68.5	72.7
Transfers to Reserves	<u>7.4</u>	<u>3.9</u>	<u>3.9</u>	<u>3.9</u>	<u>3.9</u>
Total Rev. Requirement	\$582.6	\$550.9	\$576.1	\$574.7	\$587.6
Draw Down of Fund Balance	(\$85.2)	(\$51.4)	(\$58.2)	(\$38.7)	(\$32.5)
Deficiency of Funds	(\$11.8)	(\$24.0)	(\$36.8)	(\$50.1)	(\$63.9)
Bal./Defic. As a % of Rates	3.5%	7.1%	10.9%	14.8%	18.8%
Assumed Rate Adjustment	3.50%	3.50%	3.50%	3.50%	3.50%
Additional Revenue from Rate Adjust.	\$11.8	\$24.0	\$36.8	\$50.1	\$63.9

The results shown in Table 1-2 indicate a deficiency of nearly 18.8% over next five years. It should be noted that these deficiencies are cumulative and any rate adjustments in the initial years will reduce the overall deficiency in the remaining years. This deficiency also reflects the use of \$266 million of reserve funds over the time period to reduce the impact to customers while also drawing down fund balance to minimum target levels.

1.4.8 Review of Debt Service Coverage Ratios

As noted, OC San has debt financed significant portion of past capital improvements using Certificates of Participation (COP). COPs are repayment obligations, rather than a traditional bonds or loans. Though COPs are technically different than a bond, they do function in the same way where OC San



pays the holder of the COP annual payments for principal and interest on the outstanding balance. The COP agreements require OC San to maintain a minimum Debt Service Coverage Ratio of 1.25.

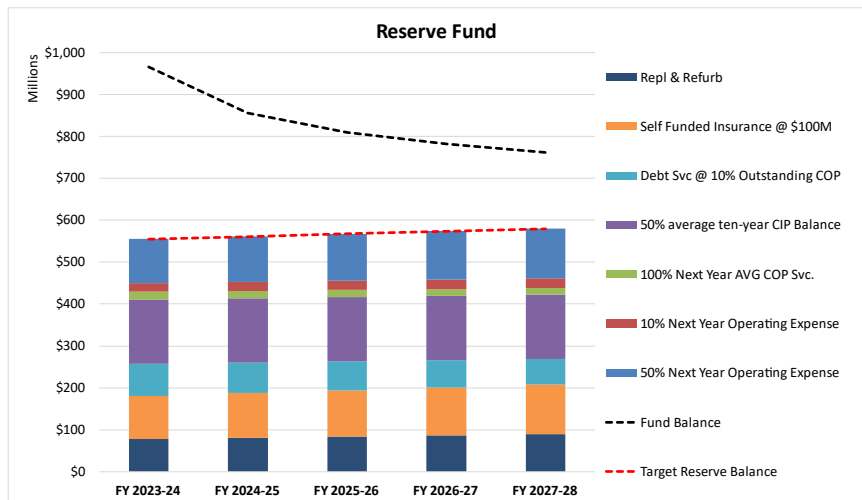
Table 1-3. Debt Service Coverage Ratio

	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Debt Service Coverage Minimum	1.25				
Debt Service Coverage Before Rate Adjustment	4.02	3.78	3.77	3.75	3.51
Debt Service Coverage After Rate Adjustment	4.19	4.13	4.30	4.48	4.39

The calculation of debt service coverage ratios in the Study projects OC San to be significantly higher than the 1.25 minimum requirement throughout the analysis period and reflect the strong financial health of OC San. As a point of reference, HDR is not acting in the capacity of a financial advisor. The calculation of the debt service coverage ratio is for illustrative purposes only. OC San should work with their financial advisor or bond counsel to calculate the debt service coverage for financial purposes.

1.4.9 Summary of Reserve Levels

Reserve funds are critical to a utility’s operations and adequate levels of reserve reflect prudent financial management. Over the years OC San has refined the target reserve balance to best reflect their financial needs. The target balance is a combination of calculations that represent the considerations when establishing minimum target fund balances. These considerations include, cashflow to pay the utilities expenses, funding for capital projects, annual debt service payments, self-insurance, and other unforeseen situations or emergencies. For the 2023-24 fiscal year, the target fund balance is \$555 million, while the 2023-24 fiscal year beginning fund balance is approximately \$964 million.



One of OC San’s objectives for the Study was to draw

down existing fund balance to the target minimum levels over a 10-year period. The chart above shows the projected ending fund balance sloping down over the five years of the analysis with the goal of reaching the target balance in the next ten years. As noted, approximately \$266 million of reserves are being used to fund capital improvements as well as transition rates to cost-based levels over the projected time period. After adding back projected accumulated interest earnings, in 2027-28 fiscal year the fund balance is projected to reduce by approximately \$200 million.



1.4.10 Revenue Requirement Summary and Recommendations

The revenue requirement analysis undertaken herein was developed using generally accepted rate making principles. In establishing the revenue requirement analysis consideration was given the proper and adequate funding of OC San's operating and capital costs. The revenue requirements as developed herein are reflective of the OC San's current financial policies and rate philosophies.

Based on the results of the revenue requirement analysis, it is recommended that OC San adjust the overall level of rate revenues by 3.5% annually in FY 2023-24 through FY 2027-28. As noted, this assumes the use of available reserves to fund the annual differences between total annual expenses and revenues. In total, approximately \$266 million is projected to be needed to prudently fund the O&M and capital needs over this projected five year period.

1.5 Development of the Cost of Service Analysis

A cost of service analysis is concerned with the proportional distribution of the total revenue requirement between the customer classes of service. For this Study, the classes of service were identified as general user, industrial/permit user, and wastehaulers. The previously developed revenue requirement analysis was utilized in the development of the cost of service analysis.

1.5.1 Objectives of a Cost of Service Analysis

There are two primary objectives in conducting a cost of service analysis:

- Proportionally distribute the revenue requirement between the customer classes of service
- Derive average unit costs for subsequent rate designs

The objectives of the wastewater cost of service analysis are different from determining the revenue requirement. As noted above, the revenue requirement analysis determines the utility's overall financial needs, while the cost of service study determines the proportional manner to collect the financial needs from the identified customer classes of service. The second rationale for conducting a cost of service analysis is to provide the basis for designing the proposed rates that reasonably reflect the costs incurred by OC San to provide service.

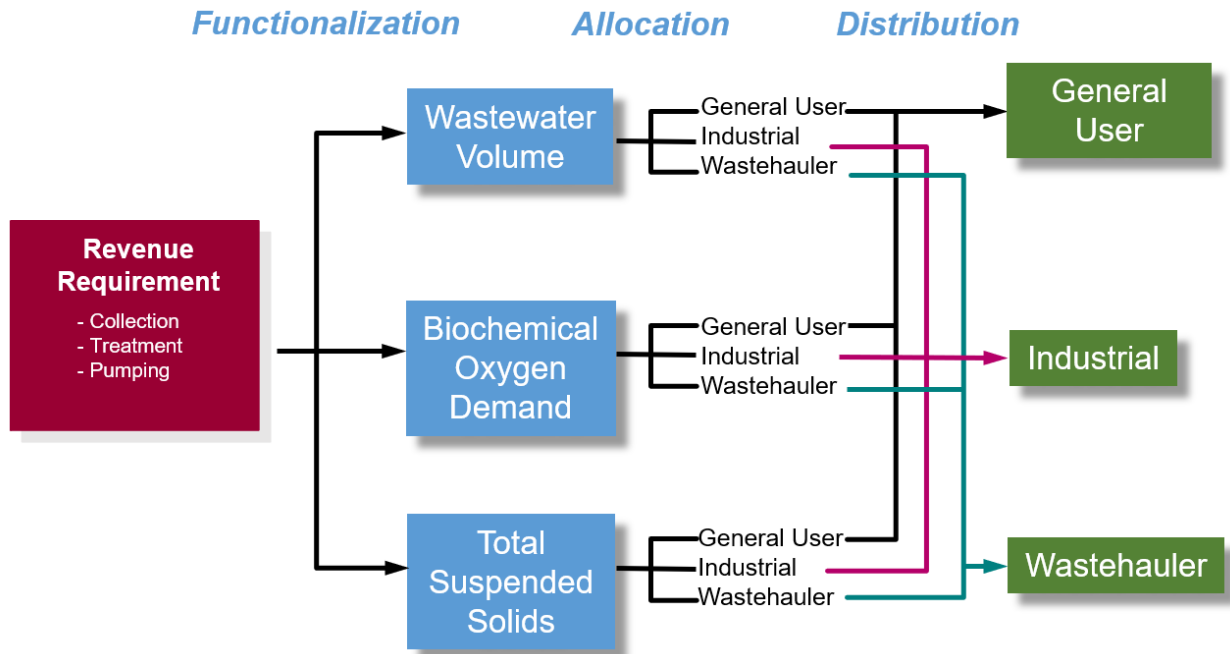
Wastewater utility incurs costs to convey and treat the wastewater to the degree required by government regulation. Treatment plants are designed around the overall volume of the wastewater and the amount of pollutants, or strength, of the wastewater. Different treatment plant components are designed to address the volume and/or the removal of the pollutants.

For this Study, the two types of pollutants the treatment plants are designed to treat are biochemical oxygen demand (BOD) and total suspended solids (TSS). Wastewater coming from different customer types often have different levels of concentration of BOD and TSS. Customers with higher than average concentration of either, or both, BOD and TSS utilize the treatment plant to a greater extent than an average user. Because these customers with higher than average concentration of pollutants utilize treatment plant components designed to treat the pollutants they should then be responsible for a higher proportionate share of the cost to treat the pollutant.

Each of these types of costs may be collected in a slightly different manner as to allow for the development of rates that attempt to collect costs in the same manner as they are incurred.

1.5.2 Overview of the Cost of Service Analysis

A cost of service study utilizes a three-step approach to review costs; functionalization, allocation, and distribution of costs. The graphic shown below provides a simple overview of the three-step process of functionalizing costs, allocating them to the various cost components (e.g., volume, BOD or TSS) and then proportionally distributing costs to the identified customer classes of service (i.e., General User, Industrial/Permit user, Wastehauler).



The above illustration is greatly simplified for purposes of explaining the cost of service process. These basic concepts are adapted and tailored to OC San’s specific wastewater system. In this case, OC San’s cost of service study uses the basic approach illustrated above, but it has been tailored to reflect the specific and unique characteristics and customers of OC San’s wastewater system.

Provided below is a more detailed discussion of the general procedures, or steps, illustrated above and used within OC San’s wastewater cost of service analysis.

Functionalization – Functionalization is the arrangement of expenses and asset (plant) data by major operating functions within the utility (e.g., treatment, conveyance). For OC San’s Study, the functionalization of the cost data was accomplished through OC San’s system of asset and expense accounts. More specifically for expenses, OC San has a detailed account level that breaks the expense into areas that are easily functionalized. Functional categories used in this Study were:

- Headworks
- Primary Sedimentation
- Secondary Sedimentation
- Trickling Filters
- Activated Sludge Process
- Sludge Thickening
- Digestion
- Solids Handling
- Solids Disposal
- Effluent Disposal



- Oxygen Activated Sludge Process
- Aeration Equipment and Structures
- Blower Equipment and Structures
- Interplant
- Collection

These are the same functional categories as used in prior cost of service studies for OC San.

Allocation – The next step of the cost of service is the allocation of the functionalized assets and costs. Allocation determines what purpose assets serve and why expenses were incurred or what type of need is being met. OC San’s plant accounts and revenue requirement were reviewed and allocated based on two types of allocators:

- **Volume-Related Asset or Costs:** Volume assets are those assets that are put into place to treat the overall volume of wastewater. Volume costs are costs that tend to vary with the total quantity of wastewater produced by a customer. Chemicals or electricity used in the treatment of water is an example of a volume-related allocation since these costs tend to vary based upon the total flow of wastewater.
- **Strength Related Assets and Costs:** For this Study, and as noted, two primary types of pollutants were identified, BOD and TSS. Strength of wastewater is the concentration of the BOD and TSS of the wastewater, typically expressed as milligram per liters. Strength of wastewater is important because the higher the strength of the wastewater, either BOD or TSS, the higher the costs to treat that wastewater. Assets and costs of the wastewater treatment process are necessary to specifically treat either, or both, BOD and TSS.

The allocation of assets, capital and expenditures, used in OC San prior studies were reviewed by HDR to determine if they remain appropriate. Based on the review, HDR found the allocations used in past studies were appropriate and used to allocate costs in the development of this Study. Table 1-4 summarizes the functional categories described above and the allocation.



Table 1-4. Allocation of Functional Categories

Description	Asset Allocation			Expense Allocation		
	Volume	Strength		Volume	Strength	
		BOD	TSS		BOD	TSS
Headworks	75%	5%	20%	75%	5%	20%
Primary Sedimentation		30%	70%	15%	25%	60%
Secondary Sedimentation		70%	30%		100%	
Trickling Filters		100%			100%	
Activated Sludge Process		100%			100%	
Oxygen Activated Sludge Process		100%			100%	
Aeration Equipment and Structures		100%			100%	
Blower Equipment and Structures		100%			100%	
Sludge Thickening		25%	75%		25%	75%
Digestion		25%	75%		25%	75%
Solids Handling		25%	75%		25%	75%
Solids Disposal		45%	55%		45%	55%
Effluent Disposal	100%			100%		
Collection	90%	10%		90%	5%	5%
Interplant		70%	30%		70%	30%

The results of the individual asset and expense allocation can be summed up by combining the total asset, capital and operations and maintenance expense and arriving at an overall allocation. Table 1-5 shows the summary level allocation.

Table 1-5. Summary of the Allocations

Description	Volume	Strength	
		BOD	TSS
Allocation of Plant Assets	54%	25%	21%
Allocation of Operations & Maintenance Expenses	23%	30%	47%
Allocation of Capital Expenses	47%	27%	27%

Table 1-5 provides the results of the allocation process which determined that 54% of plant in service is necessary to serve the total volume of wastewater, 25% necessary to treat BOD, and 21% TSS. The allocation of plant assets in Table 1-5 is a composite of individual asset groups that best reflect their function within the overall system. The asset allocations were used as a means of allocating debt service and policy driven assumptions within the revenue requirement. Similarly, the O&M expense allocation is a composite of several lines of individual types of expenses specifically allocated based on their function which are combined to equal 23% volume, 30% BOD and 47% TSS. The allocation of capital expenses is also a combined value based on each individual capital project, when combined



they result in 47% volume, 27% BOD, and 27% TSS related. The capital allocation was used to allocate capital funded from rates which is the annual amount of funding from current rate revenues. Each of these allocations along with specific cost allocations are used in the process of allocating the total revenue requirement. Table 1-6 below provides the summary of the revenue requirement allocation.

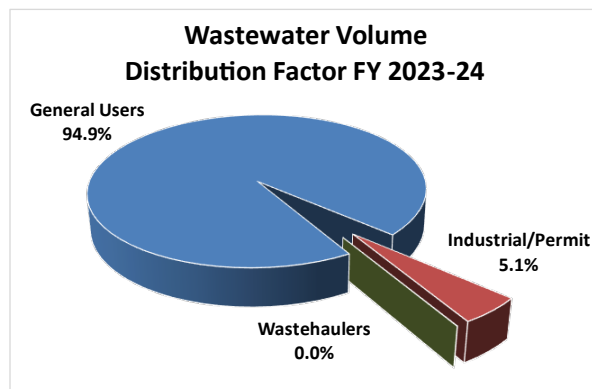
Table 1-6. Summary of the Revenue Requirement Allocation (\$000,000s)

Description	Total	Volume	Strength	
			BOD	TSS
Allocation of Revenue Requirement				
Expense Allocation	\$209.89	\$49.07	\$63.16	\$97.66
Capital Funded Through Rates	296.77	127.52	80.72	88.54
Net Transfers	(77.85)	(44.28)	(19.34)	(14.23)
Debt Service	68.61	36.85	18.30	13.46
Total Revenue Requirement	\$497.43	\$169.16	\$142.85	\$185.43
Percent Allocation of Revenue Requirement	100%	34%	29%	37%

Distribution of Costs – The first step in the distribution of the revenue requirement is to establish, or identify, customer classes or groups of customers. OC San has three basic customer groups that this Study is designing rates, General Users, Industrial/Permit Users, and Wastehaulers. The General User group is the largest customer group, and it can be further broken down into various user types. All Single family homes are charged a fixed rate which represents one EDU. All other customers within the General User group are charged a fixed percentage of the EDU per 1,000 square feet. The percentage per 1,000 square feet charge is based on the assumed flow and strength for each non single family customer as compared to a single family customer/EDU. Permit/Industrial Users are customers who’s wastewater exceeds strength and flow limits requiring a special permit and are charged by volume and rate per pound for BOD and TSS. Wastehaulers are charged a per gallon rate reflecting the cost of treatment and administrative charges.

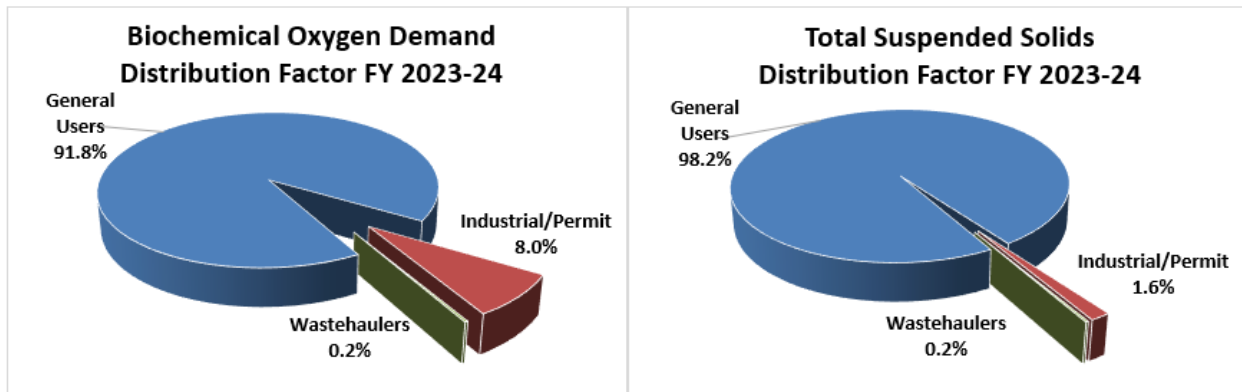
Once the allocation of the revenue requirement process is complete, and the customer groups have been defined, the allocated costs are distributed to each customer group. OC San’s allocated costs were distributed to the various customer groups using the following distribution methods and factors.

- Volume Distribution Factor:** As noted above, volume-related assets and costs vary with the total flow of wastewater to the treatment plant. Therefore, the volume distribution factor is based the projected volume of wastewater for each customer class of service for FY 2023-34. The determination of flow by customer type was determined based on available customer and system information. General User flow is not specifically known by OC San, given wastewater is not metered, and the customers are not direct OC San customers.



However, other customer types such as, Industrial/Permit users, wastehauler, SAWPA and IRWD flows are known or reasonably able to be estimated. General user flows were determined by subtracting the know flow of other customer types from the known flow received at the treatment plants. The volume distribution factor is used to distribute allocated volume related costs and to establish the volume unit cost that are ultimately used in the rate design step in this analysis. A more detailed discussion of the specific costs which are applied to these base distribution factors is contained in the following subsection of this report.

- Strength Distribution Factors:** Strength is the level of pollutants in the wastewater. As noted, for OC Sans Study the main pollutants of concern are BOD and TSS. BOD is essentially the measurement of organic pollutants in the wastewater, while TSS is the amount of undissolved matter suspended in the wastewater. Both pollutants are typically measured in as the amount of dry weight, in milligrams, contained within in a volume of water, such as a liter. Different types of OC San’s customers have different concentrations of BOD and TSS. The goal of any wastewater rate is to design it in a way that recovers the proportionate share of volume and strength costs.



According to the 1998 State Water Resource Control Board (SWRCB) in California, Revenue Program Guidelines Appendix G a single family residence has a BOD or TSS concentration between 175 to 250 milligram per liter and 100 to 200 gallons per day. Since the 1998 SWRCB Revenue Program Guidelines OC San’s wastewater customer characteristics have changed. Specifically, water usage per capita has decreased as a result of water conservation efforts, water efficient appliances, and other changes in customer behavior. The result in reduction in per capita water use for a wastewater utility is less water being received at OC San’s treatment plants. However, generally speaking, the amount of BOD and TSS remains the same even as the flow is reduced. The result in lower volume but same amount of pollutants is higher concentration of BOD and TSS. Based on the total pounds removed at the plants, the known pounds from industrial and wastehauler customers, the projected pounds for the general user class was calculated.

1.5.3 Major Assumptions of the Cost of Service Analysis

A number of key assumptions were used within OC San’s cost of service analysis. Below is a brief discussion of the major assumptions used.

- The test period used for the cost of service analysis was FY 2023/24. The revenue and expense data for this time period was previously developed within the revenue requirement analysis.



- The allocation of plant was based on the prior studies and information developed by OC San. HDR wastewater engineering staff reviewed the allocation of plant in service from these prior studies and confirmed that it is an appropriate and valid means of allocating individual plant assets.
- The prior study and information also formed the basis for allocating expense and was also reviewed by HDR and deemed a valid method of allocating expense and was used for this study.
- Capital funded from rates was allocated based on the overall allocation of capital projects.

1.5.4 Cost of Service Results

In summary form, the cost of service analysis began by functionalizing OC San’s asset and expenses. The functionalized assets and expense were then allocated to volume, BOD, and TSS. The distribution of costs reflects the facilities and costs allocated to each customer class based on their respective benefit. Based on the allocated costs, the next step in the cost of service is to develop average unit costs for rate design purposes. Average unit costs are simply the allocated volume cost divided by total volume, or total allocated strength cost divided by pounds of BOD or TSS. Table 1-7 is the system average unit cost for volume and strength.

Table 1-7. Summary of the Unit Costs

Description	Volume	Strength	
		BOD	TSS
Allocated Revenue Requirement (\$1,000,000s)	\$97.08	\$109.18	\$141.96
Unit, (MG 1,000 Pounds BOD/TSS)	55,375	143	165
Unit Cost (\$/1,000 Gallon \$/Pound BOD/ TSS)	\$1.75	\$0.76	\$0.86

The unit cost in Table 1-7 is a system average unit cost as a whole. The exception is Wastehaulers that have a lower volume unit cost because they do not use the conveyance system facilities which are a substantial portion of the volume costs. Wastehauler BOD and TSS unit cost are the same as the overall system costs.

1.5.5 Cost of Service Conclusions and Recommendations

HDR has closely examined the results of the cost of service and is of the professional opinion that the results are reflective of an proportional distribution of costs. HDR is of the opinion that OC San should follow the results of the cost of service in making the final rate adjustments.

1.5.6 Summary of the Cost of Service Analysis

This section of the report has provided an analysis of the cost of service developed for OC San. This analysis was prepared using generally accepted cost of service techniques.



1.6 Development of the Wastewater Rate Designs

The final step of the comprehensive wastewater rate study process is the design of proposed rates to collect the desired levels of revenues, based upon the results of the revenue requirement and cost of service analyses. Each of the three customer groups in the cost of service have different rates. General users are charged a rate per EDU, which is a rate based on an average single family home. There are over one hundred other general user rates charged a percentage of the EDU on a per 1,000 square feet basis. The percentages used for other General Users rates is a percent that reflects the customer types usage compared to a single EDU. For example a multifamily housing unit is 70% of an EDU while a bowling alley is 112% of an EDU. In both cases, the percentage reflects the flows and strength of each customer type as compared to a single family home/EDU. Industrial/Permit customers are customers who wastewater volume or concentrations are outside the parameters of the general user rates. These customers are charged individual rate for volume, BOD, and TSS. Wastehaulers are charged a rate per gallon for treatment and an administrative charge.

1.6.1 Review of the Overall Rate Adjustments

As indicated in the revenue requirement analysis, it is projected that OC San will need to adjust the overall level of revenues to meet the projected O&M and capital improvement needs. There are considerations that should be evaluated during the rate design step of the cost of service analysis. A few of these considerations are continuity of rate philosophy, impact to customers, and sufficient revenue generation. The rate design has followed the cost of service for General Use customers. It was determined through discussions with OC San staff to phase in the adjustments to the Industrial/Permit User rate over the 5 year rate adjustment period. The phase in was done to reduce the impact to the Industrial/Permit user while still getting the rate to the appropriate level by the end of the 5 year period. Provided below in Table 1-8 is a summary of the proposed rates by customer group.

Table 1-8. Summary of the Proposed Revenues and Adjustments to Rates (\$1,000,000)

Description	Present Rate Revenues	Proposed Revenues	\$ Difference	% Difference
General User	\$321.50	\$331.69	\$10.19	3.2%
Industrial/Permit User	14.20	14.94	0.74	5.2%
Wastehaulers	0.75	0.75	0.00	0.0%
Total	\$336.45	\$347.38	\$10.93	3.2%

1.6.2 General User Rates

The General User group is the largest of OC San’s customer groups with single family customers comprising nearly 50% of all of general user revenue. Multifamily customers are several different types of users including duplex, triplex, and customers with more than three units. The Non-residential customers includes a wide range of customer types covering specific types of establishments.

For General Users as single family is used as the basis for the definition of an EDU, or the billing unit for all other customer types. Table 1-9 contains the current and proposed rates for Single family and Multi-family customers.

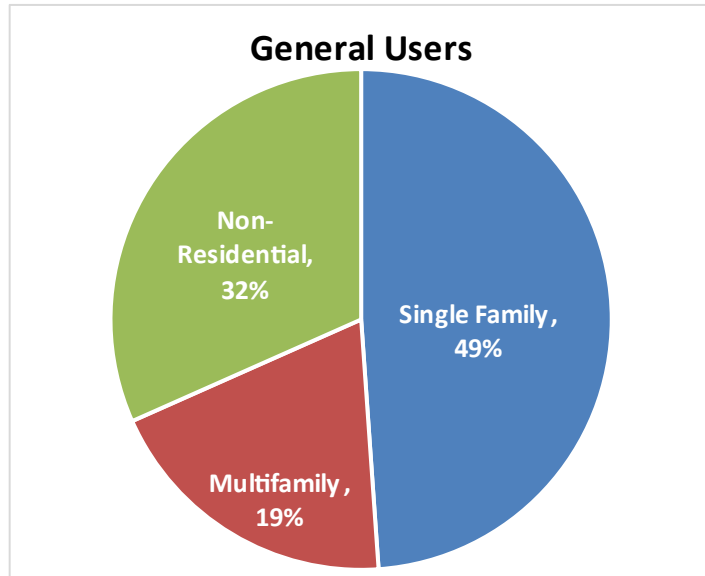


Table 1-9. Single Family and Multi-family Rates

	Current Rate	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Single Residence	\$347.00	\$358.00	\$371.00	\$384.00	\$397.00	\$411.00
Multifamily per 1,000 square feet	242.90	250.60	259.70	268.80	277.90	287.70

All other customer types are measured as and equivalent to a single family as a percent per one thousand square feet.

1.6.3 Industrial/Permit User Rates

OC San has approximately 300 customers who are charged rates for their actual volume of wastewater and the pounds of BOD and TSS treated. These customers are charged individual rates as the flows and pounds vary between customers and they generally have higher average volume and strength of wastewater. Table 1-10 show the current and projected rates for the Industrial/Permit users.

Table 1-10. Industrial/Permit User

	Current Rate	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Volume (\$/Million Gallons)	\$1,601.28	\$1,676.09	\$1,754.41	\$1,836.37	\$1,922.17	\$2,011.98
Biochemical Oxygen Demand (\$/1,000 lbs)	667.99	705.08	744.23	785.55	829.17	875.21
Total Suspended Solids (\$/1,000 lbs)	777.00	815.51	855.92	898.34	942.86	989.58



The results of the cost of service analysis showed that Industrial/Permit user rates should be increased substantially. Given the impact this would have on individual customer bills, it was determined that the rates would be phased in over the five year rate setting period is proposed. The rate transition results in an approximately 5% average annual rate increase for Industrial/Permit users.

1.6.4 Wastehauler Rates

Wastehaulers are unique among OC San’s customer in that they are not served by the conveyance system but rather bring their waste to OC San for treatment. The concentration of Wastehauler wastewater is generally much higher than a typical residential customer. OC San has set the rate for Wastehaulers on a per gallon basis. there are two main components that make up the Wastehauler rate, the treatment costs and the cost to administratively process the manifests generated per truckload. Table 1-11 shows the calculation of the Wastehauler Rates.

Table 1-11. Wastehauler Rates

Description	Costs Component	Gallons	\$ Per Gallon
Allocated Treatment Cost			
BOD	\$270,336		
TSS	305,665		
Volume	6,557		
Total Allocated Cost	\$582,558	13,360,000	\$0.04
Wastehauler Administrative Charges			
Administrative Cost per Manifest	\$101		
Number of Manifests	X 6,832		
Total Administrative Costs	\$690,032	13,360,000	\$0.05
Total Wastehauler Charge per Gallon			\$0.09

The Wastehauler rate was kept flat for the five year rate setting period. Table 1-12 provides the Wastehauler rates.

Table 1-12. Wastehauler Rates per Gallon

	Current Rate	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Treatment Charge	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04
Administrative Charge	0.05	0.05	0.05	0.05	0.05	0.05
Total Wastehauler Rate	\$0.09	\$0.09	\$0.09	\$0.09	\$0.09	\$0.09

Wastehaulers outside OC San’s service area are charged a capital charge that is based on the annexation fee and the CFCC amortized over 50 years which equals \$0.23 per gallon in addition to the rates in Table 1-12.



1.7 Summary of Wastewater Rate Study

The wastewater rates, as proposed herein, are cost-based and were developed using generally accepted rate making methods and principles. The proposed rates have been developed based on the results of the revenue requirement and cost of service analysis. The implementation of proposed rates should generate the additional revenue needed to meet the projected O&M and capital needs.

1.8 Rate Survey

There are many factors that go into a utility's cost to serve its customers and their resulting rates. A few of those factors include the relative size of the utility, density of customers, if it is primarily a regional system, age of the system, type treatment process, availability of other revenue such as property tax and cost of borrowing. OC San is unique in many ways, it largely is a regional wastewater that does not directly serve many of its customers with the exception of a small subset of customers. Table 1-13 provides annual rates for wastewater collection and/or treatment utilities and a few key characteristics for comparison purposes.

Table 1-13. Survey of Other Wastewater Utilities

	Annual Wastewater Bill	Average Day MGD	Population Served	
Napa Sanitation	\$739	10	86,250	Regional
Eastern MWD	408	43	870,000	
East Bay MUD	475	63	740,000	Regional
San Francisco PUD	1,270	80	1,840,000	
Sacramento Regional County Sanitation District	444	124	1,600,000	Regional
Orange County Sanitation District	358	181	2,600,000	Regional
City of San Diego	687	180	2,500,000	
Los Angeles Sanitation (City)	636	400	4,000,000	
Los Angeles County Sanitation District	226	510	5,000,000	Regional



2 Capital Facility Capacity Charges

2.1 Capital Facility Capacity Charge Study

2.1.1 Introduction

The purpose of wastewater Capital Facility Capacity Charges (CFCCs) is to provide for payment of an equitable share of capital costs attributable to new customers connecting to, or existing customers requesting additional capacity on, OC San's wastewater system. By establishing cost based CFCCs, OC San attempts to have growth pay for growth by having new customers pay their equitable share of the infrastructure already in place, which has been funded by existing customers, and which provides the available capacity to serve new customers (growth), and future infrastructure necessary to serve new customers.

The wastewater CFCC was last reviewed in 2017. Industry best practice recommends CFCCs should be adjusted annually to reflect changes in construction costs (i.e., inflation), and to update the CFCCs whenever comprehensive planning documents for the system have been updated, or significant infrastructure projects have been completed. OC San most recently updated the wastewater CFCCs based on an inflationary index as of July 1, 2022.

2.1.2 CFCC Study Overview

The wastewater CFCCs are calculated in conformance with California legal requirements, generally accepted industry standard practices, and are based on OC San's specific wastewater system planning and design criteria. CFCCs are based on the existing infrastructure, and if applicable future capital improvements needed to serve growth, divided by the number of equivalent dwelling units (EDUs) that will be served by the system capacity. A component buy-in (existing) and expansion (future) approach is often taken in developing the CFCCs because each component can have different planning and design criteria.

OC San has previously used the combined methodology for calculating the wastewater CFCCs which adds both components (buy-in and expansion) approach together. The Water Environment Federation (WEF) Manual of Practice No. 271 discusses that the combined methodology is used when the wastewater system has available capacity in the existing wastewater system and future capital improvements are needed to serve new customers. Given this is the case for OC San, this Study and analysis will focus on a "combined" approach (existing + future).

The calculations must also take into account the financing mechanisms of capital improvements. CFCCs must be implemented according to the new connections proportionate share of the wastewater system. This way, the CFCCs are related to the new customer's share of the wastewater system and infrastructure in place as well as their proportionate share of the future infrastructure required to serve them.

OC San, as a matter of policy, may charge any amount up to the calculated and cost-based CFCC but not over that amount. Charging an amount greater than the net allowable CFCC would not meet the

¹ Water Environment Federation Manual of Practice No. 27, 4th Edition, p. 206-211.



practical basis of charging cost-based charges that are an equitable share related to the benefit derived by the customer.

OC San currently implements and assesses the wastewater CFCC based on the number of bedrooms for residential customers, and on a per 1,000 square feet basis for non-residential, residential accessory structures, and accessory dwelling units. One EDU equals the base charge of a single-family, 3+ Bedrooms. Customers with more bedroom units are charged by the number of additional bedroom units to determine the number of EDUs. Table 2-1, below, provides the present wastewater CFCC for OC San.

Table 2-1. Present Capital Facilities Capacity Charge^{(1),(2)}

Use Category	Ratio	Present CFCC ^{(1),(2)}
Single Family Residential (SFR), per unit		
5+ Bedrooms	1.39	\$7,949
4+ Bedrooms	1.19	6,806
3+ Bedrooms, *Base Charge	1.00	5,719
2+ Bedrooms	0.81	4,633
1+ Bedrooms	0.62	3,545
Multi-Family Residential (MFR)		
4+ Bedrooms	1.08	\$6,177
3+ Bedrooms	0.89	5,090
2+ Bedrooms	0.70	4,004
1+ Bedrooms	0.50	2,859
Studio	0.32	1,829
Non-Residential, Residential Accessory Structures, and Accessory Dwelling Units, Per 1,000 square feet		
Low Demand		\$360
Average Demand		2,234
High Demand		5,309

(1) Equivalent dwelling unit for residential is 3+ bedroom units as the base charge.

(2) Present CFCC as of July 1, 2022.

It should be noted that IRWD is not required to pay CFCCs based on a contractual agreement. IRWD provides funding to OC San for construction of costs of certain wastewater collection, transmission, treatment, and disposal facilities to be used by IRWD.



2.1.3 CFCC Calculation

There are various approaches that can be used to establish CFCCs which ultimately depend on the available capacity in the utility (i.e., ability to meet future customer demands). The Water Environment Federation (WEF) Manual of Practice No. 27, Financing and Charges for Wastewater Systems, Fourth Edition discusses three generally accepted tap fees methods:

- The **buy-in method** is based on the value of the existing system's capacity. This method is typically used when the existing system has sufficient capacity to serve new development now and into the future.
- The **incremental cost method** is based on the value or cost to needed to add to the existing system to serve additional customers. This method is typically used when the existing system has limited or no capacity to serve new development now and into the future.
- The **combined approach** is based on a blended value of both the existing and future costs needed to serve a new customers. This method is typically used where some capacity is available in the existing system, but future projects are needed in other parts (e.g., wastewater lift station) to serve new development at some point in the future.

The combined approach was used for OC San's wastewater CFCC calculation. The wastewater system has specific expansion needs to serve new customers. Therefore, the combined approach is the approach that best fits OC San's expansion of facilities given the impacts of growth outlined in the Master Plan. Therefore, the existing and future component cost per EDU is determined, and the cost per EDU for each existing and future component is added together for a combined total.

Within the generally accepted CFCC methodologies,² there are a number of different steps used to establish cost-based and equitable CFCCs. These steps are as follows:

- **Step 1** – Determination of system planning criteria
- **Step 2** – Determination of equivalent dwelling units (EDUs)
- **Step 3** – Valuation of system component costs
- **Step 4** – Determination of any credits

Step 1 – Determination of System Planning Criteria

The first step in establishing the CFCC is the determination of the system planning criteria. This implies calculating the amount of capacity required by a single-family residential customer, or one EDU. The use of an adopted facility plan or master plan for the utility provides the basis for the CFCC system planning criteria. These planning documents provide the rational planning basis and criteria for the facilities and investment needed to operate and maintain the system properly and adequately. Generally, for a wastewater system the planning criterion is the average flow per EDU. The OC San standard specifications in the National Pollutant Discharge Elimination System (NPDES) permit, Master Plan, and Capital Improvement Plan are the documents and information that are referenced

² Methodologies established in industry documents referenced as System Development Charges for Water, Wastewater, and Stormwater Facilities, by Arthur C. Nelson; AWWA M-1 Manual, 7th Edition and WEF Manual of Practice No. 27, Financing and Charges for Wastewater Systems, Fourth Edition.



for the determination of the system planning criteria. Table 2-2, below, provides the planning data for OC San based on their NPDES permit.

Table 2-2. CFCC – Planning Data

Treatment Plant Permit Capacity	Permit Rated Capacity Dry Weather Flow (MGD)
Plant 1 Fountain Valley	182.00
Plant 2 Huntington Beach	<u>150.00</u>
Total Permit Dry Weather Flow ⁽¹⁾	332.00
SAWPA Rights ⁽²⁾	(30.00)
RA 14 ⁽²⁾	(10.00)
Urban Dry Weather Runoff ⁽²⁾	<u>(10.00)</u>
Total	282.00

(1) NPDES Order no. R8-202, NPDES No. CA01, dry weather flow of 332 MGD.

(2) 2017 Master Plan, Chapter 7, page 7-5, Table 7-1; Maximum SAWPA, RA14 (IRWD), Urban Runoff. SAWPA has the rights to purchase up to 30 MGD, SAWPA has currently only purchased 17 MGD.

Step 2 – Determination of Equivalent Dwelling Unit (EDU)

The next step is the determination of the EDUs. An EDU provides a “common denominator” for assessing impact on a utility system. The determination of the total system EDUs is an important calculation in that it provides the linkage between the amounts of infrastructure necessary to provide service to a set number of customers. This implies that if the system is designed to provide service for demands up to the year 2035, then the infrastructure costs are divided by the total EDUs projected to be connected by 2035 to determine the equitable and proportionate cost per EDU.

System planning criteria are used to establish the capacity needs of an equivalent dwelling unit. The average day flow in gallons per EDU is 230 gallons per EDU based on the Master Plan planning assumption for 2035. This is based on Master Plan of 75 gallons per person per day and the number of persons per household of 3.1 based on current Census information ($75 \times 3.1 = 230$ gallons per EDU). The system capacity in MGD is divided by the average day flow per EDU to estimate the total EDUs. The current system average day flow is 221 MGD reflecting existing EDUs of 962,963 ($221.00 \div 230 = 962,963$ EDUs). The future EDUs based on total system capacity of 282 MGD is 61 MGD ($282 \text{ MGD} - 221 \text{ MGD existing} = 61 \text{ MGD}$) or 265,795 future EDUs ($61.00 \div 230 = 265,795$ EDUs). A summary of the existing, future and total EDUs is presented in Table 2-3.



Table 2-3. CFCC – Equivalent Dwelling Units

EDU Calculation	Total Capacity (MGD)(1)	Average Daily Flow in Gallons per EDU(2)	Total EDUs	% EDUs
Equivalent Dwelling Units – Existing				
Residential			630,912	
Commercial			292,199	
Industrial			<u>39,854</u>	
Equivalent Dwelling Units Existing	221.00	230	962,963	
Equivalent Dwelling Units – Future				
Residential			174,143	
Commercial			80,652	
Industrial			<u>11,000</u>	
Equivalent Dwelling Units Future	61.00	230	265,795	
Total	282.00	230	1,228,758	
Summary				
Residential			805,055	65.5%
Non-Residential			<u>423,706</u>	<u>34.5%</u>
Total			1,228,758	100.0%

- (1) Total permit capacity from previous table and the existing capacity of 2022 average flow at plant from 2022 wastewater rate study.
- (2) 2017 Master Plan, Chapter 7, page 7-3, average daily flow of 230 for 2035.

It is important to note the percentage of EDU split between Residential and Non-Residential of 65.5% and 34.5% respectively, will be used later to convert EDUs to a square footage basis for Non-Residential. Given the development of the wastewater system EDUs the focus shifts to the calculation of the CFCC for each component. This aspect of the analysis is discussed in the next steps below.

Step 3 – Valuation of System Component Costs

The next step of the analysis is to review the major functional system infrastructure to determine the CFCC for the wastewater system. In calculating the CFCC for OC San, existing components, debt service for existing facilities net of capital fund reserves, and future capital improvements relating to expansion were included. The methodology used to calculate each of these components is described below.

Existing or Buy-in Component

To calculate the value of the existing assets for the CFCC, OC San’s methodology considered the original cost of each asset. OC San provided an asset listing for the various existing components and their installation dates. This data was reviewed in this analysis by OC San staff and HDR for elimination of non-backbone infrastructure such as equipment and vehicles, and finally elimination of assets that were not OC San paid and were instead funded by grants or developer contributions. A replacement cost new less depreciation method was used. To accomplish this, the original cost of each asset was



escalated to current, September 2022 dollars, based on the Construction Cost Index (CCI) for the Los Angeles area published in the Engineering News-Record (ENR). Based on the installation date and an estimated useful life, provided by OC San for each asset, the replacement cost for each asset was depreciated. The total net, CFCC eligible asset value as of June 2022, totaled \$2.64 billion. Further detail can be seen on Exhibit 7 of the Technical Appendix.

In addition, construction work in progress as of June 2021 was added in the amount of \$407 million. This added to the existing assets at RCNLD totals \$3.0 billion (\$2.64 billion assets + \$407 million CWIP = \$3.0 billion total). Further detail on CWIP can be seen on Exhibit 4 of the Technical Appendix.

Reserves

The capital fund reserves are considered to be asset valuation adjustments to the overall wastewater system since they are infrastructure costs that relate to the wastewater system as a whole. This approach assumes that OC San could retire any outstanding debt with their reserves on hand. The total capital fund reserve, as of June 2021 is \$961 million. Further detail can be seen on Exhibit 6 of the Technical Appendix.

Future Component

An important requirement for a CFCC study is the connection between the anticipated future growth on the system and the required facilities needed to accommodate that growth. For purposes of this study, OC San's most current Capital Improvement Plan (CIP) for the ten-year planning period of 2023 to 2032 was provided by OC San. This included construction work in progress projects that were not included as booked assets in 2021 and are shown in the CIP plan under years 2021 and 2022. It should be noted that the future components are in today's dollars (2022). Exhibit 8 of the Technical Appendix contains the details of this portion of the CFCC.

The total future capital projects totaled \$3.6 billion. The total future component of \$3.6 billion divided by total EDUs of 1,228,758 results in \$2,944 per EDU for the future component ($\$3.6 \text{ billion} \div 1,228,758 \text{ EDUs} = \$2,944 \text{ per EDU}$). The capital improvement listing can be seen on Exhibit 8 of the Technical Appendix.

Step 4 – Determination of Any Credits

The last step in the calculation of the CFCC is the determination of any credits. The credit considers the method used to finance infrastructure on the system so that customers are not paying twice for infrastructure. The double payment can come in through the imposition of a CFCC and then the requirement to pay debt service within a customer's wastewater rates.

This component accounts for the outstanding debt principal on existing assets. By segregating the debt service out, the cost can be clearly identified and calculated appropriately. To avoid double-counting of the assets financed with debt, the future principal associated with those assets is deducted from the existing infrastructure value.

OC San has several outstanding debt issues from 2010 to the recent 2022 Refunding issue. The total outstanding debt principal is \$789 million or \$643 per EDU debt credit ($\$789 \text{ million} \div 1,228,758 \text{ EDUs} = \$643 \text{ per EDU debt service credit}$). Further detail can be seen on Exhibit 5 of the Technical Appendix.



2.1.4 CFCC Summary of Net Allowable Calculation

Based on the sum of the component costs calculated above, the allowable wastewater CFCC was determined. “Allowable” refers to the concept that the calculated CFCC is OC San’s cost-based CFCC. OC San, as a matter of policy, may charge any amount up to the allowable CFCC, but not over that amount. Charging an amount greater than the allowable CFCC would not meet the practical basis of a cost-based CFCC. Table 2-4 shows a summary of the allowable CFCC. Details are provided in Exhibit 3 of the Technical Appendix.

Table 2-4. Summary of CFCC per EDU

Component	Total CFCC
Existing Wastewater System (Replacement Cost Less Depreciation)	\$2,644,655,192
Construction Work in Progress	407,684,294
Less: Outstanding Debt Principal	(789,750,000)
Plus: Reserves	961,618,916
Future Wastewater Infrastructure	<u>3,617,505,992</u>
Net Existing and Future Infrastructure	\$6,841,714,393
Total Existing and Future EDUs	1,228,758
Total Capital Facilities Capacity Charge per EDU⁽¹⁾	\$5,568

(1) One EDU equals 3+ Bedrooms.

This calculated wastewater CFCC of \$5,568 compares to OC San’s current CFCC of \$5,719 per EDU, or a decrease of \$151. The \$5,568 per EDU reflects one (1) equivalent dwelling unit which is a 3+ bedroom unit. The small decrease should not be compared to exact cost since this analysis is based on the value of the current system in today’s dollars. OC San adjusts the CFCC annually based on an ENR index as of July each year. It is our recommendation that OC San hold the CFCC at the current level until next year’s ENR update.

2.1.5 CFCC Implementation

OC San implements the Non-Residential CFCC based on 1,000 square feet basis. This is based on one EDU equaling 1,581.52 square feet. Table 2-5 develops the CFCC per EDU converted to 1,000 square feet for non-residential.



Table 2-5. CFCC per EDU Converted to 1,000 Square Feet

Component			Total CFCC
Net Existing and Future Infrastructure			\$6,841,714,393
Residential Percentage of EDUs			65.5%
\$ Percentage Share			\$4,482,539,528
Total Residential EDUs			805,055
Dollars per EDU CFCC			\$5,568
Non-Residential Percentage of EDUs			34.5%
\$ Percentage Share			\$2,359,19,075
Total Non-Residential EDUs ⁽¹⁾		423,706	
Assumption of Square Foot per EDU ⁽²⁾	X	1,581.52	
Non-Residential Square Footage (1,000 sq. ft.)	=	670,099	670,099
Dollars per 1,000 square feet CFCC			\$3,521

(1) Non-Residential EDUs calculated in planning data. See Table 2-3 of this report.

(2) OC San One EDU equals 1,581.52 square feet.

Table 2-6 below summarizes the CFCC for present and calculated for Residential and Non-Residential. As shown in the table the overall adjustment for Residential is a slight decrease which has been recommended to hold at the current level until next year’s annual ENR adjustment. However the Non-Residential shows an increase. This is due to the implementation of the CFCC in the past. This study updates the CFCC for Non-Residential customers that reflects cost based levels.



Table 2-6. Present and Calculated Capital Facilities Capacity Charge

Use Category	Ratio	Present CFCC ⁽¹⁾⁽²⁾	Calculated CFCC ⁽³⁾	% Change
Single Family Residential (SFR), per unit				
5+ Bedrooms	1.39	\$7,949	\$7,739	(2.6%)
4+ Bedrooms	1.19	6,806	6,626	(2.6%)
3+ Bedrooms, *Base Charge	1.00	5,719	5,568	(2.6%)
2+ Bedrooms	0.81	4,633	4,511	(2.6%)
1+ Bedrooms	0.62	3,545	3,452	(2.6%)
Multi-Family Residential (MFR)				
4+ Bedrooms	1.08	\$6,177	\$6,014	(2.6%)
3+ Bedrooms	0.89	5,090	4,956	(2.6%)
2+ Bedrooms	0.70	4,004	3,898	(2.6%)
1+ Bedrooms	0.50	2,859	2,783	(2.6%)
Studio	0.32	1,829	1,781	(2.6%)
Non-Residential, Residential Accessory Structures, and Accessory Dwelling Units, Per 1,000 square feet				
Low Demand	1.08	\$360	\$242	(32.8%)
Average Demand	0.89	2,234	1,485	(33.5%)
High Demand	0.70	5,309	3,521	(33.7%)

(1) 1 equivalent dwelling unit for residential is 3+ bedroom units as the base charge.

(2) Present CFCC as of July 1, 2022.

(3) Combined methodology established in Water Environment Federation (WEF) Manual of Practice No. 27, 4th Edition, p. 206-211.

Based on the recommendation to hold the Residential at current level until next year’s ENR analysis, Table 2-7 shows the proposed 5-year adjustments for the CFCC.

Table 2-7. Proposed Capital Facilities Capacity Charge^{(1),(2)}

CFCC	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Residential 3+	\$5,719	\$5,719	ENR	ENR	ENR	ENR
Non-Residential						
Low Demand	\$360	\$242	ENR	ENR	ENR	ENR
Average Demand	\$2,234	\$1,485	ENR	ENR	ENR	ENR
High Demand	\$5,309	\$3,521	ENR	ENR	ENR	ENR

The wastewater CFCC developed and presented in this section of the report are based on the planning and engineering design criteria of OC San’s wastewater system, the value of the existing assets, future projects and generally accepted ratemaking principles. Consistently updating the charge annually based on the Engineering New Record Construction Cost Index 20-City Average and updating the



CFCC on a routine basis will continue to create equitable and cost-based charges for new customers connecting to OC San’s wastewater system.

2.2 Supplemental Capital Facility Capacity Charge Study

OC San’s current industrial use ordinance, determines if additional CFCCs, or Supplemental Capital Facility Capacity Charge (SCFCC) can be imposed on industrial users who place larger than average demands on the wastewater system. The SFCC is calculated on the same methodology as the CFCC. OC San’s total existing and future asset value is divided by the total number of EDUs served. The existing and future asset values allocated between Flow, BOD, and TSS in the CFCC analysis are used to develop the SCFCC. The details of the total existing and future value of \$6.8 billion allocated between Flow, BOD, and TSS can be found in Exhibit 3 of the Technical Appendix. The allocated value of Flow, BOD, and TSS are amortized over a thirty-year period at an interest rate equal to the current Bond Buyer 20-Bond Index interest rate. The SCFCC calculation is shown in Table 2-8. The SCFCC details can be seen on Exhibit 2 of the Technical Appendix.

Table 2-8. Calculated Supplemental Capital Facilities Capacity Charge^{(1),(2)}

Use Category	Total ⁽¹⁾	Flow (gpd)	BOD (mg/L)	TSS (mg/L)
A Value of Existing/Future Assets	\$6,841,714,393	\$3,319,186,756	\$1,880,886,372	\$1,641,641,266
B Total EDUs	1,228,758	1,228,758	1,228,758	1,228,758
C SCFCC per EDU (A ÷ B)	\$5,568	2,701	1,531	1,336
D 30 Year Amortized SCFCC ⁽²⁾		\$144	\$82	\$71
E EDU Basis		185	288	290
			0.4481	0.4503
		gpd	lbs/day	lbs/day
F SCFCC (D ÷ E ÷ 365 Days)		\$0.002140 per gallon	\$0.500628 per lb.	\$0.434827 per lb.

(1) Calculated CFCC based on "Combined" methodology established in Water Environment Federation (WEF) Manual of Practice No. 27, 4th Edition, p. 206-211.

(2) Bond Buyer’s 20 Bond Index as of July 2022 at a rate of 3.4% for 30 years.

OC San will continue to review the SCFC on a regular basis to review potential capital cost shifts and to maintain SCFCC rate payer equity. Table 2-9 shows the comparison of the present SCFCC and the calculated SCFCC.



Table 2-9. Present and Calculated Supplemental Capital Facilities Capacity Charge^{(1),(2)}

Use Category	Present SCFCC ⁽¹⁾	Calculated SCFCC ⁽³⁾	\$ Change	% Change
Daily Charge⁽²⁾				
Flow	\$0.001996	\$0.002140	\$0.000144	7.2%
BOD	\$0.481210	\$0.500628	\$0.019418	4.0%
TSS	\$0.270840	\$0.434827	\$0.163987	60.5%

(1) Present SCFCC Ordinance No. OCSD-57, Table D, for July 1, 2022.

(2) 2.10 (i) an increase of discharge flow of 25,000 gallons per day (gpd), or 25% per day over its established baseline whichever is less; or (ii) an increase of either BOD or SS discharge of 150 pounds each per day, or 25% each per day, whichever is lesser, over its established baseline authorization. The daily averages will be based on the daily discharges for a year, utilizing discharge records and reports of the discharge or the District.

The large change to TSS was reviewed and is a result of several factors, first the addition of the Ground Water Replenishment asset shifted costs between flow and BOD and TSS, secondly previous studies did not adopt, or transition to, the calculated level for TSS. Given the large change, Table 2-10 shows the recommended transition of the TSS SFCC over the upcoming five year period.

Table 2-10. Present and Calculated Supplemental Capital Facilities Capacity Charge^{(1),(2)}

SCFCC	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Flow	\$0.001996	\$0.002140	ENR	ENR	ENR	ENR
BOD	\$0.481210	\$0.500628	ENR	ENR	ENR	ENR
TSS ⁽¹⁾	\$0.270840	\$0.303640	\$0.336440	\$0.369240	\$0.402040	\$0.434830

(1) All 2022-23 rates are as of July 1, 2022; 2023-24 Flow and BOD are the calculated rate.

(2) For TSS, the difference between 2027-28 and 2022-23 was spread over 5 year period.

2.3 Annexation Charge Study

OC San does not receive any tax exchange from annexed properties because of an agreement with the County of Orange. The annexation charge is established through Ordinance No. OCSD-33, beginning January 1, 2004 to be paid for annexation to OC San for wastewater services. Table 2-11 shows the present Annexation Charge.

Table 2-11. Present Annexation Charge⁽¹⁾

Revenue Area	\$ per Acre
Consolidated Revenue Area Nos. 1-13	\$4,235 per Acre
Revenue Area No. 14	Not Applicable

(1) Present Annexation Charge Ordinance No. OCSD-33.

The collection of the annexation fee will not result in any specific project and will not result in a direct physical change in the environment. The annexation fees were established based on a rational basis between the fees charged each property that is annexing, and the service and facilities provided to each annexed property by OC San.



In order to keep up with inflation of costs since the implementation of the charge in 2004, the proposed annexation charge has been updated to reflect annual Consumer Price Index (CPI) changes from 2004 to present day of 2022. The LA CPI was used for the calculation resulting in an increase of the Annexation Charge from \$4,235 per acre to \$6,767 per acre. Table 2-12 details the calculation.

Table 2-12. Present and Calculated Annexation Charge

Revenue Area	\$ per Acre
Jan. 2004 LA Consumer Price Index	188.50
Jan. 2022 LA Consumer Price Index	301.21
LA CPI Factor 2004 to 2022 ($301.21 \div 188.50 = 1.60$)	1.60
2004 Consolidated Revenue Area Nos. 1-13	\$4,235 per Acre
Multiplied by LA CPI Factor	1.60
2022 Revenue Area No. 14	\$6,767 per Acre



3 Rebate Program

3.1 Introduction

OC San provides its non-residential general user customers the opportunity to apply for a water efficiency rebate or reduced charge. The water efficiency rebate, or reduced charge, is a reduced rate that represents the difference between the calculated charge and the actual flow for the customer based on past water consumption. Customers may request a rebate from prior billing periods and or request a reduced rate going forward. Verifiable proof, such as water bills of the reduced water usage must be provided to the OC San General Manager or his/her designee. The bill charged to any customer seeking a rebate or reduced future rate cannot be less than that of the single family rate. The current ordinance also allows for a reduction in the BOD and TSS component of the rate if it is significant and with verifiable proof to the satisfaction of the OC San General Manager. Once the reduction in billed volume or BOD or TSS is established the customer can lock that reduction in for three years.

3.2 Analysis

OC San's customers benefit from the rebate program to achieve equitable rates for customers who do not conform to the flow and concentration of pollutants per 1,000 square feet per EDU of their user group. An alternative rate design often used is a volume-based rate such as the City of Los Angeles Sanitation department's rates. This type of rate design avoids the flow-based differences among customer groups by utilizing the City's water meters as a surrogate for measuring wastewater flow. This type of rate design is not feasible for OC San because they do not have access to their customer's water meters.

OC San has been evaluating if the current rebate program is working as intended and has asked HDR to analyze the program for possible changes. There are a few complicating factors that have risen over the years. One issue is if the BOD and TSS levels should be adjusted at the same rate as the volume. Conservation programs generally reduce water consumption but not necessarily the amount of pollutants that go into the wastewater. As water is reduced the concentration of the pollutants generally increases, in other words the actual weight of the pollutants stay the same at the reduced consumption level. It is possible for a customer within a specific usage type to have less BOD and TSS than another like customer due to different physical process or if they have installed facilities that reduce the amount of pollutants from entering the wastewater. The problem a customer may face when seeking a reduced rate based on lower BOD and or TSS concentrations is they might not be able to find a company that will test their wastewater thus providing verifiable proof. The goal of this program is to adjust rates equitably to reflect the actual customer characteristics and reduce the administrative burden on OC San Staff.

3.3 Alternative Rebate Calculation

Rebate programs for sewer utilities with EDU based charges are not unique to OC San. Los Angeles County Sanitation District (LACSD) also has an EDU based rate and has a rebate program for their customers. LACSD's Low-Water Rebate Program provides rebate to customers based on the percent



of flow reduction within structured tiers. Unlike OC San’s current rebate program that individually calculates the rebate based on the customer’s actual flow, LACSD’s tiered structure is based on the ratio of the average daily flow to the assumed flow for the customer’s parcel. Customer’s flow must be below 90% of the assumed flow to qualify for the rebate. Table 3-1 shows LACSD’s rebate tiers. Table 3-1. Los Angeles County Sanitation District Tiered Rebate program

Customer’s Average Daily Flow Divided by Assumed Flow	Customer Percent Reduction
90% or Greater	0%
70% to 89%	20%
50% to 69%	40%
30% to 39%	60%
29% or Less	80%

The benefit for a tiered rebate program like LACSD is the simplicity. If a customer falls within the tier they receive a set reduction in their rate. However, the LACSD program does not account for changes in the actual weight of the pollutants like BOD or TSS. As discussed in the Cost of Service section 1.5 of this report, the cost to treat wastewater typically has three cost components, the volume of the wastewater, the weight of BOD and weight of TSS. Reduced water is likely to be a result of water conservation efforts like low water use appliances or a reduction in irrigation which do not impact the weight of BOD or TSS.

3.4 Recommendations

HDR recommends OC San closely consider the benefits and drawbacks when considering making changes to their rebate program. The intent of the program is to adjust the customer rates that more closely match the customers cost of service and in doing so results in a more equitable rate. The administrative burden of their current system requires a calculation for each customer requesting a rebate resulting in more time and thus higher costs to run the program. Stability and transparency are also important aspects to any rate related program. Having a program like the LACSD tiered rebate program would be easily explained by OC Staff and more easily understood by customers. The current rebate program also has some issues that are not easily addressed. The main issue being that the basis of the flow and concentration of the pollutants are based on the 1998 State Water Resource Control Board (SWRCB) in California, Revenue Program Guidelines Appendix G which is 24 years old and cannot be accurately verified.

OC San should also consider extending the lock-in program from 3 years to 5 years. Extending the lock-in period to 5 years would reduce amount of staff time spent on matters dealing with customer rebates and also provide stability in the funds returned to customers from the rebate from year to year. The 5 year lock-in program is also beneficial to the customers who would have to submit paperwork less frequently.



4 Miscellaneous Fees and Charges

4.1 Introduction

OC San has requested several other fees be updated along with this study. These fees include, permit fees, sampling fees, and inspection fees. It is in the interest of OC San and its customers to charge fees to customers for tasks that require significant expense or labor. Charging these fees at the cost to provide them prevents other customers from subsidizing customers requiring the activities involved with these other services. These fees should be updated at regular intervals to verify the charges reflect current and future assumed costs of materials, labor, and overhead costs. Whenever possible specific hourly rates, and times associates with the fee were used to more closely approximate the true cost of the permit or other activity.

4.2 Administrative Fees and Charges

Administrative Fees and Charges Related to Permittees for Class 1 and 2 dischargers were calculated using estimated time to process the permit and current average hourly staff rates, plus 33% for overhead. The results of this calculation were as much as 36% increase. To reduce the impact of this large increase those fees were phased in over the five year period. Wastehauler and Administrative processing fees were not change over the five year period. Table 4-1 shows the class 1 and 2 administrative, Wastehauler and administrative processing fees.



Table 4-1. Administrative Fees and Charges Related to Permittees per Year

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Administrative Fees and Charges Related to Permittees per Year					
A. Class I/Certified Discharger	\$1,685.00	\$1,791.00	\$1,904.00	\$2,024.00	\$2,152.00
B. Class II	554.00	591.00	630.00	672.00	717.00
C. SPDP1	1,192.00	1,225.00	1,259.00	1,293.00	1,328.00
SPDP Renewal	860.00	913.00	969.00	1,029.00	1,092.00
D. Wastehauler	207.00	225.00	245.00	267.00	291.00
E. Certified Zero/No Discharge	126.00	133.00	140.00	147.00	155.00
Wastehauler					
F. Permit Decal Initial Issue	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00
G. Permit Decal Replacement	50.00	50.00	50.00	50.00	50.00
H. Entry Card Initial Issue	50.00	50.00	50.00	50.00	50.00
I. Entry Card Replacement	100.00	100.00	100.00	100.00	100.00
J. After Hours Discharge - Prearranged	102.00	102.00	102.00	102.00	102.00
K. After Hours Discharge - Emergency	165.00	165.00	165.00	165.00	165.00
Administrative/Processing Fees					
L. OCSD's Collection of Water Consumption Data	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00
M. Appeal Hearing Filing Fee	\$800.00	\$800.00	\$800.00	\$800.00	\$800.00
N. Late Application (30 days or less from expiration date)	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00
O. Late Application (15 days or less from expiration date)	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00

4.3 Industrial Discharger, Source Control and Non-compliance Sampling Fees

Industrial Discharger, Source Control and Non-compliance Sampling Fees were not adjusted for the five year adjustment period. Table 4-2 shows the Industrial discharger, source control and non-compliance sampling fees.



Table 4-2. Industrial Discharger, Source Control and Non-compliance Sampling Fees

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Cost of Processing and Sampling Following a Minor Violation	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Cost of Processing and Sampling Following a Major Violation	400.00	400.00	400.00	400.00	400.00
Non-Compliance Resampling Fee	275.00	275.00	275.00	275.00	275.00

4.4 Inspection Fees

Inspection fees were adjusted by the Los Angeles Consumer Price Index for the 2023-24 fees and then 3% thereafter to account for expected inflation. Table 4-3 provides the inspection fees for the next five years.

Table 4-3. Inspection Fees for Single Connection

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Lateral installation to property line:	\$950.00	\$980.00	\$1,010.00	\$1,040.00	\$1,070.00
Lateral installation to property line with optional cleanout to existing manhole:	1,250.00	1,290.00	1,330.00	1,370.00	1,410.00
Core drilling into existing manhole base - add	1,630.00	1,680.00	1,730.00	1,780.00	1,835.00
Installation of new manhole over existing wastewater:	2,065.00	2,125.00	2,190.00	2,255.00	2,325.00
Gas Flap Installation - add:	510.00	525.00	540.00	555.00	570.00

4.5 Non-Compliance Sampling Fees

Non-Compliance Sampling Fees were calculated from estimates of time to conduct the sample multiplied by the average hourly rate, plus a 30% overhead adjustment and lab fees when applicable. Table 4-4 provides the sampling fees for the next 5 years.



Table 4-4. Non-Compliance Sampling Fees

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Ammonia Analysis as Nitrogen	\$38.00	\$39.00	\$40.00	\$41.00	\$43.00
Biochemical Oxygen Demand (BOD)	57.00	59.00	60.00	62.00	64.00
BOD and Suspended Solids (SS) Analysis	114.00	117.00	121.00	124.00	128.00
Chemical Oxygen Demand	38.00	39.00	40.00	41.00	43.00
Conductivity	76.00	78.00	81.00	83.00	85.00
Cyanide (Amenable)	171.00	176.00	181.00	187.00	192.00
Cyanide (Total)	99.00	102.00	105.00	108.00	111.00
Total Radium Determination	207.00	213.00	219.00	226.00	232.00
Gross Alpha and Beta Determination	111.00	114.00	117.00	121.00	124.00
Tritium Determination	102.00	105.00	108.00	112.00	115.00
Strontium Determination	134.00	138.00	142.00	146.00	150.00
Uranium Determination	45.00	46.00	48.00	49.00	50.00
Oil & Grease (Hexane Soluble Matter)	95.00	98.00	101.00	104.00	107.00
Total Organic Nitrogen	76.00	78.00	81.00	83.00	85.00
pH	38.00	39.00	40.00	41.00	43.00
Fluoride	38.00	39.00	40.00	41.00	43.00
Suspended Solids (Total)	57.00	59.00	60.00	62.00	64.00
Suspended Solids (Total and Volatile)	171.00	176.00	181.00	187.00	192.00
Total Dissolved Solids	57.00	59.00	60.00	62.00	64.00
Mercury (EPA 245.1)	76.00	78.00	81.00	83.00	86.00
Heavy Metals	52.00	54.00	56.00	58.00	60.00
Pharmaceutical Industry (EPA 1666)	342.00	352.00	363.00	374.00	385.00
Chlorinated Pesticides and Aroclors (EPA 608)	128.00	132.00	136.00	140.00	144.00
Volatile Organics (EPA 624)	304.00	313.00	322.00	332.00	342.00
Semi-Volatile Organics (EPA 625)	683.00	704.00	725.00	747.00	769.00
Total Sulfides	83.00	87.00	89.00	92.00	95.00
PFAS	413.00	431.00	444.00	457.00	471.00
Dissolved Sulfides	58.00	60.00	62.00	64.00	66.00



Technical Appendix

**Orange County Sanitation District
Cost of Service Rate Study
Revenue Requirement Summary**

	Estimated	Preliminary	Preliminary	Projected							
	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
Revenue											
Rate Revenue at Current Rates	\$327,459	\$335,487	\$336,448	\$337,413	\$338,380	\$339,350	\$340,324	\$341,300	\$342,279	\$343,261	\$344,246
Miscellaneous Revenue	140,135	149,963	149,207	138,033	142,720	146,594	150,934	157,241	161,582	166,317	168,820
Total Revenue	\$467,594	\$485,449	\$485,655	\$475,446	\$481,100	\$485,945	\$491,257	\$498,541	\$503,861	\$509,578	\$513,066
Expenditures											
Management & Administrative Services	\$40,592	\$44,433	\$45,648	\$47,018	\$48,428	\$49,881	\$51,377	\$52,919	\$54,506	\$56,141	\$57,826
Environmental Services Department	19,064	22,665	23,842	24,557	25,293	26,052	26,834	27,639	28,468	29,322	30,202
Engineering Department	6,381	8,889	9,040	9,311	9,590	9,878	10,175	10,480	10,794	11,118	11,452
Operation & Maintenance Administration	270	667	703	724	746	769	792	815	840	865	891
Collection Facilities	18,173	19,048	18,638	19,197	19,773	20,367	20,978	21,607	22,255	22,923	23,610
Fleet Services	2,011	2,085	2,150	2,214	2,281	2,349	2,420	2,492	2,567	2,644	2,723
Plant 1&2 Operations & Maintenance	96,087	103,358	109,871	113,167	116,562	120,059	123,660	127,370	131,191	135,127	139,181
Total Expenditures	\$182,579	\$201,145	\$209,892	\$216,189	\$222,674	\$229,354	\$236,235	\$243,322	\$250,622	\$258,140	\$265,885
Rate Funded Capital	\$186,115	\$250,244	\$296,775	\$262,290	\$280,905	\$273,021	\$274,888	\$329,087	\$323,690	\$325,733	\$260,463
Debt Service	\$67,846	\$68,568	\$68,611	\$68,572	\$68,626	\$68,500	\$72,653	\$72,652	\$72,650	\$71,141	\$74,731
Transfers	\$3,270	\$7,190	\$7,350	\$3,850	\$3,850	\$3,850	\$3,850	\$3,850	\$3,850	\$3,850	\$3,850
Total Revenue Requirement	\$439,811	\$527,147	\$582,628	\$550,901	\$576,055	\$574,725	\$587,626	\$648,910	\$650,812	\$658,865	\$604,929
Balance/Deficiency of Funds	\$27,784	(\$41,697)	(\$96,972)	(\$75,455)	(\$94,955)	(\$88,780)	(\$96,368)	(\$150,370)	(\$146,951)	(\$149,287)	(\$91,863)
Rate Adj. as a % of Rate Rev	-8.5%	12.4%	28.8%	22.4%	28.1%	26.2%	28.3%	44.1%	42.9%	43.5%	26.7%
Proposed Rate Adjustment	0.00%	0.00%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Rate Revenue After Adjustment	\$327,459	\$335,487	\$348,224	\$361,445	\$375,168	\$389,412	\$404,198	\$419,545	\$435,474	\$452,009	\$469,172
Debt Service Coverage Ratio											
Before Rate Adjustment	4.20	4.15	4.02	3.78	3.77	3.75	3.51	3.51	3.49	3.53	3.31
After Rate Adjustment	4.20	4.15	4.19	4.13	4.30	4.48	4.39	4.59	4.77	5.06	4.98
Residential Bill (1 EDU)	\$343.00	\$347.00	\$359.15	\$371.72	\$384.73	\$398.19	\$412.13	\$426.55	\$441.48	\$456.93	\$472.93
\$ Change Per Month	0.00	4.00	12.15	12.57	13.01	13.47	13.94	14.42	14.93	15.45	15.99
Cumulative \$ Change per Month	0.00	4.00	16.15	28.72	41.73	55.19	69.13	83.55	98.48	113.93	129.93

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 1 - Escalation Factors
 Scenario 1

	<i>Estimated</i>	<i>Preliminary</i>	<i>Projected</i>	<i>Projected</i>								<i>Notes</i>
	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	
Revenues												
General Users	0.0%	0.1%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Industrial	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Waste haulers	0.3%	-28.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
IRWD	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
SAWPA	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Property Tax	2.0%	2.0%	2.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Misc. Revenue	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Expenses												
Salaries, Labor & Benefits	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Training & Meetings	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Chemicals	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Fuel	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Tools and Small Equipment	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Janitorial Supplies	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Janitorial	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Misc. Operating Supplies	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Property Tax Fees	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Solids Removal	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Other Waste Disposal	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Grounds Keeping	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Misc. Services	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Professional Services	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Research & Monitoring	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Repairs & Maintenance	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Telephone	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Diesel	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Natural Gas	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Power	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Water	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Other Operating Supplies	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Other Non-Operating Costs	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Miscellaneous Expense	Actual	9.3%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
One-time	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%
	0.0%											
Investment Interest		1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
New Long-Term Debt Assumptions												
<i>Certificate of Participation (COP)</i>												
Rate		4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Term		20	20	20	20	20	20	20	20	20	20	20
COP Issuance Costs		1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
<i>Low Interest Loan</i>												
Rate		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Term		10	10	10	10	10	10	10	10	10	10	10

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 2 - Sources & Application of Funds

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Revenues												
Rate Revenues												
General Users	\$312,128,000	\$320,534,310	\$321,495,913	\$322,460,401	\$323,427,782	\$324,398,065	\$325,371,259	\$326,347,373	\$327,326,415	\$328,308,395	\$329,293,320	Exhibit 4
Permitted Users	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	Exhibit 4
Waste haulers	1,129,021	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000	Exhibit 4
Total Rate Revenues	\$327,459,387	\$335,486,676	\$336,448,278	\$337,412,766	\$338,380,147	\$339,350,431	\$340,323,625	\$341,299,739	\$342,278,781	\$343,260,760	\$344,245,685	
Other Revenues												
Property Taxes	\$107,623,549	\$109,776,020	\$112,081,316	\$115,443,756	\$118,907,069	\$122,474,281	\$126,148,509	\$129,932,964	\$133,830,953	\$137,845,882	\$141,981,258	As Property Tax
IRWD O&M Assessment	0	0	0	0	0	0	0	0	0	0	0	As IRWD
IRWD Capital Assessment	0	0	0	0	0	0	0	0	0	0	0	As IRWD
IRWD Solids Assessment	0	0	0	0	0	0	0	0	0	0	0	As IRWD
IRWD	8,444,816	14,502,872	16,358,057	15,147,000	15,965,000	15,855,000	16,093,000	18,177,000	18,170,000	18,429,000	16,324,000	Cash Flow File
SAWPA	3,080,817	3,018,000	3,138,000	3,232,000	3,329,000	3,429,000	3,532,000	3,638,000	3,747,000	3,859,000	3,974,000	Cash Flow File
New COP Issues	0	0	0	0	0	0	0	0	0	0	0	As Flat
Interest Revenues	5,751,000											Interest Accumulated in Fund
Capital Facilities Capacity Charges												Applied Directly to Capital
General User Rebates	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	Exhibit 4
Equity Sale to 7 or 14		3,500,000	3,500,000									Cash Flow File
Share of SFI Revenue	3,016,800	3,877,700	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	Cash Flow File
Share of JO Revenue	13,918,000	15,505,010	12,058,809	12,360,000	12,669,000	12,986,000	13,310,000	13,643,000	13,984,000	14,333,000	14,691,000	Cash Flow File
CIP Reimbursements	10,300,000	11,782,925	10,220,909	0	0	0	0	0	0	0	0	Cash Flow File
Total Other Revenues	\$140,134,982	\$149,962,527	\$149,207,091	\$138,032,756	\$142,720,069	\$146,594,281	\$150,933,509	\$157,240,964	\$161,581,953	\$166,316,882	\$168,820,258	
Total Revenues	\$467,594,369	\$485,449,203	\$485,655,370	\$475,445,522	\$481,100,216	\$485,944,711	\$491,257,134	\$498,540,703	\$503,860,734	\$509,577,642	\$513,065,944	

	Estimated	Preliminary	Preliminary	Projected							Notes	
	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31		FY 2031-32
Expenses												
Management & Administrative Services												
Salaries, Wages, & Benefits	\$25,176,434	\$26,213,293	\$27,626,025	\$28,454,806	\$29,308,450	\$30,187,703	\$31,093,335	\$32,026,135	\$32,986,919	\$33,976,526	\$34,995,822	As Salaries, Labor & Benefits
Materials, Supplies, & Services												
Total Administrative Exp	1,688,297	\$1,638,389	\$1,655,648	\$1,705,317	\$1,756,477	\$1,809,171	\$1,863,446	\$1,919,350	\$1,976,930	\$2,036,238	\$2,097,325	As Miscellaneous Expense
Total Printing & Publication	287,630	767,382	343,837	354,152	364,777	375,720	386,992	398,601	410,559	422,876	435,562	As Misc. Services
Training & Meetings												
Meetings - Total	11,250	73,671	79,517	81,903	84,360	86,890	89,497	92,182	94,947	97,796	100,730	As Training & Meetings
Training - Total	316,840	625,370	592,833	610,618	628,937	647,805	667,239	687,256	707,874	729,110	750,983	As Training & Meetings
Total Training & Meetings	\$2,304,017	\$3,104,812	\$2,671,835	\$2,751,990	\$2,834,550	\$2,919,586	\$3,007,174	\$3,097,389	\$3,190,311	\$3,286,020	\$3,384,601	
Operating Materials & Supplies												
Chem. Coagulants - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Chemicals
Odor Control - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Disinfection - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Chemicals - Cogen Op.	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Miscellaneous Chemicals	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Odor & Corrosion Control	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Gas, Diesel, & Oil - Total	970	1,500	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	As Fuel
Tools	2,890	96,800	94,800	97,644	100,573	103,591	106,698	109,899	113,196	116,592	120,090	As Tools and Small Equipment
Safety Equipment/Tools	412,430	211,932	211,934	218,292	224,841	231,586	238,534	245,690	253,060	260,652	268,472	As Tools and Small Equipment
Solv, Paint, Janitor Supplies	2,140	2,606	11,612	11,960	12,319	12,689	13,069	13,461	13,865	14,281	14,710	As Janitorial Supplies
Lab Chemicals & Supplies	80	75	75	77	80	82	84	87	90	92	95	As Chemicals
Misc. Operating Supplies	18,340	16,603	24,106	24,829	25,574	26,341	27,132	27,945	28,784	29,647	30,537	As Misc. Operating Supplies
Property Tax Fees	76,500	76,500	76,500	78,795	81,159	83,594	86,101	88,684	91,345	94,085	96,908	As Property Tax Fees
Total Op Materials & Supplies	\$513,350	\$406,016	\$421,027	\$433,658	\$446,668	\$460,068	\$473,870	\$488,086	\$502,728	\$517,810	\$533,344	
Contractual Services												
Solids Removal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Solids Removal
Other Waste Disposal												
Grit & Screenings Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Residual Solids	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Waste Disposal	192,500	376,200	376,200	387,486	399,111	411,084	423,416	436,119	449,202	462,679	476,559	As Other Waste Disposal
Groundskeeping	177,040	200,000	200,000	206,000	212,180	218,545	225,102	231,855	238,810	245,975	253,354	As Grounds Keeping
Janitorial	650,000	659,488	679,273	699,651	720,641	742,260	764,528	787,464	811,087	835,420	860,483	As Janitorial
Outside Lab Services	500	2,000	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	As Misc. Services
Oxygen - O & M contract	0	0	0	0	0	0	0	0	0	0	0	As Misc. Operating Supplies
County Service Fee	503,672	518,782	534,345	550,375	566,887	583,893	601,410	619,452	638,036	657,177	676,892	As Miscellaneous Expense
Temporary Services	162,480	210,000	210,000	216,300	222,789	229,473	236,357	243,448	250,751	258,274	266,022	As Misc. Services
Security Services	1,716,007	1,716,007	1,716,007	1,767,487	1,820,512	1,875,127	1,931,381	1,989,322	2,049,002	2,110,472	2,173,786	As Misc. Services
In-Plant Line Cleaning	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Other	78,125	83,125	78,125	80,469	82,883	85,369	87,930	90,568	93,285	96,084	98,966	As Misc. Services
Total Contractual Services	\$3,480,324	\$3,765,602	\$3,795,950	\$3,909,829	\$4,027,123	\$4,147,937	\$4,272,375	\$4,400,546	\$4,532,563	\$4,668,540	\$4,808,596	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Total Professional Services	2,757,615	3,983,925	3,600,700	3,708,721	3,819,983	3,934,582	4,052,620	4,174,198	4,299,424	4,428,407	4,561,259	As Professional Services
Total Research & Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Research & Monitoring
Total Repairs & Maintenance	4,963,600	4,418,183	4,624,215	4,762,941	4,905,830	5,053,005	5,204,595	5,360,733	5,521,555	5,687,201	5,857,817	As Repairs & Maintenance
Utilities												
Telephone	502,500	521,267	536,905	553,012	569,603	586,691	604,291	622,420	641,093	660,325	680,135	As Telephone
Diesel For Generators	0	0	0	0	0	0	0	0	0	0	0	As Fuel
Natural Gas - Total	161,580	130,000	140,000	144,200	148,526	152,982	157,571	162,298	167,167	172,182	177,348	As Natural Gas
Power - Total	790,000	725,000	755,000	777,650	800,980	825,009	849,759	875,252	901,509	928,555	956,411	As Power
Water - Total	9,930	0	0	0	0	0	0	0	0	0	0	As Water
Total Utilities	\$1,464,010	1,376,267	1,431,905	1,474,862	1,519,108	1,564,681	1,611,622	1,659,970	1,709,769	1,761,063	1,813,894	
Total Other Operat. Supplies	2,454,140	2,854,714	3,112,978	3,206,367	3,302,558	3,401,635	3,503,684	3,608,795	3,717,059	3,828,570	3,943,427	As Misc. Operating Supplies
Total General Manager	0	1,469,747	1,523,397	1,569,099	1,616,172	1,664,657	1,714,597	1,766,035	1,819,016	1,873,586	1,929,794	As Miscellaneous Expense
Total Other Non-Operating	65,030	121,670	121,670	125,320	129,080	132,952	136,941	141,049	145,280	149,639	154,128	As Other Non-Operating Costs
Total Matls, Supply, & Svc.	\$18,002,086	\$21,500,936	\$21,303,677	\$21,942,787	\$22,601,071	\$23,279,103	\$23,977,476	\$24,696,800	\$25,437,704	\$26,200,836	\$26,986,861	
Oper Requirement Before Cost Allocation	\$43,178,520	\$47,714,229	\$48,929,702	\$50,397,593	\$51,909,521	\$53,466,806	\$55,070,811	\$56,722,935	\$58,424,623	\$60,177,362	\$61,982,683	
Cost Allocation:												
In/(Out) Svc Div to Line Div	(2,604,700)	(3,299,900)	(3,299,900)	(3,398,897)	(3,500,864)	(3,605,890)	(3,714,067)	(3,825,489)	(3,940,253)	(4,058,461)	(4,180,215)	As Miscellaneous Expense
In/(Out) OCSD Equip Rental	18,420	18,370	18,370	18,921	19,489	20,073	20,676	21,296	21,935	22,593	23,271	As Miscellaneous Expense
In/(Out) Lab Charges	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Non-Sal	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Cost Allocation - Total	(\$2,586,280)	(\$3,281,530)	(\$3,281,530)	(\$3,379,976)	(\$3,481,375)	(\$3,585,816)	(\$3,693,391)	(\$3,804,193)	(\$3,918,318)	(\$4,035,868)	(\$4,156,944)	
Total Management & Administrative Services	\$40,592,240	\$44,432,699	\$45,648,172	\$47,017,617	\$48,428,146	\$49,880,990	\$51,377,420	\$52,918,742	\$54,506,305	\$56,141,494	\$57,825,739	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Environmental Services Department												
Salaries, Wages, & Benefits	\$14,694,900	\$16,016,900	\$16,904,000	\$17,411,120	\$17,933,454	\$18,471,457	\$19,025,601	\$19,596,369	\$20,184,260	\$20,789,788	\$21,413,481	As Salaries, Labor & Benefits
Materials, Supplies, & Services												
Total Administrative Exp	\$133,360	\$139,750	\$136,300	\$140,389	\$144,601	\$148,939	\$153,407	\$158,009	\$162,749	\$167,632	\$172,661	As Miscellaneous Expense
Total Printing & Publication	12,580	11,500	14,000	14,420	14,853	15,298	15,757	16,230	16,717	17,218	17,735	As Misc. Services
Training & Meetings	0	0	0	0	0	0	0	0	0	0	0	
Meetings - Total	4,450	31,815	31,815	32,769	33,753	34,765	35,808	36,882	37,989	39,128	40,302	As Training & Meetings
Training - Total	11,035	121,030	135,840	139,915	144,113	148,436	152,889	157,476	162,200	167,066	172,078	As Training & Meetings
Total Training & Meetings	\$161,425	\$304,095	\$317,955	\$327,494	\$337,318	\$347,438	\$357,861	\$368,597	\$379,655	\$391,045	\$402,776	
Operating Materials & Supplies												
Chem. Coagulants - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Chemicals
Odor Control - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Disinfection - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Chemicals - Cogen Op.	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Miscellaneous Chemicals	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Odor & Corrosion Control	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Gas, Diesel, & Oil - Total	14,960	22,000	24,000	24,720	25,462	26,225	27,012	27,823	28,657	29,517	30,402	As Fuel
Tools	24,200	151,700	126,700	130,501	134,416	138,449	142,602	146,880	151,286	155,825	160,500	As Tools and Small Equipment
Safety Equipment/Tools	57,800	85,800	70,800	72,924	75,112	77,365	79,686	82,077	84,539	87,075	89,687	As Tools and Small Equipment
Solv, Paint, Janitor Supplies	17,250	17,500	17,500	18,025	18,566	19,123	19,696	20,287	20,896	21,523	22,168	As Janitorial Supplies
Lab Chemicals & Supplies	619,560	655,000	667,500	687,525	708,151	729,395	751,277	773,815	797,030	820,941	845,569	As Chemicals
Misc. Operating Supplies	6,160	7,160	7,160	7,375	7,596	7,824	8,059	8,300	8,549	8,806	9,070	As Misc. Operating Supplies
Property Tax Fees	0	0	0	0	0	0	0	0	0	0	0	As Property Tax Fees
Total Op Materials & Supplies	\$739,930	\$939,160	\$913,660	\$941,070	\$969,302	\$998,381	\$1,028,332	\$1,059,182	\$1,090,958	\$1,123,687	\$1,157,397	
Contractual Services												
Solids Removal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Solids Removal
Other Waste Disposal	0	0	0	0	0	0	0	0	0	0	0	
Grit & Screenings Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Residual Solids	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Waste Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Groundskeeping	0	0	0	0	0	0	0	0	0	0	0	As Grounds Keeping
Janitorial	0	0	0	0	0	0	0	0	0	0	0	As Janitorial
Outside Lab Services	201,000	325,000	325,000	334,750	344,793	355,136	365,790	376,764	388,067	399,709	411,700	As Misc. Services
Oxygen - O & M contract	0	0	0	0	0	0	0	0	0	0	0	As Misc. Operating Supplies
County Service Fee	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Temporary Services	185,000	286,400	286,400	294,992	303,842	312,957	322,346	332,016	341,977	352,236	362,803	As Misc. Services
Security Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
In-Plant Line Cleaning	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Other	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Total Contractual Services	\$386,000	\$611,400	\$611,400	\$629,742	\$648,634	\$668,093	\$688,136	\$708,780	\$730,044	\$751,945	\$774,503	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Total Professional Services	336,795	1,271,221	1,397,000	1,438,910	1,482,077	1,526,540	1,572,336	1,619,506	1,668,091	1,718,134	1,769,678	As Professional Services
Total Research & Monitoring	1,087,170	1,675,450	1,751,363	1,803,904	1,858,021	1,913,762	1,971,174	2,030,310	2,091,219	2,153,956	2,218,574	As Research & Monitoring
Total Repairs & Maintenance	366,480	432,000	432,000	444,960	458,309	472,058	486,220	500,806	515,831	531,306	547,245	As Repairs & Maintenance
Utilities												
Telephone	0	0	0	0	0	0	0	0	0	0	0	As Telephone
Diesel For Generators	0	0	0	0	0	0	0	0	0	0	0	As Fuel
Natural Gas - Total	0	0	0	0	0	0	0	0	0	0	0	As Natural Gas
Power - Total	0	0	0	0	0	0	0	0	0	0	0	As Power
Water - Total	0	0	0	0	0	0	0	0	0	0	0	As Water
Total Utilities	\$0	0	0	0	0	0	0	0	0	0	0	
Total Other Operat. Supplies	1,296,457	1,427,200	1,529,000	1,574,870	1,622,116	1,670,780	1,720,903	1,772,530	1,825,706	1,880,477	1,936,891	As Misc. Operating Supplies
Total General Manager	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Total Other Non-Operating	1,880	2,140	2,140	2,204	2,270	2,338	2,409	2,481	2,555	2,632	2,711	As Other Non-Operating Costs
Total Matls, Supply, & Svc.	\$4,376,137	\$6,662,666	\$6,954,518	\$7,163,154	\$7,378,048	\$7,599,390	\$7,827,371	\$8,062,192	\$8,304,058	\$8,553,180	\$8,809,775	
Oper Requirement Before Cost Allocation	\$19,071,037	\$22,679,566	\$23,858,518	\$24,574,274	\$25,311,502	\$26,070,847	\$26,852,972	\$27,658,561	\$28,488,318	\$29,342,968	\$30,223,257	
Cost Allocation:												
In/(Out) Svc Div to Line Div	(2,800)	(6,400)	(6,400)	(6,592)	(6,790)	(6,993)	(7,203)	(7,419)	(7,642)	(7,871)	(8,107)	As Miscellaneous Expense
In/(Out) OCSD Equip Rental	43,750	43,750	43,750	45,063	46,414	47,807	49,241	50,718	52,240	53,807	55,421	As Miscellaneous Expense
In/(Out) Lab Charges	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for Salary	(21,400)	(23,200)	(24,200)	(24,926)	(25,674)	(26,444)	(27,237)	(28,054)	(28,896)	(29,763)	(30,656)	As Miscellaneous Expense
(Out) to CIP for OH	(26,400)	(28,900)	(30,140)	(31,044)	(31,976)	(32,935)	(33,923)	(34,941)	(35,989)	(37,068)	(38,180)	As Miscellaneous Expense
In/<Out> to RA for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Non-Sal	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Cost Allocation - Total	(\$6,850)	(\$14,750)	(\$16,990)	(\$17,500)	(\$18,025)	(\$18,565)	(\$19,122)	(\$19,696)	(\$20,287)	(\$20,896)	(\$21,522)	
Total Environmental Services Department	\$19,064,187	\$22,664,816	\$23,841,528	\$24,556,774	\$25,293,477	\$26,052,281	\$26,833,850	\$27,638,865	\$28,468,031	\$29,322,072	\$30,201,734	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Engineering Department												
Salaries, Wages, & Benefits	\$22,127,000	\$24,241,135	\$25,276,435	\$26,034,728	\$26,815,770	\$27,620,243	\$28,448,850	\$29,302,316	\$30,181,385	\$31,086,827	\$32,019,432	As Salaries, Labor & Benefits
Materials, Supplies, & Services												
Total Administrative Exp	\$172,091	\$185,830	\$189,540	\$195,226	\$201,083	\$207,115	\$213,329	\$219,729	\$226,321	\$233,110	\$240,104	As Miscellaneous Expense
Total Printing & Publication	8,700	3,300	3,150	3,245	3,342	3,442	3,545	3,652	3,761	3,874	3,990	As Misc. Services
Training & Meetings												
Meetings - Total	916	9,380	6,870	7,076	7,288	7,507	7,732	7,964	8,203	8,449	8,703	As Training & Meetings
Training - Total	29,200	111,430	80,660	83,080	85,572	88,139	90,784	93,507	96,312	99,202	102,178	As Training & Meetings
Total Training & Meetings	\$210,907	\$309,940	\$280,220	\$288,627	\$297,285	\$306,204	\$315,390	\$324,852	\$334,597	\$344,635	\$354,974	
Operating Materials & Supplies												
Chem. Coagulants - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Chemicals
Odor Control - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Disinfection - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Chemicals - Cogen Op.	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Miscellaneous Chemicals	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Odor & Corrosion Control	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Gas, Diesel, & Oil - Total	2,380	2,500	2,500	2,575	2,652	2,732	2,814	2,898	2,985	3,075	3,167	As Fuel
Tools	4,200	4,000	4,000	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	As Tools and Small Equipment
Safety Equipment/Tools	13,120	12,600	11,600	11,948	12,306	12,676	13,056	13,448	13,851	14,267	14,695	As Tools and Small Equipment
Solv, Paint, Janitor Supplies	950	1,300	1,400	1,442	1,485	1,530	1,576	1,623	1,672	1,722	1,773	As Janitorial Supplies
Lab Chemicals & Supplies	20	20	20	21	21	22	23	23	24	25	25	As Chemicals
Misc. Operating Supplies	500	900	950	979	1,008	1,038	1,069	1,101	1,134	1,168	1,203	As Misc. Operating Supplies
Property Tax Fees	0	0	0	0	0	0	0	0	0	0	0	As Property Tax Fees
Total Op Materials & Supplies	\$21,170	\$21,320	\$20,470	\$21,084	\$21,717	\$22,368	\$23,039	\$23,730	\$24,442	\$25,176	\$25,931	
Contractual Services												
Solids Removal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Solids Removal
Other Waste Disposal												
Grit & Screenings Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Residual Solids	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Waste Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Groundskeeping												
Janitorial	0	0	0	0	0	0	0	0	0	0	0	As Janitorial
Outside Lab Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Oxygen - O & M contract	0	0	0	0	0	0	0	0	0	0	0	As Misc. Operating Supplies
County Service Fee	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Temporary Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Security Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
In-Plant Line Cleaning	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Other	400,000	600,000	600,000	618,000	636,540	655,636	675,305	695,564	716,431	737,924	760,062	As Misc. Services
Total Contractual Services	\$400,000	\$600,000	\$600,000	\$618,000	\$636,540	\$655,636	\$675,305	\$695,564	\$716,431	\$737,924	\$760,062	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>								<i>Notes</i>
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>	<i>FY 2031-32</i>	
Total Professional Services	660,550	804,000	810,000	834,300	859,329	885,109	911,662	939,012	967,182	996,198	1,026,084	As Professional Services
Total Research & Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Research & Monitoring
Total Repairs & Maintenance	300	1,400	1,400	1,442	1,485	1,530	1,576	1,623	1,672	1,722	1,773	As Repairs & Maintenance
Utilities												
Telephone	0	0	0	0	0	0	0	0	0	0	0	As Telephone
Diesel For Generators	0	0	0	0	0	0	0	0	0	0	0	As Fuel
Natural Gas - Total	0	0	0	0	0	0	0	0	0	0	0	As Natural Gas
Power - Total	0	0	0	0	0	0	0	0	0	0	0	As Power
Water - Total	0	0	0	0	0	0	0	0	0	0	0	As Water
Total Utilities	\$0	0	0	0	0	0	0	0	0	0	0	
Total Other Operat. Supplies	41,330	3,450	3,450	3,554	3,660	3,770	3,883	3,999	4,119	4,243	4,370	As Misc. Operating Supplies
Total General Manager	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Total Other Non-Operating	1,500	1,880	1,900	1,957	2,016	2,076	2,138	2,203	2,269	2,337	2,407	As Other Non-Operating Costs
Total Matls, Supply, & Svc.	\$1,335,757	\$1,741,990	\$1,717,440	\$1,768,963	\$1,822,032	\$1,876,693	\$1,932,994	\$1,990,984	\$2,050,713	\$2,112,235	\$2,175,602	
Oper Requirement Before Cost Allocation	\$23,462,757	\$25,983,125	\$26,993,875	\$27,803,691	\$28,637,802	\$29,496,936	\$30,381,844	\$31,293,299	\$32,232,098	\$33,199,061	\$34,195,033	
Cost Allocation:												
In/(Out) Svc Div to Line Div	2,653,800	3,253,500	3,253,500	3,351,105	3,451,638	3,555,187	3,661,843	3,771,698	3,884,849	4,001,395	4,121,436	As Miscellaneous Expense
In/(Out) OCSD Equip Rental	41,780	41,780	41,780	43,033	44,324	45,654	47,024	48,434	49,888	51,384	52,926	As Miscellaneous Expense
In/(Out) Lab Charges	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for Salary	(6,790,390)	(7,422,300)	(7,735,100)	(7,967,153)	(8,206,168)	(8,452,353)	(8,705,923)	(8,967,101)	(9,236,114)	(9,513,197)	(9,798,593)	As Miscellaneous Expense
(Out) to CIP for OH	(12,986,930)	(12,967,050)	(13,514,110)	(13,919,533)	(14,337,119)	(14,767,233)	(15,210,250)	(15,666,557)	(16,136,554)	(16,620,651)	(17,119,270)	As Miscellaneous Expense
In/<Out> to RA for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Non-Sal	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Cost Allocation - Total	(\$17,081,740)	(\$17,094,070)	(\$17,953,930)	(\$18,492,548)	(\$19,047,324)	(\$19,618,744)	(\$20,207,306)	(\$20,813,526)	(\$21,437,931)	(\$22,081,069)	(\$22,743,501)	
Total Engineering Department	\$6,381,017	\$8,889,055	\$9,039,945	\$9,311,143	\$9,590,478	\$9,878,192	\$10,174,538	\$10,479,774	\$10,794,167	\$11,117,992	\$11,451,532	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Operations & Maintenance Administration												
Salaries, Wages, & Benefits	\$279,500	\$586,900	\$619,400	\$637,982	\$657,121	\$676,835	\$697,140	\$718,054	\$739,596	\$761,784	\$784,637	As Salaries, Labor & Benefits
Materials, Supplies, & Services												
Total Administrative Exp	\$0	\$1,530	\$1,530	\$1,576	\$1,623	\$1,672	\$1,722	\$1,774	\$1,827	\$1,882	\$1,938	As Miscellaneous Expense
Total Printing & Publication	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Training & Meetings												
Meetings - Total	0	1,000	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	As Training & Meetings
Training - Total	0	0	0	0	0	0	0	0	0	0	0	As Training & Meetings
Total Training & Meetings	\$0	\$2,530	\$2,530	\$2,606	\$2,684	\$2,765	\$2,848	\$2,933	\$3,021	\$3,112	\$3,205	
Operating Materials & Supplies												
Chem. Coagulants - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Chemicals
Odor Control - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Disinfection - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Chemicals - Cogen Op.	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Miscellaneous Chemicals	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Odor & Corrosion Control	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Gas, Diesel, & Oil - Total	0	0	0	0	0	0	0	0	0	0	0	As Fuel
Tools	0	0	0	0	0	0	0	0	0	0	0	As Tools and Small Equipment
Safety Equipment/Tools	0	0	0	0	0	0	0	0	0	0	0	As Tools and Small Equipment
Solv, Paint, Janitor Supplies	0	0	0	0	0	0	0	0	0	0	0	As Janitorial Supplies
Lab Chemicals & Supplies	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Misc. Operating Supplies	0	0	0	0	0	0	0	0	0	0	0	As Misc. Operating Supplies
Property Tax Fees	0	0	0	0	0	0	0	0	0	0	0	As Property Tax Fees
Total Op Materials & Supplies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Contractual Services												
Solids Removal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Solids Removal
Other Waste Disposal												
Grit & Screenings Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Residual Solids	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Waste Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Groundskeeping	0	0	0	0	0	0	0	0	0	0	0	As Grounds Keeping
Janitorial	0	0	0	0	0	0	0	0	0	0	0	As Janitorial
Outside Lab Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Oxygen - O & M contract	0	0	0	0	0	0	0	0	0	0	0	As Misc. Operating Supplies
County Service Fee	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Temporary Services	0	78,000	82,000	84,460	86,994	89,604	92,292	95,060	97,912	100,850	103,875	As Misc. Services
Security Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
In-Plant Line Cleaning	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Other	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Total Contractual Services	\$0	\$78,000	\$82,000	\$84,460	\$86,994	\$89,604	\$92,292	\$95,060	\$97,912	\$100,850	\$103,875	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Total Professional Services	1,000	5,000	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	As Professional Services
Total Research & Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Research & Monitoring
Total Repairs & Maintenance	0	0	0	0	0	0	0	0	0	0	0	As Repairs & Maintenance
Utilities												
Telephone	0	0	0	0	0	0	0	0	0	0	0	As Telephone
Diesel For Generators	0	0	0	0	0	0	0	0	0	0	0	As Fuel
Natural Gas - Total	0	0	0	0	0	0	0	0	0	0	0	As Natural Gas
Power - Total	0	0	0	0	0	0	0	0	0	0	0	As Power
Water - Total	0	0	0	0	0	0	0	0	0	0	0	As Water
Total Utilities	\$0	0	0	0	0	0	0	0	0	0	0	
Total Other Operat. Supplies	90	100	100	103	106	109	113	116	119	123	127	As Misc. Operating Supplies
Total General Manager	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Total Other Non-Operating	0	40	40	41	42	44	45	46	48	49	51	As Other Non-Operating Costs
Total Matls, Supply, & Svc.	\$0	\$0	\$0	\$92,360	\$95,131	\$97,985	\$100,924	\$103,952	\$107,071	\$110,283	\$113,591	
Oper Requirement Before Cost Allocation	\$0	\$0	\$0	\$730,342	\$752,252	\$774,820	\$798,065	\$822,006	\$846,667	\$872,067	\$898,229	
Cost Allocation:												
In/(Out) Svc Div to Line Div	(10,300)	(5,700)	(5,700)	(5,871)	(6,047)	(6,229)	(6,415)	(6,608)	(6,806)	(7,010)	(7,221)	As Miscellaneous Expense
In/(Out) OCSD Equip Rental	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/(Out) Lab Charges	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Non-Sal	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Cost Allocation - Total	(\$10,300)	(\$5,700)	(\$5,700)	(\$5,871)	(\$6,047)	(\$6,229)	(\$6,415)	(\$6,608)	(\$6,806)	(\$7,010)	(\$7,221)	
Total Operations & Maintenance Administration	\$270,290	\$666,870	\$703,370	\$724,471	\$746,205	\$768,591	\$791,649	\$815,399	\$839,861	\$865,056	\$891,008	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Collection Facilities												
Salaries, Wages, & Benefits	\$4,406,800	\$4,616,300	\$4,833,800	\$4,978,814	\$5,128,178	\$5,282,024	\$5,440,484	\$5,603,699	\$5,771,810	\$5,944,964	\$6,123,313	As Salaries, Labor & Benefits
Materials, Supplies, & Services												
Total Administrative Exp	\$58,929	\$14,290	\$14,730	\$15,172	\$15,627	\$16,096	\$16,579	\$17,076	\$17,588	\$18,116	\$18,660	As Miscellaneous Expense
Total Printing & Publication	1,250	1,300	1,300	1,339	1,379	1,421	1,463	1,507	1,552	1,599	1,647	As Misc. Services
Training & Meetings												
Meetings - Total	1,000	5,660	5,660	5,830	6,005	6,185	6,370	6,561	6,758	6,961	7,170	As Training & Meetings
Training - Total	10,000	34,870	28,070	28,912	29,779	30,673	31,593	32,541	33,517	34,523	35,558	As Training & Meetings
Total Training & Meetings	\$71,179	\$56,120	\$49,760	\$51,253	\$52,790	\$54,374	\$56,005	\$57,685	\$59,416	\$61,199	\$63,034	
Operating Materials & Supplies												
Chem. Coagulants - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Chemicals
Odor Control - Total	5,807,789	7,025,286	8,229,078	8,475,950	8,730,229	8,992,136	9,261,900	9,539,757	9,825,949	10,120,728	10,424,350	As Chemicals
Disinfection - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Chemicals - Cogen Op.	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Miscellaneous Chemicals	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Odor & Corrosion Control	20,000	50,000	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	As Chemicals
Gas, Diesel, & Oil - Total	18,960	26,500	36,500	37,595	38,723	39,885	41,081	42,314	43,583	44,890	46,237	As Fuel
Tools	63,000	90,000	90,000	92,700	95,481	98,345	101,296	104,335	107,465	110,689	114,009	As Tools and Small Equipment
Safety Equipment/Tools	44,690	95,000	66,880	68,886	70,953	73,082	75,274	77,532	79,858	82,254	84,722	As Tools and Small Equipment
Solv, Paint, Janitor Supplies	18,216	18,580	18,952	19,521	20,106	20,709	21,331	21,971	22,630	23,309	24,008	As Janitorial Supplies
Lab Chemicals & Supplies	416	424	432	445	458	472	486	501	516	531	547	As Chemicals
Misc. Operating Supplies	10,000	13,000	14,000	14,420	14,853	15,298	15,757	16,230	16,717	17,218	17,735	As Misc. Operating Supplies
Property Tax Fees	0	0	0	0	0	0	0	0	0	0	0	As Property Tax Fees
Total Op Materials & Supplies	\$5,983,071	\$7,318,790	\$8,505,842	\$8,761,017	\$9,023,848	\$9,294,563	\$9,573,400	\$9,860,602	\$10,156,420	\$10,461,113	\$10,774,946	
Contractual Services												
Solids Removal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Solids Removal
Other Waste Disposal												
Grit & Screenings Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Residual Solids	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Waste Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Groundskeeping	0	0	0	0	0	0	0	0	0	0	0	As Grounds Keeping
Janitorial	0	0	0	0	0	0	0	0	0	0	0	As Janitorial
Outside Lab Services	15,000	20,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	As Misc. Services
Oxygen - O & M contract	0	0	0	0	0	0	0	0	0	0	0	As Misc. Operating Supplies
County Service Fee	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Temporary Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Security Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
In-Plant Line Cleaning	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Other	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Total Contractual Services	\$15,000	\$20,000	\$15,000	\$15,450	\$15,914	\$16,391	\$16,883	\$17,389	\$17,911	\$18,448	\$19,002	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Total Professional Services	181,560	165,000	110,000	113,300	116,699	120,200	123,806	127,520	131,346	135,286	139,345	As Professional Services
Total Research & Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Research & Monitoring
Total Repairs & Maintenance	6,575,792	5,922,271	4,161,460	4,286,304	4,414,893	4,547,340	4,683,760	4,824,273	4,969,001	5,118,071	5,271,613	As Repairs & Maintenance
Utilities												
Telephone	0	0	0	0	0	0	0	0	0	0	0	As Telephone
Diesel For Generators	0	0	0	0	0	0	0	0	0	0	0	As Fuel
Natural Gas - Total	0	0	0	0	0	0	0	0	0	0	0	As Natural Gas
Power - Total	695,140	709,042	723,223	744,920	767,267	790,285	813,994	838,414	863,566	889,473	916,157	As Power
Water - Total	23,490	23,959	24,438	25,171	25,926	26,704	27,505	28,330	29,180	30,056	30,957	As Water
Total Utilities	\$718,630	733,001	747,661	770,091	793,194	816,989	841,499	866,744	892,746	919,529	947,115	
Total Other Operat. Supplies	66,360	66,360	68,076	70,118	72,222	74,388	76,620	78,919	81,286	83,725	86,237	As Misc. Operating Supplies
Total General Manager	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Total Other Non-Operating	370	600	600	618	637	656	675	696	716	738	760	As Other Non-Operating Costs
Total Matls, Supply, & Svc.	\$13,611,962	\$14,282,142	\$13,658,399	\$14,068,151	\$14,490,195	\$14,924,901	\$15,372,648	\$15,833,828	\$16,308,843	\$16,798,108	\$17,302,051	
Oper Requirement Before Cost Allocation	\$18,018,762	\$18,898,442	\$18,492,199	\$19,046,965	\$19,618,374	\$20,206,925	\$20,813,133	\$21,437,527	\$22,080,653	\$22,743,072	\$23,425,364	
Cost Allocation:												
In/(Out) Svc Div to Line Div	(17,400)	(21,500)	(21,500)	(22,145)	(22,809)	(23,494)	(24,198)	(24,924)	(25,672)	(26,442)	(27,236)	As Miscellaneous Expense
In/(Out) OCSD Equip Rental	222,740	222,740	222,740	229,422	236,305	243,394	250,696	258,217	265,963	273,942	282,160	As Miscellaneous Expense
In/(Out) Lab Charges	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for Salary	(19,780)	(21,300)	(22,900)	(23,587)	(24,295)	(25,023)	(25,774)	(26,547)	(27,344)	(28,164)	(29,009)	As Miscellaneous Expense
(Out) to CIP for OH	(31,230)	(29,980)	(32,230)	(33,197)	(34,193)	(35,219)	(36,275)	(37,363)	(38,484)	(39,639)	(40,828)	As Miscellaneous Expense
In/<Out> to RA for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Non-Sal	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Cost Allocation - Total	\$154,330	\$149,960	\$146,110	\$150,493	\$155,008	\$159,658	\$164,448	\$169,382	\$174,463	\$179,697	\$185,088	
Total Collection Facilities	\$18,173,092	\$19,048,402	\$18,638,309	\$19,197,458	\$19,773,382	\$20,366,583	\$20,977,581	\$21,606,908	\$22,255,116	\$22,922,769	\$23,610,452	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Fleet Services												
Salaries, Wages, & Benefits	\$1,271,300	\$1,246,600	\$1,311,300	\$1,350,639	\$1,391,158	\$1,432,893	\$1,475,880	\$1,520,156	\$1,565,761	\$1,612,734	\$1,661,116	As Salaries, Labor & Benefits
Materials, Supplies, & Services												
Total Administrative Exp	\$3,200	\$4,630	\$4,710	\$4,851	\$4,997	\$5,147	\$5,301	\$5,460	\$5,624	\$5,793	\$5,966	As Miscellaneous Expense
Total Printing & Publication	150	150	150	155	159	164	169	174	179	184	190	As Misc. Services
Training & Meetings												
Meetings - Total	0	500	500	515	530	546	563	580	597	615	633	As Training & Meetings
Training - Total	0	22,150	6,700	6,901	7,108	7,321	7,541	7,767	8,000	8,240	8,487	As Training & Meetings
Total Training & Meetings	\$3,350	\$27,430	\$12,060	\$12,422	\$12,794	\$13,178	\$13,574	\$13,981	\$14,400	\$14,832	\$15,277	
Operating Materials & Supplies												
Chem. Coagulants - Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Chemicals
Odor Control - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Disinfection - Total	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Chemicals - Cogen Op.	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Miscellaneous Chemicals	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Odor & Corrosion Control	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Gas, Diesel, & Oil - Total	408,500	346,485	355,110	365,763	376,736	388,038	399,679	411,670	424,020	436,741	449,843	As Fuel
Tools	60,000	69,000	71,000	73,130	75,324	77,584	79,911	82,308	84,778	87,321	89,941	As Tools and Small Equipment
Safety Equipment/Tools	6,000	6,000	6,000	6,180	6,365	6,556	6,753	6,956	7,164	7,379	7,601	As Tools and Small Equipment
Solv, Paint, Janitor Supplies	1,470	1,500	1,500	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900	As Janitorial Supplies
Lab Chemicals & Supplies	30	50	50	52	53	55	56	58	60	61	63	As Chemicals
Misc. Operating Supplies	450	500	500	515	530	546	563	580	597	615	633	As Misc. Operating Supplies
Property Tax Fees	0	0	0	0	0	0	0	0	0	0	0	As Property Tax Fees
Total Op Materials & Supplies	\$476,450	\$423,535	\$434,160	\$447,185	\$460,600	\$474,418	\$488,651	\$503,310	\$518,410	\$533,962	\$549,981	
Contractual Services												
Solids Removal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	As Solids Removal
Other Waste Disposal												
Grit & Screenings Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Residual Solids	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Waste Disposal	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Groundskeeping	0	0	0	0	0	0	0	0	0	0	0	As Grounds Keeping
Janitorial	0	0	0	0	0	0	0	0	0	0	0	As Janitorial
Outside Lab Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Oxygen - O & M contract	0	0	0	0	0	0	0	0	0	0	0	As Misc. Operating Supplies
County Service Fee	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Temporary Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Security Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
In-Plant Line Cleaning	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Other	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Total Contractual Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Total Professional Services	7,000	12,025	12,025	12,386	12,757	13,140	13,534	13,940	14,358	14,789	15,233	As Professional Services
Total Research & Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Research & Monitoring
Total Repairs & Maintenance	567,332	648,669	648,669	668,129	688,173	708,818	730,083	751,985	774,545	797,781	821,714	As Repairs & Maintenance
Utilities												
Telephone	0	0	0	0	0	0	0	0	0	0	0	As Telephone
Diesel For Generators	75,000	55,000	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006	As Fuel
Natural Gas - Total	0	0	0	0	0	0	0	0	0	0	0	As Natural Gas
Power - Total	0	0	0	0	0	0	0	0	0	0	0	As Power
Water - Total	0	0	0	0	0	0	0	0	0	0	0	As Water
Total Utilities	\$75,000	55,000	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006	
Total Other Operat. Supplies	10,240	50,500	50,500	52,015	53,575	55,183	56,838	58,543	60,300	62,109	63,972	As Misc. Operating Supplies
Total General Manager	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Total Other Non-Operating	150	200	200	206	212	219	225	232	239	246	253	As Other Non-Operating Costs
Total Matls, Supply, & Svc.	\$1,139,522	\$1,217,359	\$1,217,614	\$1,254,142	\$1,291,767	\$1,330,520	\$1,370,435	\$1,411,548	\$1,453,895	\$1,497,512	\$1,542,437	
Oper Requirement Before Cost Allocation	\$2,410,822	\$2,463,959	\$2,528,914	\$2,604,781	\$2,682,925	\$2,763,413	\$2,846,315	\$2,931,704	\$3,019,656	\$3,110,245	\$3,203,553	
Cost Allocation:												
In/(Out) Svc Div to Line Div	53,000	73,300	73,300	75,499	77,764	80,097	82,500	84,975	87,524	90,150	92,854	As Miscellaneous Expense
In/(Out) OCSD Equip Rental	(452,350)	(452,350)	(452,350)	(465,921)	(479,898)	(494,295)	(509,124)	(524,398)	(540,130)	(556,333)	(573,023)	As Miscellaneous Expense
In/(Out) Lab Charges	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Non-Sal	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Cost Allocation - Total	(\$399,350)	(\$379,050)	(\$379,050)	(\$390,422)	(\$402,134)	(\$414,198)	(\$426,624)	(\$439,423)	(\$452,606)	(\$466,184)	(\$480,169)	
Total Fleet Services	\$2,011,472	\$2,084,909	\$2,149,864	\$2,214,360	\$2,280,791	\$2,349,214	\$2,419,691	\$2,492,282	\$2,567,050	\$2,644,062	\$2,723,383	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
<i>Plant No. 1 & 2 Operations & Maintenance</i>												
Salaries, Wages, & Benefits	\$37,172,700	\$39,850,454	\$41,804,054	\$43,058,176	\$44,349,921	\$45,680,419	\$47,050,831	\$48,462,356	\$49,916,227	\$51,413,713	\$52,956,125	As Salaries, Labor & Benefits
<u>Materials, Supplies, & Services</u>												
Total Administrative Exp	\$199,220	\$268,760	\$202,250	\$208,318	\$214,567	\$221,004	\$227,634	\$234,463	\$241,497	\$248,742	\$256,204	As Miscellaneous Expense
Total Printing & Publication	14,821	25,700	25,700	26,471	27,265	28,083	28,926	29,793	30,687	31,608	32,556	As Misc. Services
Training & Meetings												
Meetings - Total	1,850	5,420	5,420	5,583	5,750	5,923	6,100	6,283	6,472	6,666	6,866	As Training & Meetings
Training - Total	34,010	118,800	157,780	162,513	167,389	172,410	177,583	182,910	188,398	194,049	199,871	As Training & Meetings
Total Training & Meetings	\$249,901	\$418,680	\$391,150	\$402,885	\$414,971	\$427,420	\$440,243	\$453,450	\$467,054	\$481,065	\$495,497	
Operating Materials & Supplies												
Chem. Coagulants - Total	\$11,204,746	\$12,103,086	\$12,585,600	\$12,963,168	\$13,352,063	\$13,752,625	\$14,165,204	\$14,590,160	\$15,027,865	\$15,478,701	\$15,943,062	As Chemicals
Odor Control - Total	741,194	818,000	830,500	855,415	881,077	907,510	934,735	962,777	991,660	1,021,410	1,052,053	As Chemicals
Disinfection - Total	163,080	198,500	162,500	167,375	172,396	177,568	182,895	188,382	194,033	199,855	205,850	As Chemicals
Chemicals - Cogen Op.	305,000	350,000	384,000	395,520	407,386	419,607	432,195	445,161	458,516	472,272	486,440	As Chemicals
Miscellaneous Chemicals	42,000	85,000	96,000	98,880	101,846	104,902	108,049	111,290	114,629	118,068	121,610	As Chemicals
Odor & Corrosion Control	0	0	0	0	0	0	0	0	0	0	0	As Chemicals
Gas, Diesel, & Oil - Total	349,630	406,400	406,400	418,592	431,150	444,084	457,407	471,129	485,263	499,821	514,815	As Fuel
Tools	444,400	454,000	454,000	467,620	481,649	496,098	510,981	526,310	542,100	558,363	575,114	As Tools and Small Equipment
Safety Equipment/Tools	491,950	522,000	524,000	539,720	555,912	572,589	589,767	607,460	625,683	644,454	663,788	As Tools and Small Equipment
Solv, Paint, Janitor Supplies	86,100	93,500	93,500	96,305	99,194	102,170	105,235	108,392	111,644	114,993	118,443	As Janitorial Supplies
Lab Chemicals & Supplies	22,020	24,750	24,750	25,493	26,257	27,045	27,856	28,692	29,553	30,439	31,353	As Chemicals
Misc. Operating Supplies	134,680	146,000	146,000	150,380	154,891	159,538	164,324	169,254	174,332	179,562	184,948	As Misc. Operating Supplies
Property Tax Fees	0	0	0	0	0	0	0	0	0	0	0	As Property Tax Fees
Total Op Materials & Supplies	\$13,984,800	\$15,201,236	\$15,707,250	\$16,178,468	\$16,663,822	\$17,163,736	\$17,678,648	\$18,209,008	\$18,755,278	\$19,317,936	\$19,897,474	
Contractual Services												
Solids Removal	\$12,030,000	\$13,740,000	\$14,790,000	\$15,233,700	\$15,690,711	\$16,161,432	\$16,646,275	\$17,145,664	\$17,660,033	\$18,189,834	\$18,735,530	As Solids Removal
Other Waste Disposal												
Grit & Screenings Disposal	650,000	715,000	746,000	768,380	791,431	815,174	839,630	864,818	890,763	917,486	945,010	As Other Waste Disposal
Other Residual Solids	0	0	0	0	0	0	0	0	0	0	0	As Other Waste Disposal
Other Waste Disposal	126,000	126,000	126,000	129,780	133,673	137,684	141,814	146,069	150,451	154,964	159,613	As Other Waste Disposal
Groundskeeping	0	0	0	0	0	0	0	0	0	0	0	As Grounds Keeping
Janitorial	0	0	0	0	0	0	0	0	0	0	0	As Janitorial
Outside Lab Services	5,000	10,000	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	As Misc. Services
Oxygen - O & M contract	415,000	476,000	561,000	577,830	595,165	613,020	631,410	650,353	669,863	689,959	710,658	As Misc. Operating Supplies
County Service Fee	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Temporary Services	85,990	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Security Services	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
In-Plant Line Cleaning	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Other	0	0	0	0	0	0	0	0	0	0	0	As Misc. Services
Total Contractual Services	\$13,311,990	\$15,067,000	\$16,233,000	\$16,719,990	\$17,221,590	\$17,738,237	\$18,270,385	\$18,818,496	\$19,383,051	\$19,964,542	\$20,563,479	

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>							<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>		<i>FY 2031-32</i>
Total Professional Services	1,285,790	1,584,000	1,632,000	1,680,960	1,731,389	1,783,330	1,836,830	1,891,935	1,948,693	2,007,154	2,067,369	As Professional Services
Total Research & Monitoring	0	0	0	0	0	0	0	0	0	0	0	As Research & Monitoring
Total Repairs & Maintenance	22,281,730	20,712,851	23,917,195	24,634,711	25,373,752	26,134,965	26,919,014	27,726,584	28,558,382	29,415,133	30,297,587	As Repairs & Maintenance
Utilities												
Telephone	0	0	0	0	0	0	0	0	0	0	0	As Telephone
Diesel For Generators	31,410	0	0	0	0	0	0	0	0	0	0	As Fuel
Natural Gas - Total	1,050,695	1,447,000	1,395,000	1,436,850	1,479,956	1,524,354	1,570,085	1,617,187	1,665,703	1,715,674	1,767,144	As Natural Gas
Power - Total	6,574,619	8,340,000	8,048,000	8,289,440	8,538,123	8,794,267	9,058,095	9,329,838	9,609,733	9,898,025	10,194,966	As Power
Water - Total	995,200	852,000	876,400	902,692	929,773	957,666	986,396	1,015,988	1,046,467	1,077,861	1,110,197	As Water
Total Utilities	\$8,651,924	10,639,000	10,319,400	10,628,982	10,947,851	11,276,287	11,614,576	11,963,013	12,321,903	12,691,560	13,072,307	
Total Other Operat. Supplies	9,710	14,300	14,300	14,729	15,171	15,626	16,095	16,578	17,075	17,587	18,115	As Misc. Operating Supplies
Total General Manager	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Total Other Non-Operating	15,766	7,520	7,520	7,746	7,978	8,217	8,464	8,718	8,979	9,249	9,526	As Other Non-Operating Costs
Total Matls, Supply, & Svc.	\$59,791,611	\$63,644,587	\$68,221,815	\$70,268,469	\$72,376,524	\$74,547,819	\$76,784,254	\$79,087,781	\$81,460,415	\$83,904,227	\$86,421,354	
Oper Requirement Before Cost Allocation	\$96,964,311	\$103,495,041	\$110,025,869	\$113,326,645	\$116,726,444	\$120,228,238	\$123,835,085	\$127,550,137	\$131,376,642	\$135,317,941	\$139,377,479	
Cost Allocation:												
In/(Out) Svc Div to Line Div	(646,820)	114,800	114,800	118,244	121,791	125,445	129,208	133,085	137,077	141,190	145,425	As Miscellaneous Expense
In/(Out) OCSD Equip Rental	125,640	125,640	125,640	129,409	133,291	137,290	141,409	145,651	150,021	154,521	159,157	As Miscellaneous Expense
In/(Out) Lab Charges	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
(Out) to CIP for Salary	(159,160)	(172,400)	(180,700)	(186,121)	(191,705)	(197,456)	(203,379)	(209,481)	(215,765)	(222,238)	(228,905)	As Miscellaneous Expense
(Out) to CIP for OH	(197,000)	(205,130)	(215,020)	(221,471)	(228,115)	(234,958)	(242,007)	(249,267)	(256,745)	(264,447)	(272,381)	As Miscellaneous Expense
In/<Out> to RA for Salary	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for OH	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
In/<Out> to RA for Non-Sal	0	0	0	0	0	0	0	0	0	0	0	As Miscellaneous Expense
Cost Allocation - Total	(\$877,340)	(\$137,090)	(\$155,280)	(\$159,938)	(\$164,737)	(\$169,679)	(\$174,769)	(\$180,012)	(\$185,412)	(\$190,975)	(\$196,704)	
Total Plant No. 1 & 2 Operations & Maintenance	\$96,086,971	\$103,357,951	\$109,870,589	\$113,166,707	\$116,561,708	\$120,058,559	\$123,660,316	\$127,370,125	\$131,191,229	\$135,126,966	\$139,180,775	

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 2 - Sources & Application of Funds

	<i>Estimated</i>	<i>Preliminary</i>	<i>Preliminary</i>	<i>Projected</i>								<i>Notes</i>	
	<i>FY 2021-22</i>	<i>FY 2022-23</i>	<i>FY 2023-24</i>	<i>FY 2024-25</i>	<i>FY 2025-26</i>	<i>FY 2026-27</i>	<i>FY 2027-28</i>	<i>FY 2028-29</i>	<i>FY 2029-30</i>	<i>FY 2030-31</i>	<i>FY 2031-32</i>		
Additional Expenditures (Input on Dashboard)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total Operations & Maintenance Expense	\$182,579,269	\$201,144,702	\$209,891,777	\$216,188,530	\$222,674,186	\$229,354,412	\$236,235,044	\$243,322,095	\$250,621,758	\$258,140,411	\$265,884,623		
<i>Annual % Change in O&M Expense</i>		10.2%	4.3%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%		
Capital Funding Analysis													
Capital Expenditures	\$203,320,511	\$284,617,363	\$329,320,433	\$311,961,390	\$321,793,493	\$322,826,459	\$324,753,539	\$353,913,646	\$308,176,430	\$251,753,302	\$249,061,975	\$3,058,178,030	
Plus: Future Renewal and Replacement	0	0	10,000,000	2,157,930	5,876,342	18,770,190	15,621,645	40,551,097	64,524,757	92,799,943	105,705,540	\$356,007,444	
Additional Capital Expenditures	0	0	0	0	0	0	0	0	0	0	0	0	
Capital Expenditures	\$203,320,511	\$284,617,363	\$339,320,433	\$314,119,320	\$327,669,835	\$341,596,649	\$340,375,184	\$394,464,743	\$372,701,187	\$344,553,245	\$354,767,515		
Transfer in from Other Funds to Pay for Capital													
Less: CIP Savings & Deferrals	\$0	(\$16,449,864)	(\$24,012,792)	(\$32,206,601)	(\$26,986,247)	(\$48,638,749)	(\$45,384,259)	(\$45,113,230)	(\$28,580,844)	\$1,779,946	(\$73,536,991)	(\$339,129,631)	Input from Cashflow
CFCC & SCFCC Revenue	(17,205,244)	(17,923,752)	(18,533,000)	(19,623,000)	(19,779,000)	(19,937,000)	(20,103,000)	(20,265,000)	(20,430,000)	(20,600,000)	(20,768,000)	Cashflow file	
Grant Funding	0	0	0	0	0	0	0	0	0	0	0	0	
Revenue Bonds	0	0	0	0	0	0	0	0	0	0	0	0	
Low Interest Loans	0	0	0	0	0	0	0	0	0	0	0	0	
Capital Funded Through Rates (Capital Exp less Transfer In)	\$186,115,267	\$250,243,747	\$296,774,641	\$262,289,719	\$280,904,588	\$273,020,900	\$274,887,925	\$329,086,513	\$323,690,343	\$325,733,191	\$260,462,524	\$2,877,094,091	\$287,709,409.08
Transfers Out													
Equity Purchases (Joint Operations)	\$0	\$3,500,000	\$3,500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Self Insurance Fund Requirements	3,269,700	3,690,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000	3,850,000		
Total Transfers Out	\$3,269,700	\$7,190,000	\$7,350,000	\$3,850,000	\$3,850,000	\$3,850,000	\$3,850,000	\$3,850,000	\$3,850,000	\$3,850,000	\$3,850,000		
Transfers In													
Blank	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total Transfers In	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
Debt Service													
2010A Build America Bonds	\$2,984,334	\$2,986,574	\$2,986,574	\$2,986,574	\$2,986,574	\$2,986,574	\$2,986,574	\$2,986,574	\$2,986,574	\$2,986,574	\$2,986,574	Debt Schedule	
2010C Build America Bonds	6,724,010	6,724,010	6,724,010	6,724,010	6,724,010	6,724,010	6,724,010	6,724,010	6,724,010	12,459,010	23,382,068	Debt Schedule	
2011A	2,019,050	0	0	0	0	0	0	0	0	0	0	Debt Schedule	
2012A	3,735,900	0	0	0	0	0	0	0	0	0	0	Debt Schedule	
2012B	8,446,150	0	0	0	0	0	0	0	0	0	0	Debt Schedule	
2014A Refunding	11,049,000	11,046,750	11,044,000	11,049,750	11,052,500	11,051,250	0	0	0	0	0	Debt Schedule	
2015A Refunding	6,375,500	6,375,500	6,375,500	6,375,500	6,375,500	6,375,500	21,615,500	21,658,500	20,776,250	10,228,000	3,702,250	Debt Schedule	
2016A Refunding	11,389,800	11,391,550	11,396,050	11,392,550	11,390,800	11,390,050	11,394,550	11,388,300	11,391,050	11,411,550	11,413,050	Debt Schedule	
2017A Refunding	3,290,750	3,290,750	3,290,750	3,290,750	3,290,750	18,405,750	18,365,000	18,323,500	19,204,500	0	0	Debt Schedule	
2018A	2,356,278	0	0	0	0	0	0	0	0	0	0	Debt Schedule	
2021A Refunding	8,844,836	22,672,000	22,713,500	22,672,250	22,725,250	7,485,750	7,486,000	7,489,750	7,486,250	7,490,250	7,485,750	Debt Schedule	
2022A Refunding	0	4,081,000	4,081,000	4,081,000	4,081,000	4,081,000	4,081,000	4,081,000	4,081,000	26,566,000	25,761,750	Debt Schedule	
New Low Interest Loan	0	0	0	0	0	0	0	0	0	0	0	Calculated @ 4.5% for 20 yrs	
New COP	0	0	0	0	0	0	0	0	0	0	0	Calculated @ 3% for 10 yrs	
Debt Issuance Costs	630,847	0	0	0	0	0	0	0	0	0	0		
Total	\$67,846,455	\$68,568,134	\$68,611,384	\$68,572,384	\$68,626,384	\$68,499,884	\$72,652,634	\$72,651,634	\$72,649,634	\$71,141,384	\$74,731,442		

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 2 - Sources & Application of Funds

	Estimated	Preliminary	Preliminary	Projected								Notes
	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	
Total Revenue Requirements	\$439,810,691	\$527,146,583	\$582,627,802	\$550,900,633	\$576,055,158	\$574,725,196	\$587,625,603	\$648,910,242	\$650,811,735	\$658,864,986	\$604,928,589	
<i>Annual % Change in Revenue Requirement</i>			10.5%	-5.4%	4.6%	-0.2%	2.2%	10.4%	0.3%	1.2%	-8.2%	
Balance / (Deficiency) of Funds	\$27,783,678	(\$41,697,380)	(\$96,972,432)	(\$75,455,111)	(\$94,954,942)	(\$88,780,484)	(\$96,368,469)	(\$150,369,539)	(\$146,951,001)	(\$149,287,344)	(\$91,862,646)	
Rate Adjust. as a % of Rate Rev		12.4%	28.8%	22.4%	28.1%	26.2%	28.3%	44.1%	42.9%	43.5%	26.7%	
Proposed Rate Adjustment [July]	0.0%	0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	
Add'l Rev from Proposed Adj.	\$0	\$0	\$11,775,690	\$24,032,224	\$36,787,971	\$50,061,994	\$63,874,084	\$78,244,783	\$93,195,414	\$108,748,111	\$124,925,848	
Net Bal/(Def) of Funds After Rate Adj.	\$27,783,678	(\$41,697,380)	(\$85,196,742)	(\$51,422,887)	(\$58,166,972)	(\$38,718,491)	(\$32,494,385)	(\$72,124,756)	(\$53,755,587)	(\$40,539,233)	\$33,063,202	
Additional Rate Increase Needed		12.4%	25.3%	15.2%	17.2%	11.4%	9.5%	21.1%	15.7%	11.8%	-9.6%	
Residential Bill (1 EDU)	\$343.00	\$347.00	\$359.15	\$371.72	\$384.73	\$398.19	\$412.13	\$426.55	\$441.48	\$456.93	\$472.93	
\$ Change Per Year		4.00	12.15	12.57	13.01	13.47	13.94	14.42	14.93	15.45	15.99	
Cumulative \$ Change per Year		4.00	16.15	28.72	41.73	55.19	69.13	83.55	98.48	113.93	129.93	
Debt Service Coverage Ratio w/o CFCC												
Before Rate Adjustment	4.20	4.15	4.02	3.78	3.77	3.75	3.51	3.51	3.49	3.53	3.31	
After Rate Adjustment	4.20	4.15	4.19	4.13	4.30	4.48	4.39	4.59	4.77	5.06	4.98	
Target Coverage		1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	
Required Coverage		1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
Cash Reserves												
Wastewater Fund Working Cash												
Beginning Balance	\$964,225,021	\$992,008,699	\$964,903,926	\$893,541,767	\$855,136,335	\$809,360,156	\$782,491,679	\$761,490,961	\$700,247,633	\$656,592,594	\$625,598,205	
Plus: Revenue	327,459,387	335,486,676	336,448,278	337,412,766	338,380,147	339,350,431	340,323,625	341,299,739	342,278,781	343,260,760	344,245,685	
Plus: Additional Revenue with Rate Adjustment	0	0	11,775,690	24,032,224	36,787,971	50,061,994	63,874,084	78,244,783	93,195,414	108,748,111	124,925,848	
Plus Misc Revenue	134,383,982	149,962,527	149,207,091	138,032,756	142,720,069	146,594,281	150,933,509	157,240,964	161,581,953	166,316,882	168,820,258	
Plus: Debt Proceeds	0	0	0	0	0	0	0	0	0	0	0	
Less: Expense	(182,579,269)	(201,144,702)	(209,891,777)	(216,188,530)	(222,674,186)	(229,354,412)	(236,235,044)	(243,322,095)	(250,621,758)	(258,140,411)	(265,884,623)	
Less: Capital Funded Through Rates	(186,115,267)	(250,243,747)	(296,774,641)	(262,289,719)	(280,904,588)	(273,020,900)	(274,887,925)	(329,086,513)	(323,690,343)	(325,733,191)	(260,462,524)	
Less: Equity Purchase/Self Insurance Fund	(3,269,700)	(7,190,000)	(7,350,000)	(3,850,000)	(3,850,000)	(3,850,000)	(3,850,000)	(3,850,000)	(3,850,000)	(3,850,000)	(3,850,000)	
Less: Debt Service	(67,846,455)	(68,568,134)	(68,611,384)	(68,572,384)	(68,626,384)	(68,499,884)	(72,652,634)	(72,651,634)	(72,649,634)	(71,141,384)	(74,731,442)	
Interest Earnings	5,751,000	14,592,608	13,834,583	13,017,455	12,390,793	11,850,014	11,493,667	10,881,429	10,100,548	9,544,845	9,631,947	
Ending Balance	\$992,008,699	\$964,903,926	\$893,541,767	\$855,136,335	\$809,360,156	\$782,491,679	\$761,490,961	\$700,247,633	\$656,592,594	\$625,598,205	\$668,293,354	
Target Balance	530,575,102	547,681,180	555,145,550	561,161,477	567,303,124	573,586,906	579,590,739	585,603,049	591,722,035	598,097,312	604,172,824	
Target Balance Calculation												
50% Next Year Operating Expense	91,289,635	100,572,351	104,945,889	108,094,265	111,337,093	114,677,206	118,117,522	121,661,048	125,310,879	129,070,206	132,942,312	
10% Next Year Operating Expense	18,257,927	20,114,470	20,989,178	21,618,853	22,267,419	22,935,441	23,623,504	24,332,210	25,062,176	25,814,041	26,588,462	
100% Next Year AVG COP Svc.	22,781,248	19,266,567	18,515,692	17,726,192	16,898,192	16,027,442	15,116,317	14,055,817	12,942,317	11,773,192	10,508,221	
50% average ten-year CIP Balance	153,752,792	153,752,792	153,752,792	153,752,792	153,752,792	153,752,792	153,752,792	153,752,792	153,752,792	153,752,792	153,752,792	
Debt Svc @ 10% Outstanding COP	81,978,500	78,975,000	75,817,000	72,505,000	69,022,000	65,377,500	61,135,500	56,681,500	52,005,000	47,245,500	41,874,000	
Self Funded Insurance @ \$100M	100,000,000	100,000,000	103,500,000	107,122,500	110,871,788	114,752,300	118,768,631	122,925,533	127,227,926	131,680,904	136,289,735	
Repl & Refurb	62,515,000	75,000,000	77,625,000	80,341,875	83,153,841	86,064,225	89,076,473	92,194,149	95,420,945	98,760,678	102,217,301	
*Reserve Reduction (in accordance with Board action allowing a \$40M reduction to total reserves)										0	0	Removed
Target Reserve Balance	530,575,102	547,681,180	555,145,550	561,161,477	567,303,124	573,586,906	579,590,739	585,603,049	591,722,035	598,097,312	604,172,824	
*Reserve Reduction (in accordance with Board action allowing a \$40M reduction to total reserves)												

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11-33 Edinger Pump Station Replacement		\$653,065	\$1,215,193	\$932,542	\$1,852,613	\$7,634,876	\$3,453,562	\$1,456,768				\$17,198,619
11-34 Slater Pump Station Rehabilitation							1,606,374	1,458,981	7,458,939	12,931,486	3,880,275	27,336,055
1-23 Santa Ana Trunk Sewer Rehabilitation		2,200,761	1,545,729	1,274,915	15,283,398	18,833,312	11,675,617	3,665,465				54,479,197
1-24 Greenville Trunk Improvements		543,619	2,425,601	1,088,843	1,100,575	10,674,040	12,244,802	11,658,673	6,998,798	1,822,313		48,557,264
2-49 Taft Branch Improvements		908,635	1,630,432	8,469,720	8,682,681	2,914,405	281,031					22,886,904
2-72B Newhope-Placentia Trunk Replacement, Segment B		1,605,022										1,605,022
2-73 Yorba Linda Pump Station Removal and Dosing Station Installation			65,408	238,718	407,599	407,599	3,646,246	4,580,429	1,920,000			11,265,999
2-78 Santa Ana Canyon South River Trunk Rehabilitation			99,337	360,193	503,976	503,976	505,907	1,951,957	3,797,881	3,812,488	2,579,968	14,115,683
3-60 Knott - Miller Holder – Artesia Branch Rehabilitation		186,776	697,296	708,453	3,925,008	10,913,605	6,575,862	5,310,000				28,317,000
3-62 Westminster Blvd Force Main Replacement		5,482,851	2,043,590	428,374								7,954,815
3-64B Los Alamitos Trunk Sewer Rehabilitation		14,213,386	839,496	129,366								15,182,248
3-64C Los Alamitos Sub-Trunk and Westside Relief Interceptor Rehabilitation		2,930,426	15,876,397	18,493,912	18,592,885	522,080						56,415,700
3-66 Interstate 405 Widening Project Impacts on OCSW Sewers		71,348										71,348
3-67 Seal Beach Pump Station Replacement		1,199,571	11,577,544	25,564,010	23,848,046	13,291,693	4,403,044					79,883,908
3-68 Los Alamitos Sub-Trunk Extension					176,219	1,175,487	2,099,842	2,083,813	2,083,813	15,961,806	28,764,604	52,345,584
5-66 Crystal Cove Pump Station Rehabilitation				100,943	369,259	450,188	451,913	3,083,315	4,990,871	2,086,511	2,370,000	13,903,000
5-67 Bay Bridge Pump Station Replacement		2,500,810	5,275,140	12,934,273	23,080,645	23,624,408	14,101,299	9,843,724	2,934,970			94,295,269
5-68 Newport Beach Pump Station Pressurization Improvements		1,148,196	1,101,915	259,162								2,509,273
6-20 Fairview Trunk Rehabilitation		604,157	859,273	1,636,246	7,311,129	6,806,200	1,959,346					19,176,351
7-63 MacArthur Pump Station Rehabilitation		50,828	203,387	293,967	302,069	947,694	3,385,234	2,555,821	1,590,000			9,329,000
7-64 Main Street Pump Station Rehabilitation						134,639	710,670	1,130,083	1,130,083	1,678,885	26,458,639	31,242,999
7-65 Gisler-Red Hill Interceptor and Baker Force Main Rehabilitation		9,688,401	18,268,938	12,465,155	2,029,322							42,451,816
7-66 Sunflower and Red Hill Interceptor Repairs		3,325,654	307,066									3,632,720
7-68 MacArthur Force Main Improvements		312,173	5,024,553	754,452	472,280							6,563,458
7-69 North Trunk - Yorba Street Sub-Trunk Improvements			101,207	328,649	437,910	437,910	3,519,473	4,168,853	1,860,000			10,854,002
Equipment Equipment Purchases		6,949,700	7,851,002									14,800,702
FE10-21 Area 02 Craig Regional Park Manhole Improvements		150,404	11,556									161,960
FE17-03 Battery Storage System at Plant No. 1		1,486										1,486
FE17-05 Plant 1 ICS Network Extension		91,844										91,844
FE18-06 CenGen Instrument Air Compressors Replacement at Plant No. 1		388,316	351,021	147,200								886,537
FE18-08 West Trunk Bypass Sewer Realignment												0
FE18-11 Headworks Explosive Gas Monitoring Systems at Plant No. 1 and No. 2		15,818										15,818

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FE18-12 Erosion Control at Santa Ana River and Hamilton Ave		51,425										51,425
FE18-13 Redhill Relief Sewer Relocation at State Route 55		2,535,656	279,204	174,476								2,989,336
FE18-14 Plant Water Pipeline Replacement in Kinnison, Lindstrom, and Scott Tunnels at Plant No. 2		707,753	199,631									907,384
FE18-15 Plant Boiler System Relief at Plant No. 2		49,219	21,607									70,826
FE18-16 Truck Loading Basement Drain Modifications at Plant No. 1		119,493	19,983									139,476
FE18-19 12KV Distribution B and East RAS Pump Station Roofing Replacement		82,085										82,085
FE18-20 DAFT Air Compressors Replacement at Plant No. 1		543,146	428,211	126,230								1,097,587
FE19-01 Pump Station Portable Generator Connectors		1,470,229	362,585	328,050								2,160,864
FE19-02 Cengen Plant Water Pipe Replacement at Plant No. 1		197,983	2,850,342	550,351	149,696							3,748,372
FE19-03 Trickling Filter Sludge and Scum Pumps Replacement at Plant No. 1		593,722	921,145	1,170,277								2,685,144
FE19-04 Sunflower Pump Replacement at Plant No. 1		1,732,102	1,369,851	332,305								3,434,258
FE19-06 EPSA Motor Cooling Improvements at Plant No. 2		1,036,119	38,046									1,074,165
FE19-08 Secondary Treatment VFD Replacements at Plant No. 2		469,550	1,287,126	840,262	65,871							2,662,809
FE19-10 Digesters C, D, F, G and I Gas Balance Lines Replacement at Plant No. 2		1,754,988	163,823	156,706								2,075,517
FE19-11 Primary Clarifiers Nos. 6-31 Lighting and Alarm Improvements at Plant No. 1		12,079	17,940	80,918	48,651							159,588
FE19-12 Rebuild Shop Fume Extractor Installation at Plant No 1		399,458	36,383									435,841
FE19-13 VFD Replacements at Seal Beach Pump Station		208,296	65,577									273,873
FE20-01 Wastehauler Station Safety and Security Improvements		176,706	885,754	243,878								1,306,338
FE20-02 Digester C, D, F, and G Mechanical Rehabilitation at Plant No. 2		364,793	2,172,081	1,104,456								3,641,330
FE20-03 Return Activated Sludge Discharge Piping Replacement at Activated Sludge Plant No. 1		516,630	3,151,866	855,593								4,524,089
FE20-04 Cengen Cooling Water Pipe Replacement at Plant No. 2		253,719	998,739	2,681,158	1,019,096	2,530						4,955,242
FE20-05 Plant Water Piping Replacement at Secondary Clarifiers 1-26 at Plant No. 1		911,695	268,380	268,159								1,448,234
FE20-06 Thickening and Dewatering Building Pipe Support Improvements at Plant No. 1		870,461	309,245									1,179,706
FE20-07 Santa Ana Trunk Rehabilitation at Plant No. 1		597,011	50,672									647,683
FE20-08 Olive Sub-Trunk Siphon Rehabilitation at Santa Ana River		211,911	2,266,894	162,102								2,640,907
FE20-09 CenGen Smoke Detection Improvements at Plant No. 1 and No. 2		117,904	405,360	64,964								588,228
FE20-10 Adolfo Lopez Chemical Dosing Station Installation		164,119	685,089	86,269	6,276							941,753
FE21-01 Plasma Cutting Fume Extractor installation at Plant No. 1 Rebuild Shop		222,842	36,915									259,757
FE21-02 Lighting Improvements Boiler and Sludge Dewatering Areas at Plant No. 1		232,764	38,026									270,790
FE21-04 Thickening and Dewatering Facility Handrail Installation at Plant No. 1		145,722	37,444	3,036								186,202
FE21-05 Warehouse Stations and Demolition at Plant No. 2		291,508	1,652,322	219,191								2,163,021
FE21-06 Chemical Dosing Station Installation at Westside Pump Station		187,356	264,827	56,258								508,441
IT16-09 iPACS Enhancements				664	42,780	12,831						56,275
IT18-09 Records Management Information System												0
IT19-01 IT Safety VPP Systems (IT19-01)												0

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IT19-05 IT P1 & P2 Data Refresh (IT19-05)		1,070,000										1,070,000
IT20-05 Client Management Modernization (ICE-69_IT20-05) 6520005		71,603										71,603
IT20-06 Nintex Workflow Cloud Implementation (ICE-75_IT20-06) 6520006												0
IT20-07 Professional Services for Valo/SharePoint (ICE-74_IT20-07) 6520007		27,835										27,835
IT20-08 Field Computer for Nerissa and Interface with LIMS(ICE-68_IT20-07) 6520008		77,822										77,822
IT20-09 ITSM Migration (ICE-70_IT20-09) 6520009												0
IT20-10 Digitize Quality Assurance Tracking Processes /TNI/ELAP Standards(ICE-76_IT20-10) 6520010		89,317										89,317
IT20-12 Web-based Cloud Proxy Security with an Isolation Platform (ICE-78_6520012)												0
IT21-01 Access Network Equipment Obsolescence Replacement (ICE-79_IT21-01) 6521001		1,009,193										1,009,193
IT21-02 Hyper Converged Infrastructure for Plant 1 ICS network (ICE-80 IT21-02) 6521002		139,321										139,321
IT21-03 Door Access Control System for P2 Construction Management Trailers (ICE-83_IT21-036521003)												0
IT21-04 Databridge Scale Management Software (ICE - 84_IT21-04)		35,946										35,946
IT21-05 JD Edwards Server Migration and Upgrade (ICE - 86_IT21-05)		68,628										68,628
IT21-06 Dig-Smart Fusion (ICE - 89_I6521006_T21-06)												0
IT21-07 Advanced Email Security (ICE - 90_I6521007_T21-07)												0
J-117B Outfall Low Flow Pump Station	19,862,966	15,084,374	14,757,711	1,459,625								51,164,676
J-120 Process Control Systems Upgrades	7,399,012	6,560,418	5,520,288	4,781,569	6,528,988							30,790,275
J-120A Control Room Reconfiguration at Plant No. 1 and Plant No. 2	302,051	679,900	2,414,697	368,945								3,765,593
J-124 Digester Gas Facilities Replacement	146,143	902,218	25,642,216	28,641,424	28,855,782	29,017,652	28,071,955	15,317,316	353,603			156,948,309
J-127 Natural Gas Pipelines Replacement at Plant Nos. 1 and 2	78,826											78,826
J-128 Project Management Information System	670,937											670,937
J-133 Laboratory Rehabilitation/Replacement at Plant No 1		923,219	2,672,251	2,745,896	2,745,896	6,865,716	21,479,548	21,586,207	20,900,267	20,081,000		100,000,000
J-135 Central Generation Engine Overhauls at Plant No. 1 and 2	71,165	71,165	72,304	1,028,970	5,955,937	5,976,457	1,698,637					14,874,635
J-135A Central Generation Engine Overhaul at Plant No. 1												0
J-135B Engine and Generator Overhauls at Plant No. 1 and 2	1,423,029	8,281,455	6,213,391	6,925,238	1,156,887							24,000,000
J-136 Power Building Structural Seismic Improvements at Plant No. 1 and 2	215,186	523,480	960,224	2,079,332	1,438,535	147,523						5,364,280
J-137 120-inch Ocean Outfall Rehabilitation	38,022	686,862	2,314,826	2,378,620	2,378,620	4,866,988	8,399,741	10,183,630	13,634,227	20,086,463		64,967,999
J-36-2 GWRS Final Expansion Coordination	272,061											272,061
J-98 Electrical Power Distribution System Improvements	2,119,310	5,283,711	5,550,105	5,792,820	3,883,910	1,661,830						24,291,686
M-FE Small Construction Projects Program	3,040,666	3,029,015	3,040,666	3,040,666	3,040,666	3,052,316	3,029,015	3,017,365				24,290,375
M-MC-IT Information Technology Capital Program	418,281	418,281	424,973	436,685	436,685	438,358	435,012	435,012	436,685	438,358		4,318,330
M-RESEARCH Research Program	253,856	253,856	257,918	265,026	265,026	266,042	264,011	264,011				2,089,746
M-SM-CAP Operations & Maintenance Capital Program	998,441	998,441	1,014,416	1,042,372	1,042,372	1,046,366	1,038,379	1,038,379	1,042,372	1,042,372		10,303,910
M-STUDIES Planning Studies Program	1,803,657	1,803,659	1,832,517	1,883,020	1,883,020	1,890,235	1,875,805	1,875,805				14,847,718
P1-101 Sludge Dewatering and Odor Control at Plant 1												0

Project and Name	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	Total
P1-105 Headworks Rehabilitation at Plant 1		34,978,473	77,053,946	38,199,385	35,716,381	25,793,517	20,396,147	28,689,509				260,827,358
P1-126 Primary Sedimentation Basins No. 3-5 Replacement at Plant No. 1		2,729,469	3,209,282	5,426,802	5,778,971	4,657,459	17,353,718	50,373,386	50,307,339	17,573,189	11,218,474	168,628,089
P1-127 Central Generation Rehabilitation at Plant No. 1							316,114	1,555,021	1,664,845	6,645,842	11,702,420	21,884,242
P1-128A Headquarters Complex at Plant No. 1		61,197,824	20,767,264	3,160,783								85,125,871
P1-129 Return Activated Sludge Piping Replacement at Activated Sludge Plant No. 1												0
P1-132 Uninterruptable Power Supply Improvements at Plant 1		1,931,268	3,016,195	658,489								5,605,952
P1-133 Primary Sedimentation Basins No. 6-31 Reliability Improvements at Plant No. 1		2,629,590	5,359,565	2,164,631	1,325,470							11,479,256
P1-134 South Perimeter Security and Utility Improvements at Plant No.1		3,738,937	395,278									4,134,215
P1-135 Digester Ferric Chloride Piping Replacement at Plant No. 1		89,718	125,953									215,671
P1-136 12.47 kV Switchgear Replacement at Central Generation at Plant No. 1				116,610	620,407	917,016	1,725,909	2,718,663	2,718,663	2,729,119	1,411,613	12,958,000
P1-137 Supports Buildings Seismic Improvements at Plant No. 1		769,029	1,604,316	2,392,194	4,936,630	4,968,870	4,872,965	2,840,724	1,258,507			23,643,235
P1-138 Industrial Control System and IT Data Center Relocation at Plant No. 1		219,007	348,263	1,118,009	2,696,326	911,655	406,741					5,700,001
P1-140 Activated Sludge-1 and Secondary Clarifier Rehabilitation		1,096,587	3,480,928	5,021,352	6,081,208	8,740,959	23,171,695	46,932,491	69,684,749	52,561,716	44,380,768	261,152,453
P1-141 Administrative Facilities and Power Building 3A Demolition		62,055	202,542	541,015								8,910,000
P2-119 Central Generation Rehabilitation at Plant No. 2						83,594	1,488,701	2,814,117	2,814,117	14,471,620	15,018,247	36,690,396
P2-122 Headworks Modifications at Plant No. 2 for GWRS Final Expansion		4,930,161	965,602									5,895,763
P2-123 Return Activated Sludge Piping Replacement at Plant 2		1,233,062	97,580									1,330,642
P2-124 Interim Food Waste Receiving Facility		10,140	16,899	2,741,215	2,009,722	170,558						4,948,534
P2-127 Collections Yard Relocation		168,067	1,296,029	378,996								1,843,092
P2-128 TPAD Digester Facility at Plant No.2		10,444,998	9,502,649	12,986,772	27,365,504	57,515,733	63,336,895	62,705,249	62,290,170	43,092,505	27,041,661	376,282,136
P2-128A TPAD Perimeter Wall			10,598,838	21,393,098	19,071,238	2,136,826						53,200,000
P2-129 Digester P, Q, R, and S Replacement					297,610	1,811,097	2,716,091	2,695,357	2,695,357	22,754,201	26,430,316	59,400,029
P2-133 B/C-Side Primary Sedimentation Basins Rehabilitation at Plant No. 2								330,662	3,219,097	6,133,298	6,156,797	15,839,854
P2-135 Sodium Bisulfite Station Rehabilitation at Plant No. 2		167,537	431,386	581,128	2,752,130	738,913	288,713					4,959,807
P2-136 Activated Sludge Aeration Basin Rehabilitation at Plant No. 2		297,355	2,392,285	1,704,046	3,010,558	14,536,946	23,615,192	7,773,508	12,208,734			65,538,624
P2-137 Digesters Rehabilitation at Plant No. 2		1,843,646	1,486,783	8,989,585	11,258,867	10,731,550	6,063,725					40,374,156
P2-138 Operations and Maintenance Complex at Plant No. 2		832,402	2,370,340	2,560,121	2,589,540	8,651,512	23,309,476	22,722,610	9,631,772	11,131,169		83,798,942
P2-139 Emergency Overflow Wingwalls Rehabilitation at Plant No. 2		117,241	224,545	234,118	1,523,041	2,271,054						4,369,999
P2-140 Truck Loading Bay Odor Control Improvements at Plant No. 2			95,012	287,368	372,342	416,596	2,706,318	2,522,364	1,200,000			7,600,000
P2-98A A-Side Primary Clarifiers Replacement at Plant 2		30,540,734	35,935,487	29,809,992	16,726,884	15,237,784	5,515,434					133,766,315
P2-98B B/C-Side Primary Clarifiers Interim Repair at Plant 2												0
PS17-03 Active Fault Location Study at Plant No. 2												0
PS18-06 Go/No-Go Lights and Signage		99,262										99,262
PS18-09 Ocean Outfall Condition Assessment and Scoping Study		55,300										55,300
PS19-03 Laboratory Rehabilitation Feasibility Study		12,593										12,593

Project and Name	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	Total
PS20-01 Collections Yard Relocation Feasibility Study		69,513										69,513
PS20-02 Collection System Flow Level Monitoring Study		197,168	302,937	113,391	6,751							620,247
PS20-03 Truck Loading Bay Odor Control Improvements Study at Plant No. 2		160,469										160,469
PS20-04 Power Generation Overhaul Feasibility Study												0
PS20-05 Cen Gen Pressure Vessel Integrity Assessment at Plant Nos. 1 and 2		233,863										233,863
PS20-07 College Pump Station Wet Well Condition Assessment Study		67,425										67,425
PS20-08 Euclid Trunk Sewer Hydraulic Modeling and Odor Control Analyses		205,952										205,952
PS20-09 Thickening & Dewatering Plant Water Study at Plant No. 1		258,320	70,192									328,512
PS21-01 Exterior Lighting Study at Plant Nos. 1 and 2		301,867	221,877									523,744
PS21-02 Public Announcement and Fire System at Plant Nos. 1 and 2		307,605	151,009									458,614
PS21-03 Process Model for Denitrification Alternatives at Activated Sludge 1		9,698										9,698
PS21-04 Energy and Digester Gas Master Plan		782,721	285,741									1,068,462
PS21-05 CAD Design Manual Update for 3D Design		468,372	210,392									678,764
PS21-06 Regional Urban Runoff Optimization Study		117,587	673,604	177,140								968,331
RE19-01 Primary Scum Equipment Evaluation at Plant No. 1		15,405										15,405
RE20-01 Co-Thickened Sludge Density Meter Trial at Plant No. 1		1,931										1,931
RE20-02 Chemical Resilience Study at Plant No.1 and 2		22,396										22,396
RE20-04 Holding Digester 6 Solids Shredder Study at Plant No. 1		17,649										17,649
RE20-06 Co-Thickened Sludge Pump Trial at Plant No. 1			15,000									15,000
RE21-01 Supercritical Water Oxidation Demonstration at Plant No. 1		5,690,537	1,182,571									6,873,108
SC18-05 P1 Laboratory HVAC Boiler Burner Replacement At Plant No.1												0
SC19-03 Return Activated Sludge Pump Station Elevator Rehabilitation at Plant No. 2		189,949	173,044									362,993
SC19-06 EPSA Standby Power Generator Control Upgrades at Plant No. 2		141,326	440,448	2,007,955	474,025	364,093						3,427,847
SC20-02 Ocean Outfall Booster Station Elevator Rehabilitation		299,953	77,076	4,790								381,819
SP-100 EAM Software and Process Implementation		383,372	383,372	389,506	1,388,238							2,544,488
SP-195 Capital Improvement Program Management Services		324,865										324,865
X-006 Waste Sidestream Pump Station Rehabilitation at Plant No. 1				1,010,181	1,877,528	11,669,291	2,730,000					17,287,000
X-007 Waste Sidestream Pump Station 2A Upgrade at Plant No. 2					202,213	479,790	522,463	3,328,711	3,626,823	1,530,000		9,690,000
X-014 Trickling Filter Solids Contact Basins Odor Control at Plant No. 2											117,817	117,817
X-015 Trickling Filters Rehabilitation at Plant No. 1									326,129	1,311,545	4,179,121	5,816,795
X-017 Primary Sedimentation Basins No. 6-31 Rehabilitation at Plant No. 1												0
X-018 Activated Sludge - 2 Rehabilitation at Plant No. 1												0
X-022 15th Street Pump Station and Force Main Rehabilitation												0
X-023 Lido Pump Station Rehabilitation							228,325	557,934	557,934	795,655	7,707,443	9,847,291
X-024 Rocky Point Pump Station Rehabilitation											82,553	82,553

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 3 - Capital Plan

Project and Name	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	Total
X-025 Bitter Point Pump Station Rehabilitation											365,469	365,469
X-030 Headworks Rehabilitation at Plant 2										898,266	4,377,482	5,275,748
X-031 Trickling Filter Solids Contact Facility Rehabilitation at Plant No. 2												0
X-036 City Water Pump Station Rehabilitation at Plant No. 2						403,977	702,489	697,126	1,848,279	5,662,081	4,126,047	13,439,999
X-037 Plant Water Pump Station and 12 KV Distribution Center A Demolition at Plant No. 2					55,825	193,680	228,430	764,786	1,590,796	675,483		3,509,000
X-038 City Water Pump Station Rehabilitation at Plant No. 1					63,354	330,948	472,981	472,981	2,094,588	3,856,884		7,291,736
X-039 Plant Water Pump Station Rehabilitation at Plant No. 1							455,209	690,935	771,202	5,666,957		10,560,999
X-040 College Pump Station Replacement and Force Main Rehabilitation								48,532	303,036	535,298	537,349	1,424,215
X-041 A Street Pump Station and Force Main Rehabilitation												0
X-044 Steve Anderson Lift Station Rehabilitation												0
X-052 Activated Sludge RAS/WAS/PEPS/Vaporizers Rehabilitation at Plant No. 2					187,007	1,352,431	2,053,294	2,037,620	5,283,956	11,388,788	11,432,424	33,735,520
X-059 Plantwide Miscellaneous Tunnels Rehabilitation					18,047	214,102	660,967	889,501	889,501	10,334,552	16,344,044	29,350,714
X-061 Imperial Relief Interceptor / Miller Holder Trunk Rehabilitation												0
X-065 Tustin-Orange Interceptor Rehabilitation												0
X-066 Tustin-Orange Interceptor / Orange Park Acres Trunk Rehabilitation								110,431	265,180	279,392	280,462	935,465
X-068 North Trunk - Panorama Heights - Tustin-Orange Rehabilitation				60,432	267,526	383,911	385,382	1,403,775	3,317,707	2,155,267	1,650,000	9,624,000
X-071 Bolsa Chica / Edinger / Springdale Trunk Sewer Rehabilitation				256,263	587,505	590,399	592,661	2,393,659	4,699,126	4,655,664	3,197,723	16,973,000
X-078 Air Jumpers Additions/Rehabilitations							63,413	541,957	1,110,332	1,164,330	10,935,620	13,815,652
X-084 Tustin Avenue Sewer Improvements								16,791	54,833	70,082	70,350	212,056
X-085 Hoover-Western Sub-Trunk and Lampson Branch Improvements						140,679	792,474	1,050,816	3,427,407	9,199,982	9,235,231	23,846,589
X-086 Santa Ana River Interceptor Improvements												0
X-095 Southern California Edison Substation and Service Center Replacement at Plant 2								459,116	1,383,695	1,695,230	1,903,759	5,441,800
X-096 Bushard Diversion Structure Improvements					111,185	269,484	271,572	1,560,959	1,626,852	803,535	78,412	4,721,999
X-098 Effluent Pump Station Annex Rehabilitation								105,558	909,288	1,732,098	1,738,734	4,485,678
X-100 Flood Wall along Brookhurst Street								489,621	1,743,266	1,754,664	1,761,386	5,748,937
X-102 Wastehauler Facility Improvements								12,600	70,594	85,657	1,135,511	1,304,362
X-104 Central Generation Facilities and Power Bldg. 2 Seismic Upgrades				291,087	953,319	1,025,700	1,152,150	6,663,256	6,663,256	6,335,233	5,130,000	28,214,001
X-105 OOBs Seismic Improvements at Plant No. 2				257,186	841,445	905,302	1,093,830	8,825,891	8,459,345	4,530,000		24,912,999
X-107 DAFTs Seismic Improvements at Plant No. 2											389,911	389,911
X-108 Lateral Spreading Mitigation at Plant No. 2												0
X-109 Lateral Spreading Mitigation at Plant No. 1												0
X-110 Solids Processing Facilities Seismic Improvements at Plant No. 1								34,832	141,349	240,022	240,941	657,144
X-112 Southwest Corner Stormwater Drainage Modifications at Plant No. 1								27,873	93,658	99,521	634,779	855,831
X-114 Activated Sludge Facility Replacement at Plant No. 2												0
X-115 Short Outfall Rehabilitation at Plant No. 2							125,076	919,360	1,550,002	1,555,963	1,561,925	5,712,326

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 3 - Capital Plan

Project and Name	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32	Total
X-116 Outfall Land Section Rehabilitation at Plant No. 2												0
X-118 84-inch Interplant Pipeline Rehabilitation at Plant 1												0
X-119 Thickening, Dewatering and Truck Loadout Rehabilitation at Plant 1												0
X-120 Digester Rehabilitation/Replacement at Plant 1												0
X-121 Lido Pump Station Replacement												0
X-122 MacArthur Pump Station Replacement Project												0
X-124 Electric Vehicle Fleet Services Building					242,986	511,167	534,362	530,283	2,826,877	5,197,000	2,638,324	12,480,999
X-125 66-inch Interplant Pipeline Rehabilitation at Plant 1						83,905	359,560	514,587	4,793,650	449,916	639,382	6,841,000
X-126 Lake Ave and Atlanta Int Rehabilitation						24,772	339,881	564,047	564,047	4,943,684	2,522,570	8,959,001
X2-72 Contingency Reserve for 2-72			10,000,000									10,000,000
X2-79 Fullerton-Brea Int and Rollings Hills Dr Subtrunk Rehabilitation				282,781	587,581	596,101	1,756,180	4,177,468	3,799,889	1,856,017	243,983	13,300,000
XP2-130 Food Waste Receiving Facility at Plant No. 2												0
XP2-131 Digester I, J, and K Replacement at Plant No. 2							277,729	1,196,447	2,179,777	2,188,160	2,937,725	8,779,838
XP2-132 Digester Demolition at Plant No. 2												0
Actual	203,320,511											203,320,511
Total	\$203,320,511	\$284,617,363	\$339,320,433	\$314,119,320	\$327,669,835	\$341,596,649	\$340,375,184	\$394,464,743	\$372,701,187	\$344,553,245	\$354,767,515	\$3,617,505,985
Capital Projects	\$0	\$284,617,363	\$329,320,433	\$311,961,390	\$321,793,493	\$322,826,459	\$324,753,539	\$353,913,646	\$308,176,430	\$251,753,302	\$249,061,975	\$3,058,178,030
Renewal and Replacement Projects	203,320,511	0	10,000,000	2,157,930	5,876,342	18,770,190	15,621,645	40,551,097	64,524,757	92,799,943	105,705,540	559,327,955
	<u>\$203,320,511</u>	<u>\$284,617,363</u>	<u>\$339,320,433</u>	<u>\$314,119,320</u>	<u>\$327,669,835</u>	<u>\$341,596,649</u>	<u>\$340,375,184</u>	<u>\$394,464,743</u>	<u>\$372,701,187</u>	<u>\$344,553,245</u>	<u>\$354,767,515</u>	<u>\$3,617,505,985</u>

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 4 - Existing Debt

Total Principal and Interest													
Fiscal Year	2010A Build America Bonds	2010C Build America Bonds	2011A	2012A	2012B	2014A Refunding	2015A Refunding	2016A Refunding	2017A Refunding	2018A	2021A Refunding	2022A Refunding	Total Interest per Fiscal Year
of Payments	Acq./Const.	Acq./Const.				(Partial 2007B)	(Partial 2007B)	(Partial 2009A)	(Remain 2007A)		(Partial 2011A and 2018A)	(2012A and Partial 2012B)	
FY 2021-22	\$2,984,334	\$6,724,010	\$2,019,050	\$3,735,900	\$8,446,150	\$11,049,000	\$6,375,500	\$11,389,800	\$3,290,750	\$2,356,278	\$8,844,836	\$0	\$67,215,608
FY 2022-23	2,986,574	6,724,010	0	0	0	11,046,750	6,375,500	11,391,550	3,290,750	0	22,672,000	4,081,000	68,568,134
FY 2023-24	2,986,574	6,724,010	0	0	0	11,044,000	6,375,500	11,396,050	3,290,750	0	22,713,500	4,081,000	68,611,384
FY 2024-25	2,986,574	6,724,010	0	0	0	11,049,750	6,375,500	11,392,550	3,290,750	0	22,672,250	4,081,000	68,572,384
FY 2025-26	2,986,574	6,724,010	0	0	0	11,052,500	6,375,500	11,390,800	3,290,750	0	22,725,250	4,081,000	68,626,384
FY 2026-27	2,986,574	6,724,010	0	0	0	11,051,250	6,375,500	11,390,050	18,405,750	0	7,485,750	4,081,000	68,499,884
FY 2027-28	2,986,574	6,724,010	0	0	0	0	21,615,500	11,394,550	18,365,000	0	7,486,000	4,081,000	72,652,634
FY 2028-29	2,986,574	6,724,010	0	0	0	0	21,658,500	11,388,300	18,323,500	0	7,489,750	4,081,000	72,651,634
FY 2029-30	2,986,574	6,724,010	0	0	0	0	20,776,250	11,391,050	19,204,500	0	7,486,250	4,081,000	72,649,634
FY 2030-31	2,986,574	12,459,010	0	0	0	0	10,228,000	11,411,550	0	0	7,490,250	26,566,000	71,141,384
FY 2031-32	2,986,574	23,382,068	0	0	0	0	3,702,250	11,413,050	0	0	7,485,750	25,761,750	74,731,442
FY 2032-33	2,986,574	23,476,472	0	0	0	0	3,702,250	11,415,550	0	0	7,487,500	38,146,500	87,214,846
FY 2033-34	12,576,574	13,967,040	0	0	0	0	20,882,250	11,408,050	0	0	7,489,500	0	66,323,414
FY 2034-35	12,696,056	13,897,232	0	0	0	0	20,883,250	11,415,050	0	0	7,486,000	0	66,377,588
FY 2035-36	12,919,416	13,834,528	0	0	0	0	20,881,250	11,409,800	0	0	7,486,500	0	66,531,494
FY 2036-37	13,151,453	13,758,096	0	0	0	0	20,879,250	11,411,800	0	0	0	0	59,200,599
FY 2037-38	13,399,607	13,667,936	0	0	0	0	0	11,411,000	0	0	0	0	38,478,543
FY 2038-39	13,658,823	13,574,048	0	0	0	0	0	11,414,000	0	0	0	0	38,646,871
FY 2039-40	13,937,832	13,481,016	0	0	0	0	0	0	0	0	0	0	27,418,848
FY 2040-41	0	22,698,216	0	0	0	0	0	0	0	0	0	0	22,698,216
FY 2041-42	0	13,457,728	0	0	0	0	0	0	0	0	0	0	13,457,728
FY 2042-43	0	10,305,640	0	0	0	0	0	0	0	0	0	0	10,305,640
FY 2043-44	0	2,583,168	0	0	0	0	0	0	0	0	0	0	2,583,168
Totals	\$128,176,409	\$265,058,288	\$2,019,050	\$3,735,900	\$8,446,150	\$66,293,250	\$203,461,750	\$205,234,550	\$90,752,500	\$2,356,278	\$174,501,086	\$123,122,250	\$1,273,157,461

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 4 - Existing Debt

Interest Fiscal Year of Payments	2010A Build	2010C Build	2011A	2012A	2012B	2014A	2015A	2016A	2017A	2018A	2021A	2022A	Total Interest per Fiscal Year
	America	America				Refunding	Refunding	Refunding	Refunding		Refunding	Refunding	
	Bonds	Bonds				(Partial 2007B)	(Partial 2007B)	(Partial 2009A)	(Remain 2007A)		(Partial 2011A and 2018A)	(2012A and Partial 2012B)	
Acq./Const.	Acq./Const.												
FY 2021-22	\$2,984,334	\$6,724,010	\$2,019,050	\$3,735,900	\$276,150	\$2,804,000	\$6,375,500	\$6,524,800	\$3,290,750	\$2,356,278	\$3,374,836	\$0	\$40,465,608
FY 2022-23	2,986,574	6,724,010				2,391,750	6,375,500	6,281,550	3,290,750		6,402,000	4,081,000	38,533,134
FY 2023-24	2,986,574	6,724,010				1,959,000	6,375,500	6,026,050	3,290,750		5,588,500	4,081,000	37,031,384
FY 2024-25	2,986,574	6,724,010				1,504,750	6,375,500	5,757,550	3,290,750		4,732,250	4,081,000	35,452,384
FY 2025-26	2,986,574	6,724,010				1,027,500	6,375,500	5,475,800	3,290,750		3,835,250	4,081,000	33,796,384
FY 2026-27	2,986,574	6,724,010				526,250	6,375,500	5,180,050	3,290,750		2,890,750	4,081,000	32,054,884
FY 2027-28	2,986,574	6,724,010				0	6,375,500	4,869,550	2,535,000		2,661,000	4,081,000	30,232,634
FY 2028-29	2,986,574	6,724,010				0	5,613,500	4,543,300	1,743,500		2,419,750	4,081,000	28,111,634
FY 2029-30	2,986,574	6,724,010				0	4,811,250	4,201,050	914,500		2,166,250	4,081,000	25,884,634
FY 2030-31	2,986,574	6,724,010				0	4,013,000	3,841,550	0		1,900,250	4,081,000	23,546,384
FY 2031-32	2,986,574	6,287,068				0	3,702,250	3,463,050	0		1,620,750	2,956,750	21,016,442
FY 2032-33	2,986,574	5,581,472				0	3,702,250	3,065,550	0		1,327,500	1,816,500	18,479,846
FY 2033-34	2,986,574	4,837,040				0	3,702,250	2,648,050	0		1,019,500	0	15,193,414
FY 2034-35	2,551,056	4,457,232				0	2,843,250	2,210,050	0		696,000	0	12,757,588
FY 2035-36	2,184,416	4,064,528				0	1,941,250	1,749,800	0		356,500	0	10,296,494
FY 2036-37	1,796,453	3,658,096				0	994,250	1,266,800	0		0	0	7,715,599
FY 2037-38	1,384,607	3,237,936				0	0	861,000	0		0	0	5,483,543
FY 2038-39	948,823	2,804,048				0	0	439,000	0		0	0	4,191,871
FY 2039-40	487,832	2,356,016				0	0	0	0		0	0	2,843,848
FY 2040-41	0	1,893,216				0	0	0	0		0	0	1,893,216
FY 2041-42	0	1,027,728				0	0	0	0		0	0	1,027,728
FY 2042-43	0	510,640				0	0	0	0		0	0	510,640
FY 2043-44	0	103,168				0	0	0	0		0	0	103,168
Totals	\$48,176,409	\$108,058,288	\$2,019,050	\$3,735,900	\$276,150	\$10,213,250	\$75,951,750	\$68,404,550	\$24,937,500	\$2,356,278	\$40,991,086	\$41,502,250	\$426,622,461

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 4 - Existing Debt

Principal Fiscal Year of Payments	2010A Build	2010C Build	2011A	2012A	2012B	2014A	2015A	2016A	2017A	2018A	2021A	2022A	Total Interest per Fiscal Year
	America	America				Refunding	Refunding	Refunding	Refunding		Refunding	Refunding	
	Bonds	Bonds				(Partial 2007B)	(Partial 2007B)	(Partial 2009A)	(Remain 2007A)		(Partial 2011A and 2018A)	(2012A and Partial 2012B)	
Acq./Const.	Acq./Const.												
FY 2021-22	\$0	\$0			\$8,170,000	\$8,245,000	\$0	\$4,865,000	\$0		\$5,470,000	\$0	\$26,750,000
FY 2022-23	0	0				8,655,000	0	5,110,000	0		16,270,000	0	\$30,035,000
FY 2023-24	0	0				9,085,000	0	5,370,000	0		17,125,000	0	31,580,000
FY 2024-25	0	0				9,545,000	0	5,635,000	0		17,940,000	0	33,120,000
FY 2025-26	0	0				10,025,000	0	5,915,000	0		18,890,000	0	34,830,000
FY 2026-27	0	0				10,525,000	0	6,210,000	15,115,000		4,595,000	0	36,445,000
FY 2027-28	0	0				0	15,240,000	6,525,000	15,830,000		4,825,000	0	42,420,000
FY 2028-29	0	0				0	16,045,000	6,845,000	16,580,000		5,070,000	0	44,540,000
FY 2029-30	0	0				0	15,965,000	7,190,000	18,290,000		5,320,000	0	46,765,000
FY 2030-31	0	5,735,000				0	6,215,000	7,570,000	0		5,590,000	22,485,000	47,595,000
FY 2031-32	0	17,095,000				0	0	7,950,000	0		5,865,000	22,805,000	53,715,000
FY 2032-33	0	17,895,000				0	0	8,350,000	0		6,160,000	36,330,000	68,735,000
FY 2033-34	9,590,000	9,130,000				0	17,180,000	8,760,000	0		6,470,000	0	51,130,000
FY 2034-35	10,145,000	9,440,000				0	18,040,000	9,205,000	0		6,790,000	0	53,620,000
FY 2035-36	10,735,000	9,770,000				0	18,940,000	9,660,000	0		7,130,000	0	56,235,000
FY 2036-37	11,355,000	10,100,000				0	19,885,000	10,145,000	0		0	0	51,485,000
FY 2037-38	12,015,000	10,430,000				0	0	10,550,000	0		0	0	32,995,000
FY 2038-39	12,710,000	10,770,000				0	0	10,975,000	0		0	0	34,455,000
FY 2039-40	13,450,000	11,125,000				0	0	0	0		0	0	24,575,000
FY 2040-41	0	20,805,000				0	0	0	0		0	0	20,805,000
FY 2041-42	0	12,430,000				0	0	0	0		0	0	12,430,000
FY 2042-43	0	9,795,000				0	0	0	0		0	0	9,795,000
FY 2043-44	0	2,480,000				0	0	0	0		0	0	2,480,000
Totals	\$80,000,000	\$157,000,000				\$56,080,000	\$127,510,000	\$136,830,000	\$65,815,000		\$133,510,000	\$81,620,000	\$846,535,000

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 4 - Existing Debt

Principal Balance													
Fiscal Year	2010A Build America Bonds	2010C Build America Bonds	2011A	2012A	2012B	2014A Refunding	2015A Refunding	2016A Refunding	2017A Refunding	2018A	2021A Refunding	2022A Refunding	Total Interest per Fiscal Year
of Payments	Acq./Const.	Acq./Const.				(Partial 2007B)	(Partial 2007B)	(Partial 2009A)	(Remain 2007A)		(Partial 2011A and 2018A)	(2012A and Partial 2012B)	
FY 2021-22	80,000,000	157,000,000	0	0	8,170,000	56,080,000	127,510,000	136,830,000	65,815,000	0	133,510,000	81,620,000	846,535,000
FY 2022-23	80,000,000	157,000,000	0	0	0	47,835,000	127,510,000	131,965,000	65,815,000	0	128,040,000	81,620,000	819,785,000
FY 2023-24	80,000,000	157,000,000	0	0	0	39,180,000	127,510,000	126,855,000	65,815,000	0	111,770,000	81,620,000	789,750,000
FY 2024-25	80,000,000	157,000,000	0	0	0	30,095,000	127,510,000	121,485,000	65,815,000	0	94,645,000	81,620,000	758,170,000
FY 2025-26	80,000,000	157,000,000	0	0	0	20,550,000	127,510,000	115,850,000	65,815,000	0	76,705,000	81,620,000	725,050,000
FY 2026-27	80,000,000	157,000,000	0	0	0	10,525,000	127,510,000	109,935,000	65,815,000	0	57,815,000	81,620,000	690,220,000
FY 2027-28	80,000,000	157,000,000	0	0	0	0	127,510,000	103,725,000	50,700,000	0	53,220,000	81,620,000	653,775,000
FY 2028-29	80,000,000	157,000,000	0	0	0	0	112,270,000	97,200,000	34,870,000	0	48,395,000	81,620,000	611,355,000
FY 2029-30	80,000,000	157,000,000	0	0	0	0	96,225,000	90,355,000	18,290,000	0	43,325,000	81,620,000	566,815,000
FY 2030-31	80,000,000	157,000,000	0	0	0	0	80,260,000	83,165,000	0	0	38,005,000	81,620,000	520,050,000
FY 2031-32	80,000,000	151,265,000	0	0	0	0	74,045,000	75,595,000	0	0	32,415,000	59,135,000	472,455,000
FY 2032-33	80,000,000	134,170,000	0	0	0	0	74,045,000	67,645,000	0	0	26,550,000	36,330,000	418,740,000
FY 2033-34	80,000,000	116,275,000	0	0	0	0	74,045,000	59,295,000	0	0	20,390,000	0	350,005,000
FY 2034-35	70,410,000	107,145,000	0	0	0	0	56,865,000	50,535,000	0	0	13,920,000	0	298,875,000
FY 2035-36	60,265,000	97,705,000	0	0	0	0	38,825,000	41,330,000	0	0	7,130,000	0	245,255,000
FY 2036-37	49,530,000	87,935,000	0	0	0	0	19,885,000	31,670,000	0	0	0	0	189,020,000
FY 2037-38	38,175,000	77,835,000	0	0	0	0	0	21,525,000	0	0	0	0	137,535,000
FY 2038-39	26,160,000	67,405,000	0	0	0	0	0	10,975,000	0	0	0	0	104,540,000
FY 2039-40	13,450,000	56,635,000	0	0	0	0	0	0	0	0	0	0	70,085,000
FY 2040-41	0	45,510,000	0	0	0	0	0	0	0	0	0	0	45,510,000
FY 2041-42	0	24,705,000	0	0	0	0	0	0	0	0	0	0	24,705,000
FY 2042-43	0	12,275,000	0	0	0	0	0	0	0	0	0	0	12,275,000
FY 2043-44	0	2,480,000	0	0	0	0	0	0	0	0	0	0	2,480,000

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 5 - EDU Definitions

	factor per sqft		% Rate	Revenue	Concentrations			lbs/Year		Gal per Year
	APNs (Parcels)	EDUs			BOD, mg/l	SS, mg/l	Flow, gpd	BOD	TSS	
000 - CONVERSION-C/I, RURAL PC LIEN DATE	12	9	100.00%	3,144	238	327	175	1,163	1,598	585,479
001 - VACANT LAND PARCEL	6,275	0	0.00%	0	0	0	0	0	0	0
002 - ONE RESIDENCE	451,281	451,297	100.00%	154,794,891	238	327	175	57,255,572.55	78,666,270	28,826,599,599
003 - TWO OR MORE RESIDENCES	8,615	13,257	70.00%	4,547,185	238	327	122	1,172,534.35	1,611,003	590,338,663
004 - MISCELLANEOUS IMPROVEMENTSONLY	1,508	239	100.00%	82,088	238	327	122	21,167.28	29,083	10,657,142
005 - COMMON AREA PARCEL	865	0	0.00%	0	0	0	0	-	0	0
006 - "HOLD" PARCEL	254	0	0.00%	0	0	0	0	-	0	0
007 - MOBILEHOME	19,552	126	50.00%	43,218	238	327	88	8,038.42	11,044	4,047,120
008 - EQUIVALENT TO VACANT	91	0	0.00%	0	0	0	0	-	0	0
010 - DUPLEX ONLY	5,851	8,219	70.00%	2,819,117	238	327	122	726,935.74	998,773	365,992,070
011 - TRIPLEX ONLY	2,333	4,881	70.00%	1,674,269	238	327	122	431,725.89	593,170	217,362,063
012 - 04-UNITS ONLY	6,987	19,502	70.00%	6,689,203	238	327	122	1,724,873.73	2,369,890	868,426,287
013 - APARTMENTS ONLY	4,436	26,317	70.00%	9,026,794	238	327	122	2,327,643.40	3,198,065	1,171,904,171
014 - 17-25 UNITS ONLY	604	8,664	70.00%	2,971,786	238	327	122	766,302.95	1,052,862	385,812,373
015 - 26-40 UNITS ONLY	386	8,632	70.00%	2,960,776	238	327	122	763,463.84	1,048,961	384,382,960
016 - 41-99 UNITS ONLY	628	26,889	70.00%	9,222,824	238	327	122	2,378,191.63	3,267,515	1,197,353,811
017 - 100 OR MORE UNITS	502	63,024	70.00%	21,617,232	238	327	122	5,574,205.88	7,658,678	2,806,458,720
018 - DEVELOPED WITH A MIX OF FORM TYPES	647	5,080	70.00%	1,742,457	238	327	122	449,308.85	617,328	226,214,597
019 - SF WITH 1 OR 2 RENTAL UNITS	50	95	85.00%	32,465	238	327	122	8,371.39	11,502	4,214,765
020 - AMUSEMENT PARKS	35	5,345	144.00%	1,833,229	247	358	239	961,075.71	1,392,976	466,244,004
021 - AUTOMOBILE DEALERSHIP	187	1,467	41.00%	503,054	248	366	68	75,339.21	111,186	36,401,725
022 - AUTO REPAIR SHOP	594	1,245	41.00%	427,114	248	366	68	63,966.19	94,402	30,906,614
023 - AUTOMOTIVE SERVICE	442	1,074	41.00%	368,514	248	366	68	55,190.03	81,450	26,666,227
024 - USED CAR LOT	130	130	41.00%	44,555	248	366	68	6,672.66	9,848	3,224,034
026 - AIRPORT AND RELATED BUILDINGS	145	456	53.00%	156,358	265	314	97	35,693.01	42,293	16,139,495
028 - BOWLING ALLEYS	7	227	112.00%	77,750	676	582	103	48,076.09	41,391	8,521,873
029 - CONVENTIONAL CAR WASH	76	1,054	796.00%	361,617	20	199	2712	174,186.76	1,733,158	1,043,608,868
030 - COIN OPERATED CAR WASH	54	162	151.00%	55,414	20	199	479	4,714.46	46,909	28,245,853
032 - CEMETERY AND RELATED BUILDINGS	63	205	101.00%	70,343	766	1063	68	32,539.05	45,155	5,090,128
033 - CHURCH BUILDINGS	835	2,816	20.00%	965,915	242	349	35	72,655.49	104,780	35,975,403
034 - DORMITORY	16	617	97.00%	211,702	254	328	173	82,613.63	106,682	38,973,608
035 - ENTERTAINMENT CENTER	23	474	144.00%	162,668	247	358	239	85,278.99	123,603	41,371,163

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 5 - EDU Definitions

	factor per sqft		% Rate	Revenue	Concentrations			lbs/Year		Gal per Year
	APNs (Parcels)	EDUs			BOD, mg/l	SS, mg/l	Flow, gpd	BOD	TSS	
036 - FINANCIAL BUILDINGS	237	564	27.00%	193,396	248	366	68	28,963.76	42,745	13,994,453
037 - FRATERNAL BUILDINGS	73	368	51.00%	126,342	249	349	86	24,026.53	33,676	11,562,304
038 - FUNERAL HOME	16	119	101.00%	40,937	766	1063	68	18,936.48	26,279	2,962,260
039 - GOLF COURSE	234	349	41.00%	119,620	248	366	68	17,914.68	26,439	8,655,857
040 - HEALTH CLUB	51	306	29.00%	104,913	174	273	59	9,564.78	15,007	6,586,859
042 - HOSPITAL	45	3,826	97.00%	1,312,215	238	327	175	485,362.37	666,863	244,366,550
043 - HIGH DEMAND HOTEL/MOTEL	77	8,305	97.00%	2,848,710	174	273	195	858,377.20	1,346,764	591,128,009
044 - LUMBER/CONST. MATERIALSYARD	29	54	17.00%	18,677	238	327	31	1,223.74	1,681	616,118
045 - MARINAS	101	34	53.00%	11,586	265	314	97	2,644.79	3,134	1,195,908
047 - SUPERMARKET	116	4,467	151.00%	1,532,293	768	1057	103	1,076,431.78	1,481,495	167,949,185
048 - CONVENIENCE MARKET	140	581	151.00%	199,444	248	366	68	29,869.49	44,082	14,432,075
050 - SINGLE MEDICAL BLDGS TO 3 STORIES	961	5,504	124.00%	1,888,028	248	360	205	852,432.61	1,237,402	411,870,781
051 - SMALL MEDICAL CENTER	28	429	124.00%	147,155	248	360	205	66,439.64	96,445	32,101,714
052 - MEDICAL CENTER COMPLEX	29	1,413	124.00%	484,707	248	360	205	218,842.34	317,674	105,738,288
053 - HIGH RISE MEDICAL	58	2,284	124.00%	783,384	248	360	205	353,693.12	513,426	170,894,288
054 - CONVERTED RESIDENCE TO MED OFFICE	32	72	124.00%	24,589	248	360	205	11,101.79	16,116	5,364,065
055 - MOBILEHOME PARK	328	12,200	50.00%	4,184,429	254	328	90	849,490.47	1,096,980	400,753,575
056 - LOW DEMAND HOTEL/MOTEL	354	12,184	70.00%	4,179,073	174	273	195	1,259,244.30	1,975,711	867,188,194
057 - MOTORCYCLE/SMALL VEHICLEBLDGS	11	23	41.00%	7,954	248	366	68	1,191.23	1,758	575,567
058 - NURSERIES	31	26	10.00%	8,918	256	390	16	324.39	494	151,840
060 - NURSING HOME	48	1,488	102.00%	510,434	249	355	179	202,040.15	288,049	97,227,909
061 - CONVALESCENT HOSPITALS	65	1,916	102.00%	657,289	249	355	171	248,540.95	354,346	119,605,519
062 - CONVERTED RES USED ASNURSING HOME	19	81	102.00%	27,658	249	355	179	10,947.68	15,608	5,268,359
063 - LOW RISE RETIREMENT BUILDING(S)	41	1,544	70.00%	529,610	174	273	195	159,582.88	250,380	109,897,970
064 - HIGH RISE RETIREMENT BUILDING(S)	29	766	70.00%	262,681	174	273	195	79,151.30	124,186	54,508,149
065 - SINGLE OFFICE BLDGS TO 3STORIES	3,507	16,473	41.00%	5,650,085	248	357	69	858,621.71	1,236,000	414,861,175
066 - SMALL OFFICE CENTER	152	1,522	41.00%	522,199	248	357	69	79,356.59	114,235	38,342,807
067 - OFFICE COMPLEX	70	937	41.00%	321,378	248	357	69	48,838.55	70,304	23,597,377
068 - HIGH RISE OFFICE	191	6,226	30.00%	2,135,504	248	357	69	324,524.37	467,158	156,800,789
069 - CONVERTED RESIDENCE TOOFFICE	309	327	41.00%	112,275	248	357	69	17,061.96	24,561	8,243,846
071 - PARKING GARAGE	66	56	17.00%	19,208	254	328	31	1,343.14	1,734	633,639
072 - PAVED PARKING LOT	876	5	17.00%	1,784	254	328	31	124.73	161	58,840
073 - RECREATION	44	552	143.00%	189,492	247	358	239	99,341.56	143,985	48,193,296

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 5 - EDU Definitions

	factor per sqft		% Rate	Revenue	Concentrations			lbs/Year		Gal per Year
	APNs (Parcels)	EDUs			BOD, mg/l	SS, mg/l	Flow, gpd	BOD	TSS	
074 - RECREATION VEHICLE PARK	8	1	27.00%	343	356	403	38	41.21	47	13,870
076 - RESTAURANT - LOW DEMAND	543	5,341	300.00%	1,831,846	553	402	331	2,977,749.48	2,164,657	645,231,612
077 - RESTAURANT - COFFEE SHOP	397	6,557	600.00%	2,249,163	553	402	662	7,312,237.31	5,315,587	1,584,447,148
078 - RESTAURANT - DINNER HOUSE	206	6,078	600.00%	2,084,639	553	402	662	6,777,352.77	4,926,756	1,468,546,057
079 - RESTAURANT - CONVERSION FROM SFR	5	47	600.00%	16,188	553	402	662	52,629.42	38,259	11,403,971
081 - PRE-SCHOOLS, NURSERY ORCHILDCARE	148	642	82.00%	220,151	254	328	138	68,529.77	88,495	32,329,440
082 - PRIVATE SCHOOLS	145	4,486	82.00%	1,538,764	254	328	138	478,995.11	618,545	225,969,580
083 - AUTOMOTIVE SERVICE STATION	244	257	41.00%	88,218	248	366	68	13,211.84	19,498	6,383,580
084 - MARINE SERVICE STATION	1	1	41.00%	343	248	366	68	51.37	76	24,820
085 - COMBIN:SERVICESTATION/RESTAURANT	4	44	100.00%	15,009	248	366	68	2,247.80	3,317	1,086,073
086 - COMBIN:SERVICESTATION/CONVENIENCE	229	231	41.00%	79,225	248	366	68	11,865.07	17,511	5,732,856
088 - LOW DEMAND CENTER	770	7,834	53.00%	2,686,982	577	529	55	757,267.72	694,271	157,262,887
089 - AVERAGE DEMAND CENTER	677	21,669	139.00%	7,432,460	577	529	138	5,255,736.81	4,818,518	1,091,466,490
090 - HIGH FLOW CENTER	1,063	32,423	226.00%	11,121,253	577	529	224	12,765,083.87	11,703,170	2,650,943,491
092 - SKATING RINKS	5	212	112.00%	72,754	676	582	103	44,986.84	38,731	7,974,279
094 - DEPARTMENT STORE	41	1,048	23.00%	359,378	248	366	38	30,076.85	44,388	14,532,263
095 - DISCOUNT STORE	72	1,019	23.00%	349,570	248	366	38	29,256.07	43,176	14,135,686
096 - UNATTACHED SINGLE STORE	1,144	2,344	23.00%	803,959	248	366	38	67,284.53	99,299	32,509,938
097 - STRIP STORE	243	494	23.00%	169,460	248	366	38	14,182.39	20,930	6,852,520
098 - STORE WITH OFFICES OR LIVING UNITS	750	2,316	82.00%	794,391	254	328	138	247,282.34	319,325	116,657,322
099 - STORE WITH OFFICES UPSTAIRS	44	305	82.00%	104,533	254	328	138	32,539.73	42,020	15,350,863
100 - DRIVE-IN THEATER			10.00%		256	390	16	-	0	0
101 - UNATTACHED THEATER	27	278	51.00%	95,367	249	349	86	18,135.94	25,419	8,727,568
103 - CHEMICAL TANK AND BULKSTORAGE	1	1	100.00%	494	238	327	175	182.69	251	91,980
104 - FOOD PROCESSING PLANT	26	1,630	100.00%	559,226	238	327	175	206,846.60	284,197	104,141,549
105 - COLD STORAGE PLANT	7	259	100.00%	88,989	238	327	175	32,915.39	45,224	16,571,989
106 - FACTORY	31	760	100.00%	260,631	238	327	175	96,402.24	132,452	48,535,866
107 - LIGHT INDUSTRIAL - SINGLETENANT	1,664	16,676	50.00%	5,719,715	238	327	52	628,638.28	863,717	316,502,012
108 - LIGHT INDUSTRIAL - MULTI TENANT	690	6,475	50.00%	2,220,801	238	327	52	244,082.13	335,357	122,888,614
109 - RESEARCH AND DEVELOPMENT	28	552	50.00%	189,399	238	327	52	20,816.28	28,601	10,480,424
110 - WAREHOUSE - SINGLE TENANT	3,574	14,164	17.00%	4,858,336	530	572	17	388,739.33	419,545	87,889,142
111 - WAREHOUSE - MULTI TENANT	1,804	5,380	17.00%	1,845,493	530	572	17	147,666.94	159,369	33,385,664
112 - STEEL BUILDING	116	179	7.00%	61,507	530	572	7	2,026.48	2,187	458,162

Orange County Sanitation District
 Cost of Service Rate Study
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	factor per sqft		% Rate	Revenue	Concentrations			lbs/Year		Gal per Year
	APNs (Parcels)	EDUs			BOD, mg/l	SS, mg/l	Flow, gpd	BOD	TSS	
113 - MINI-WAREHOUSE	167	707	7.00%	242,358	530	572	7	7,985.06	8,618	1,805,323
114 - INDUSTRIAL PARK	703	7,295	50.00%	2,502,070	238	327	52	274,995.73	377,830	138,452,758
115 - RECREATIONAL VEHICLE STORAGE YARD	12	16	17.00%	5,322	530	572	17	425.85	460	96,280
116 - TRUCK TERMINAL	20	280	17.00%	96,053	530	572	17	7,685.66	8,295	1,737,633
118 - GOVERNMENTAL USE VACANT/DEVELOPED	7,512	5,577	82.00%	1,913,026	248	357	137	577,217.14	830,913	278,894,626
119 - PUBLIC UTILITY	50	53	100.00%	18,247	238	327	175	6,749.05	9,273	3,397,960
120 - WATER MUTUAL OR COMPANY	22	139	100.00%	47,525	238	327	175	17,578.45	24,152	8,850,265
121 - PARCEL OF MINIMAL OR NO VALUE	1,251	0	0.00%	0			0	-	0	0
122 - SUBSURFACE PARCELS	18	0	0.00%	0			0	-	0	0
124 - OIL/MINERAL RIGHTS	9	0	0.00%	0			0	-	0	0
125 - MINERAL RIGHTS EQUIPMENT							0	-	0	0
126 - VACANT COMMON AREA-IMPSALLOCATED	20	0	0.00%	0			0	-	0	0
127 -							0	-	0	0
128 -					260	270	3825	-	0	0
222 - OFFICE CONDO W/OUT INDIVIDUAL BATHROOMS	6	0	21.00%	0				-	0	0
223 - LAUNDROMAT			1800.00%							
224 - NIGHTCLUB	59	667	200.00%	228,937	288	274	350	204,938.40	194,976	85,267,486
225 - UNITED STATES POST OFFICE	39	363	35.00%	124,572	405	354		-	0	0
333 - IRVINE RANCH WATER DISTRICT	6,489	0	0.00%	0				-	0	0
555 - OPEN AIR FACILITIES	1	0	1133.00%	0				-	0	0
666 - UNASSIGNED VACANT	317	0	0.00%	0			0	-	0	0
777 - SEPTIC TANK	1,832	0	0.00%	0				-	0	0
888 - CONVERSION-COMPOSITE PROPERTY	13	1	100.00%	343	206	219	253	158.76	169	92,345
999 - Manually Calculated Fee	1,514	31,803	100.00%	10,908,514				0	0	0
Total	556,613	923,111		\$316,627,199				123,424,683	151,870,431	52,333,583,290
Total per Day lbs and Gallons								338,150	416,083	143,379,680
Total per mg and liter								55,984,494,456,898	68,887,268,582,863	198,104,162,676
Total per EDU (mg/L, GPD)								283	348	143

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 6 - Revenue at Present Rates

	EDU Forecast												
	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31		FY 2031-32
000 - CONVERSION-C/I, RURAL PC LIEN DATE	9	9	9	9	9	9	9	9	9	9	9	9	As General Users
001 - VACANT LAND PARCEL	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
002 - ONE RESIDENCE	451,297	451,297	451,599	452,954	454,313	455,676	457,043	458,414	459,790	461,169	462,552	463,940	As General Users
003 - TWO OR MORE RESIDENCES	13,257	13,257	13,266	13,306	13,346	13,386	13,426	13,466	13,507	13,547	13,588	13,628	As General Users
004 - MISCELLANEOUS IMPROVEMENTSONLY	239	239	239	240	241	242	242	243	244	245	245	246	As General Users
005 - COMMON AREA PARCEL	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
006 - "HOLD" PARCEL	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
007 - MOBILEHOME	126	126	126	126	127	127	128	128	128	129	129	130	As General Users
008 - EQUIVALENT TO VACANT	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
010 - DUPLEX ONLY	8,219	8,219	8,225	8,249	8,274	8,299	8,324	8,349	8,374	8,399	8,424	8,449	As General Users
011 - TRIPLEX ONLY	4,881	4,881	4,885	4,899	4,914	4,929	4,943	4,958	4,973	4,988	5,003	5,018	As General Users
012 - 04-UNITS ONLY	19,502	19,502	19,515	19,574	19,632	19,691	19,750	19,810	19,869	19,929	19,988	20,048	As General Users
013 - APARTMENTS ONLY	26,317	26,317	26,335	26,414	26,493	26,573	26,652	26,732	26,812	26,893	26,974	27,054	As General Users
014 - 17-25 UNITS ONLY	8,664	8,664	8,670	8,696	8,722	8,748	8,774	8,801	8,827	8,854	8,880	8,907	As General Users
015 - 26-40 UNITS ONLY	8,632	8,632	8,638	8,664	8,690	8,716	8,742	8,768	8,794	8,821	8,847	8,874	As General Users
016 - 41-99 UNITS ONLY	26,889	26,889	26,907	26,987	27,068	27,150	27,231	27,313	27,395	27,477	27,559	27,642	As General Users
017 - 100 OR MORE UNITS	63,024	63,024	63,066	63,255	63,445	63,636	63,826	64,018	64,210	64,403	64,596	64,790	As General Users
018 - DEVELOPED WITH A MIX OF FORM TYPES	5,080	5,080	5,083	5,099	5,114	5,129	5,145	5,160	5,176	5,191	5,207	5,222	As General Users
019 - SF WITH 1 OR 2 RENTAL UNITS	95	95	95	95	95	96	96	96	96	97	97	97	As General Users
020 - AMUSEMENT PARKS	5,345	5,345	5,348	5,364	5,380	5,397	5,413	5,429	5,445	5,462	5,478	5,494	As General Users
021 - AUTOMOBILE DEALERSHIP	1,467	1,467	1,468	1,472	1,476	1,481	1,485	1,490	1,494	1,499	1,503	1,508	As General Users
022 - AUTO REPAIR SHOP	1,245	1,245	1,246	1,250	1,254	1,257	1,261	1,265	1,269	1,272	1,276	1,280	As General Users
023 - AUTOMOTIVE SERVICE	1,074	1,074	1,075	1,078	1,082	1,085	1,088	1,091	1,095	1,098	1,101	1,104	As General Users
024 - USED CAR LOT	130	130	130	130	131	131	132	132	132	133	133	134	As General Users
026 - AIRPORT AND RELATED BUILDINGS	456	456	456	458	459	460	462	463	464	466	467	469	As General Users
028 - BOWLING ALLEYS	227	227	227	228	228	229	230	230	231	232	232	233	As General Users
029 - CONVENTIONAL CAR WASH	1,054	1,054	1,055	1,058	1,061	1,065	1,068	1,071	1,074	1,077	1,081	1,084	As General Users
030 - COIN OPERATED CAR WASH	162	162	162	162	163	163	164	164	165	165	166	166	As General Users
032 - CEMETERY AND RELATED BUILDINGS	205	205	205	206	206	207	208	208	209	210	210	211	As General Users
033 - CHURCH BUILDINGS	2,816	2,816	2,818	2,826	2,835	2,843	2,852	2,860	2,869	2,878	2,886	2,895	As General Users
034 - DORMITORY	617	617	618	619	621	623	625	627	629	631	633	634	As General Users
035 - ENTERTAINMENT CENTER	474	474	475	476	477	479	480	482	483	485	486	488	As General Users
036 - FINANCIAL BUILDINGS	564	564	564	566	568	569	571	573	574	576	578	580	As General Users
037 - FRATERNAL BUILDINGS	368	368	369	370	371	372	373	374	375	376	378	379	As General Users
038 - FUNERAL HOME	119	119	119	120	120	121	121	121	122	122	122	123	As General Users

	EDU Forecast												
	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31		FY 2031-32
039 - GOLF COURSE	349	349	349	350	351	352	353	354	355	356	357	359	As General Users
040 - HEALTH CLUB	306	306	306	307	308	309	310	311	312	313	313	314	As General Users
042 - HOSPITAL	3,826	3,826	3,828	3,840	3,851	3,863	3,874	3,886	3,898	3,909	3,921	3,933	As General Users
043 - HIGH DEMAND HOTEL/MOTEL	8,305	8,305	8,311	8,336	8,361	8,386	8,411	8,436	8,462	8,487	8,512	8,538	As General Users
044 - LUMBER/CONST. MATERIALSYARD	54	54	54	55	55	55	55	55	55	56	56	56	As General Users
045 - MARINAS	34	34	34	34	34	34	34	34	34	35	35	35	As General Users
047 - SUPERMARKET	4,467	4,467	4,470	4,484	4,497	4,511	4,524	4,538	4,551	4,565	4,579	4,592	As General Users
048 - CONVENIENCE MARKET	581	581	582	584	585	587	589	591	592	594	596	598	As General Users
050 - SINGLE MEDICAL BLDGS TO 3 STORIES	5,504	5,504	5,508	5,525	5,541	5,558	5,575	5,591	5,608	5,625	5,642	5,659	As General Users
051 - SMALL MEDICAL CENTER	429	429	429	431	432	433	434	436	437	438	440	441	As General Users
052 - MEDICAL CENTER COMPLEX	1,413	1,413	1,414	1,418	1,423	1,427	1,431	1,435	1,440	1,444	1,448	1,453	As General Users
053 - HIGH RISE MEDICAL	2,284	2,284	2,285	2,292	2,299	2,306	2,313	2,320	2,327	2,334	2,341	2,348	As General Users
054 - CONVERTED RESIDENCE TO MED OFFICE	72	72	72	72	72	72	73	73	73	73	73	74	As General Users
055 - MOBILEHOME PARK	12,200	12,200	12,208	12,244	12,281	12,318	12,355	12,392	12,429	12,466	12,504	12,541	As General Users
056 - LOW DEMAND HOTEL/MOTEL	12,184	12,184	12,192	12,229	12,265	12,302	12,339	12,376	12,413	12,450	12,488	12,525	As General Users
057 - MOTORCYCLE/SMALL VEHICLEBLDGS	23	23	23	23	23	23	23	24	24	24	24	24	As General Users
058 - NURSERIES	26	26	26	26	26	26	26	26	26	27	27	27	As General Users
060 - NURSING HOME	1,488	1,488	1,489	1,494	1,498	1,503	1,507	1,512	1,516	1,521	1,525	1,530	As General Users
061 - CONVALESCENT HOSPITALS	1,916	1,916	1,918	1,923	1,929	1,935	1,941	1,947	1,952	1,958	1,964	1,970	As General Users
062 - CONVERTED RES USED ASNURSING HOME	81	81	81	81	81	81	82	82	82	82	83	83	As General Users
063 - LOW RISE RETIREMENT BUILDING(S)	1,544	1,544	1,545	1,550	1,554	1,559	1,564	1,568	1,573	1,578	1,583	1,587	As General Users
064 - HIGH RISE RETIREMENT BUILDING(S)	766	766	766	769	771	773	776	778	780	783	785	787	As General Users
065 - SINGLE OFFICE BLDGS TO 3STORIES	16,473	16,473	16,484	16,533	16,583	16,632	16,682	16,732	16,783	16,833	16,883	16,934	As General Users
066 - SMALL OFFICE CENTER	1,522	1,522	1,523	1,528	1,533	1,537	1,542	1,546	1,551	1,556	1,560	1,565	As General Users
067 - OFFICE COMPLEX	937	937	938	940	943	946	949	952	955	957	960	963	As General Users
068 - HIGH RISE OFFICE	6,226	6,226	6,230	6,249	6,268	6,286	6,305	6,324	6,343	6,362	6,381	6,400	As General Users
069 - CONVERTED RESIDENCE TOOFFICE	327	327	328	329	330	331	331	332	333	334	335	337	As General Users
071 - PARKING GARAGE	56	56	56	56	56	57	57	57	57	57	57	58	As General Users
072 - PAVED PARKING LOT	5	5	5	5	5	5	5	5	5	5	5	5	As General Users
073 - RECREATION	552	552	553	554	556	558	559	561	563	565	566	568	As General Users
074 - RECREATION VEHICLE PARK	1	1	1	1	1	1	1	1	1	1	1	1	As General Users
076 - RESTAURANT - LOW DEMAND	5,341	5,341	5,344	5,360	5,376	5,392	5,409	5,425	5,441	5,457	5,474	5,490	As General Users
077 - RESTAURANT - COFFEE SHOP	6,557	6,557	6,562	6,581	6,601	6,621	6,641	6,661	6,681	6,701	6,721	6,741	As General Users
078 - RESTAURANT - DINNER HOUSE	6,078	6,078	6,082	6,100	6,118	6,137	6,155	6,174	6,192	6,211	6,229	6,248	As General Users
079 - RESTAURANT - CONVERSION FROM SFR	47	47	47	47	48	48	48	48	48	48	48	49	As General Users
081 - PRE-SCHOOLS, NURSERY ORCHILDCARE	642	642	642	644	646	648	650	652	654	656	658	660	As General Users

Orange County Sanitation District
 Cost of Service Rate Study
 Revenue Requirement
 Exhibit 6 - Revenue at Present Rates

	EDU Forecast												
	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31		FY 2031-32
082 - PRIVATE SCHOOLS	4,486	4,486	4,489	4,503	4,516	4,530	4,543	4,557	4,571	4,584	4,598	4,612	As General Users
083 - AUTOMOTIVE SERVICE STATION	257	257	257	258	259	260	260	261	262	263	264	264	As General Users
084 - MARINE SERVICE STATION	1	1	1	1	1	1	1	1	1	1	1	1	As General Users
085 - COMBIN:SERVICESTATION/RESTAURANT	44	44	44	44	44	44	44	44	45	45	45	45	As General Users
086 - COMBIN:SERVICESTATION/CONVENIENCE	231	231	231	232	233	233	234	235	235	236	237	237	As General Users
088 - LOW DEMAND CENTER	7,834	7,834	7,839	7,863	7,886	7,910	7,934	7,957	7,981	8,005	8,029	8,053	As General Users
089 - AVERAGE DEMAND CENTER	21,669	21,669	21,684	21,749	21,814	21,879	21,945	22,011	22,077	22,143	22,209	22,276	As General Users
090 - HIGH FLOW CENTER	32,423	32,423	32,445	32,543	32,640	32,738	32,836	32,935	33,034	33,133	33,232	33,332	As General Users
092 - SKATING RINKS	212	212	212	213	214	214	215	215	216	217	217	217	As General Users
094 - DEPARTMENT STORE	1,048	1,048	1,048	1,052	1,055	1,058	1,061	1,064	1,067	1,071	1,074	1,077	As General Users
095 - DISCOUNT STORE	1,019	1,019	1,020	1,023	1,026	1,029	1,032	1,035	1,038	1,041	1,045	1,048	As General Users
096 - UNATTACHED SINGLE STORE	2,344	2,344	2,345	2,353	2,360	2,367	2,374	2,381	2,388	2,395	2,402	2,410	As General Users
097 - STRIP STORE	494	494	494	496	497	499	500	502	503	505	506	508	As General Users
098 - STORE WITH OFFICES OR LIVING UNITS	2,316	2,316	2,318	2,325	2,331	2,338	2,345	2,353	2,360	2,367	2,374	2,381	As General Users
099 - STORE WITH OFFICES UPSTAIRS	305	305	305	306	307	308	309	310	310	311	312	312	As General Users
101 - UNATTACHED THEATER	278	278	278	279	280	281	282	282	283	284	285	286	As General Users
103 - CHEMICAL TANK AND BULKSTORAGE	1	1	1	1	1	1	1	1	1	1	1	1	As General Users
104 - FOOD PROCESSING PLANT	1,630	1,630	1,631	1,636	1,641	1,646	1,651	1,656	1,661	1,666	1,671	1,676	As General Users
105 - COLD STORAGE PLANT	259	259	260	260	261	262	263	264	264	265	266	267	As General Users
106 - FACTORY	760	760	760	763	765	767	770	772	774	776	779	781	As General Users
107 - LIGHT INDUSTRIAL - SINGLE TENANT	16,676	16,676	16,687	16,737	16,787	16,837	16,888	16,939	16,989	17,040	17,091	17,143	As General Users
108 - LIGHT INDUSTRIAL - MULTI TENANT	6,475	6,475	6,479	6,498	6,518	6,537	6,557	6,577	6,596	6,616	6,636	6,656	As General Users
109 - RESEARCH AND DEVELOPMENT	552	552	553	554	556	558	559	561	563	564	566	568	As General Users
110 - WAREHOUSE - SINGLE TENANT	14,164	14,164	14,174	14,216	14,259	14,302	14,345	14,388	14,431	14,474	14,518	14,561	As General Users
111 - WAREHOUSE - MULTI TENANT	5,380	5,380	5,384	5,400	5,416	5,433	5,449	5,465	5,482	5,498	5,515	5,531	As General Users
112 - STEEL BUILDING	179	179	179	180	181	181	182	182	183	183	184	184	As General Users
113 - MINI-WAREHOUSE	707	707	707	709	711	713	716	718	720	722	724	726	As General Users
114 - INDUSTRIAL PARK	7,295	7,295	7,300	7,321	7,343	7,365	7,388	7,410	7,432	7,454	7,477	7,499	As General Users
115 - RECREATIONAL VEHICLE STORAGE YARD	16	16	16	16	16	16	16	16	16	16	16	16	As General Users
116 - TRUCK TERMINAL	280	280	280	281	282	283	284	284	285	286	287	288	As General Users
118 - GOVERNMENTAL USE/VACANT/DEVELOPED	5,577	5,577	5,581	5,598	5,615	5,631	5,648	5,665	5,682	5,699	5,716	5,734	As General Users
119 - PUBLIC UTILITY	53	53	53	53	54	54	54	54	54	54	55	55	As General Users
120 - WATER MUTUAL OR COMPANY	139	139	139	139	139	140	140	141	141	142	142	142	As General Users
121 - PARCEL OF MINIMAL OR NO VALUE	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
122 - SUBSURFACE PARCELS	0	0	0	0	0	0	0	0	0	0	0	0	As General Users

	FY 2020-21	EDU Forecast												
		FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31		FY 2031-32	
124 - OIL/MINERAL RIGHTS	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
126 - VACANT COMMON AREA-IMPSALLOCATED	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
222 - OFFICE CONDO W/OUT INDIVIDUAL BATHROOMS	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
223 - LAUNDROMAT	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
224 - NIGHTCLUB	667	667	668	670	672	674	676	678	680	682	684	686	688	As General Users
225 - UNITED STATES POST OFFICE	363	363	363	365	366	367	368	369	370	371	372	373	374	As General Users
333 - IRVINE RANCH WATER DISTRICT	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
555 - OPEN AIR FACILITIES	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
666 - UNASSIGNED VACANT	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
777 - SEPTIC TANK	0	0	0	0	0	0	0	0	0	0	0	0	0	As General Users
888 - CONVERSION-COMPOSITE PROPERTY	1	1	1	1	1	1	1	1	1	1	1	1	1	As General Users
999 - Manually Calculated Fee	31,803	31,803	31,825	31,920	32,016	32,112	32,208	32,305	32,402	32,499	32,596	32,694	32,791	As General Users
Total EDUs	923,111	923,111	923,730	926,501	929,281	932,069	934,865	937,669	940,482	943,304	946,134	948,972	951,803	
	924944	920967	923730	926501	929281	932069	934865	937670						
APN and Permittee Summary														
General Users	556,619	556,619	556,992	558,663	560,339	562,020	563,706	565,397	567,093	568,795	570,501	572,213	573,925	As General Users
Permitted Users	308	308	308	309	310	311	312	313	314	315	316	317	318	As General Users
Total APN and Permittees	556,927	556,927	557,300	558,972	560,649	562,331	564,018	565,710	567,407	569,109	570,817	572,529	574,243	
	2020-21	2021-22												
General Users														
General User Rate \$/EDU	\$343	\$347	347											
General User Revenue	\$316,627,199	\$320,319,644	\$320,534,310	\$321,495,913	\$322,460,401	\$323,427,782	\$324,398,065	\$325,371,259	\$326,347,373	\$327,326,415	\$328,308,395	\$329,293,320	\$330,274,297	
Less Assumed Rebates	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	(12,000,000)	As Flat
Net General User Revenue	\$304,627,199	\$308,319,644	\$308,534,310	\$309,495,913	\$310,460,401	\$311,427,782	\$312,398,065	\$313,371,259	\$314,347,373	\$315,326,415	\$316,308,395	\$317,293,320	\$318,274,297	

	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
EDU Forecast												
Permit User												
Flow - \$/1,000,000 Gallons	\$1,545.35	\$1,601.28										
BOD - \$/1,000 lbs	\$664.69	\$667.99										
SS - \$/1,000 lbs	\$756.86	\$777.00										
Million Gallons of Flow	2,806.05	2,806	2,806	2,806	2,806	2,806	2,806	2,806	2,806	2,806	2,806	2,806 As Flat
Thousand lbs of BOD	11,450.13	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450 As Flat
Thousand lbs of SS	2,651.91	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652	2,652 As Flat
	13,954,229	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366	14,202,366
Property Tax Credit	0	0	0	0	0	0	0	0	0	0	0	0 As Property Tax
Net Permit User Revenue	\$13,954,229	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366	\$14,202,366
Wastehauler												
Inside OCSAN Boundries												
# of Discharges	7150	7,171	5,145	5,145	5,145	5,145	5,145	5,145	5,145	5,145	5,145	5,145 As Wastehaulers
Inside OCSAN - \$/Gallon	\$0.08	\$0.09										
Gallons	10,823,720	10,856,191	7,788,238	7,788,238	7,788,238	7,788,238	7,788,238	7,788,238	7,788,238	7,788,238	7,788,238	7,788,238 As Wastehaulers
Inside OCSAN Wastehauler Revenue	865,898	977,057	700,941	700,941	700,941	700,941	700,941	700,941	700,941	700,941	700,941	700,941
Outside OCSAN Boundries												
# of Discharges	790	792	568	568	568	568	568	568	568	568	568	568 As Wastehaulers
Outside OCSAN - \$/Gallon	\$0.18	\$0.20										
Gallons	757,547	759,820	545,095	545,095	545,095	545,095	545,095	545,095	545,095	545,095	545,095	545,095 As Wastehaulers
Outside OCSAN Wastehauler Revenue	136,358	151,964	109,019	109,019	109,019	109,019	109,019	109,019	109,019	109,019	109,019	109,019
Total Wastehauler Revenue	\$1,002,256	\$1,129,021	\$809,960	\$809,960	\$809,960	\$809,960	\$809,960	\$809,960	\$809,960	\$809,960	\$809,960	\$809,960

Orange County Sanitation District
 Cost of Service Rate Study
 Development of Distribution Factors
 Exhibit 7 - Volume Distribution Factor

Customer Class	FY 2023-24 Annual Flow (1,000 Gal)	4.0% Inflow and Infiltration ^[1]	Total Annual Flow at Plant (1,000 Gal)	Avg. Daily Flow At Plant (MGD)	Volume All % of Total	Volume -WH % of Total
General Users	52,560,962	3,153,658	55,714,620	152.64	94.92%	94.93%
Permitted Users	2,806,046	168,363	2,974,409	8.15	5.07%	5.07%
Wastehaulers	8,333	167	8,500	0.02	0.01%	
Total Billed Volume	55,375,341	3,322,187	58,697,528	160.82	100.00%	100.00%
IRWD	2,075,755	41,515	2,117,270	5.80		
SAWPA	5,110,000	102,200	5,212,200	14.28		
Total Including IRWD and SAWPA	62,561,096	3,465,902	66,026,998	180.90		
Inflow Volume At Treatment Plants [2]			65,948,000	180.68		
Distribution Factor					(VOL-1)	(VOL-2)

[1] Inflow and Infiltration assigned to General and Permitted Users. All customers attributed 2% for Urban Dry Weather Runoff

[2] 2021 data from P1-P2 Influent.xlsx File Provided by OC San

[3] 2021 Avg Daily Flow in MGD, contract capacity = 17 MGD

<i>Urban Dry Weather Run Off</i>	1,350,500	0	1,350,500	3.70	2.1%
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Orange County Sanitation District
 Cost of Service Rate Study
 Development of Distribution Factors
 Exhibit 8 - Strength Distribution Factors

Customer Class	Biological Oxygen Demand			
	Daily Flow (MGD)	Avg. Factor (mg/l)	Calculated Pounds ^[1]	% of Total
General Users	152.64	283	131,313,501	91.8%
Permitted Users	8.15	461	11,450,126	8.0%
Wastehaulers	0.02	5,000	354,450	0.2%
Totals	160.82	292	143,118,077	1.00
IRWD	5.80	138	2,436,809	1.7%
SAWPA	14.28	39	1,709,665	1.2%
	180.90	267	147,264,551	
<i>Concentration At Treatment Plant [2]</i>	<i>180.68</i>	<i>262</i>	<i>144,216,821</i>	
Distribution Factor				(BOD)

Total Suspended Solids		
Avg. Factor (mg/l)	Calculated Pounds ^[1]	% of Total
348	161,577,388	98.2%
107	2,651,906	1.6%
5,000	354,450	0.2%
336	164,583,744	100.00%
170	3,001,866	1.8%
93	4,027,037	2.4%
311	171,612,647	
318	174,710,659	
		(TSS)

[1]

[2] 2021 data from P1-P2 Influent.xlsx File Provided by OC San

Description	6/30/2020	Volume		Wastewater Concentration		Basis of Classification
		(VOL-1)	(VOL-2)	Biological Oxygen Demand (BOD)	Total Suspended Solids (TSS)	
Original Cost						
Treatment Plant Structures and Improvement						
Structures and Improvements	\$345,477,114	\$121,173,840	\$0	\$116,809,403	\$107,493,871	As Treatment Less Interplant Collection
Electrical	47,006,877	16,487,355	0	15,893,514	14,626,008	As Treatment Less Interplant Collection
Land	35,317,555	12,387,402	0	11,941,233	10,988,921	As Treatment Less Interplant Collection
Ground Water Replenishment System	208,568,242	208,568,242	0	0	0	100% (VOL-1)
Total - Treatment Plant Structures and Improvement	\$636,369,788	\$358,616,839	\$0	\$144,644,149	\$133,108,801	
Wastewater Treatment						
Pretreatment	\$5,434,618	\$4,075,963	\$0	\$271,731	\$1,086,924	Headworks
Headworks	35,943,851	26,957,888	0	1,797,193	7,188,770	Headworks
Influent Metering and Diversion	34,714,461	26,035,846	0	1,735,723	6,942,892	Headworks
Bar Screen	115,103,066	86,327,299	0	5,755,153	23,020,613	Headworks
Blower	45,588,757	34,191,568	0	2,279,438	9,117,751	Headworks
Boiler	8,967,007	8,070,306	0	896,701	0	Interplant
Foul Air Scrubber	117,949,630	88,462,223	0	5,897,482	23,589,926	Headworks
Air Quality	14,136,779	10,602,584	0	706,839	2,827,356	Headworks
Wet Well	144,717	108,538	0	7,236	28,943	Headworks
Grit Removal	62,903,321	47,177,491	0	3,145,166	12,580,664	Headworks
Primary Basin	72,138,907	0	0	21,641,672	50,497,235	Primary Sedimentation
Secondary Basin	2,425,324	0	0	1,697,726	727,597	Secondary Sedimentation
Digester	206,792,971	0	0	51,698,243	155,094,728	Digestion
Primary Clarifiers	150,783,220	0	0	45,234,966	105,548,254	Primary Sedimentation
Secondary Clarifiers	182,700,680	0	0	127,890,476	54,810,204	Secondary Sedimentation
Trickling Filter	136,815,816	0	0	136,815,816	0	Trickling Filters
Aeration Basin	124,727,870	0	0	124,727,870	0	Aeration Equipment and Structures
Chemical Feed System	14,469,082	0	0	3,617,270	10,851,811	Sludge Thickening
Polymer Feed	2,017,438	0	0	504,360	1,513,079	Sludge Thickening
Chlorination	5,093,783	0	0	1,273,446	3,820,337	Sludge Thickening
Sludge Handling	56,844,197	0	0	14,211,049	42,633,148	Sludge Thickening
Belt Press	7,187,547	0	0	1,796,887	5,390,660	Sludge Thickening
Solids Handling	19,565,030	0	0	4,891,257	14,673,772	Solids Handling
Effluent Distribution	103,072,258	103,072,258	0	0	0	Effluent Disposal
Dissolved Air Flotation	45,582,781	0	0	13,674,834	31,907,946	Primary Sedimentation
Secondary Treatment	35,045,994	0	0	24,532,196	10,513,798	Secondary Sedimentation
Activated Sludge Clarifier	17,305,256	0	0	17,305,256	0	Activated Sludge Process
Return Activated Sludge Pump	3,614,786	0	0	3,614,786	0	Activated Sludge Process
SCADA	1,608,549	1,447,694	0	160,855	0	Interplant
Instrumentation and Telemetry	10,951,109	9,855,998	0	1,095,111	0	Interplant
Monitoring/Sampling Equipment	9,113,895	8,202,506	0	911,390	0	Interplant
Control Equipment	38,876,860	34,989,174	0	3,887,686	0	Interplant
Instrument & Testing Equipment	8,784,876	7,906,389	0	878,488	0	Interplant
Water Supply	14,368,367	12,931,530	0	1,436,837	0	Interplant
Methane Collection	13,197,089	0	0	3,299,272	9,897,817	Digestion
Gas Compressor	2,800,759	2,520,683	0	280,076	0	Interplant
Chopper Pump	592,132	532,919	0	59,213	0	Interplant
Centrifuge	576,672	519,005	0	57,667	0	Interplant
Pumps	10,324,045	9,291,640	0	1,032,404	0	Interplant
Valves	1,308,439	1,177,595	0	130,844	0	Interplant

Orange County Sanitation District
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Description	6/30/2020	Wastewater Concentration				Basis of Classification
		Volume All	Volume -WH	Biological Oxygen Demand	Total Suspended Solids	
		(VOL-1)	(VOL-2)	(BOD)	(TSS)	
Sluice gate	78,327	70,494	0	7,833	0	Interplant
Knife Gate Valve	58,240	52,416	0	5,824	0	Interplant
High Strength BOD	9,405	0	0	2,351	7,054	Sludge Thickening
Ocean Outfall Booster Station	25,516,205	25,516,205	0	0	0	Effluent Disposal
Outfall	72,134,035	72,134,035	0	0	0	Effluent Disposal
Surge Sturcture	53,010	53,010	0	0	0	Effluent Disposal
Waste hauler Facilities	2,224,344	2,001,910	0	222,434	0	Interplant
Air Compressor	2,457,295	2,211,566	0	245,730	0	Interplant
Interplant Interceptor	5,762,020	5,185,818	0	576,202	0	Interplant
Tunnel & Piping	29,548,004	26,593,204	0	2,954,800	0	Interplant
Bypass	390,568	351,512	0	39,057	0	Interplant
Lift Station	83,004,862	74,704,376	0	8,300,486	0	Interplant
Pump Stations	42,746,807	38,472,127	0	4,274,681	0	Interplant
Collection Line	70,798,481	63,718,633	0	7,079,848	0	Interplant
Flow Meter	1,415,253	1,273,727	0	141,525	0	Interplant
Force Main	929,394	836,454	0	92,939	0	Interplant
Total - Wastewater Treatment	\$2,076,698,187	\$837,632,584	\$0	\$654,794,323	\$584,271,281	
Revenue Area 14						
Trunkline	\$26,162,942	\$0	\$23,546,647	\$2,616,294	\$0	Collection
Pump Station	7,186,481	0	6,467,833	718,648	0	Collection
Telemetry	19,644	5,823	4,688	5,072	4,061	As All Others
Misc. Equipment	6,139	1,820	1,465	1,585	1,269	As All Others
Total - Revenue Area 14	\$33,375,206	\$7,643	\$30,020,634	\$3,341,599	\$5,330	
Revenue Area 15						
Land	\$3,974,869	\$1,178,238	\$948,614	\$1,026,292	\$821,724	As All Others
Trunk	366,775,089	0	330,097,580	36,677,509	0	Collection
Pump Station	118,421,602	0	106,579,442	11,842,160	0	Collection
Diversion Sewer	3,425,917	0	3,083,325	342,592	0	Collection
Siphon	11,291,496	0	10,162,346	1,129,150	0	Collection
Interceptor	94,171,908	0	84,754,717	9,417,191	0	Collection
Force Main	48,138,759	0	43,324,883	4,813,876	0	Collection
Wet Well	52,030	39,022	0	2,601	10,406	Headworks
Manhole	12,382,651	0	11,144,386	1,238,265	0	Collection
Gates and Valves	60,327,214	0	54,294,492	6,032,721	0	Collection
Telemetry	287,646	85,265	68,648	74,269	59,465	As All Others
Flowmeter	1,172,378	0	1,055,141	117,238	0	Collection
Misc. Equipment	43,686	12,949	10,426	11,279	9,031	As All Others
Generator	116,167	34,434	27,724	29,994	24,015	As All Others
Odor Control	19,164	14,373	0	958	3,833	Headworks
JOS Outfall	98,475	98,475	0	0	0	Effluent Disposal
Total - Revenue Area 15	\$720,699,050	\$1,462,757	\$645,551,724	\$72,756,095	\$928,474	
Original Cost Plant Before General Plant	\$3,467,142,232	\$1,197,719,822	\$675,572,358	\$875,536,167	\$718,313,886	

Description	6/30/2020	Wastewater Concentration				Basis of Classification
		Volume All (VOL-1)	Volume -WH (VOL-2)	Biological Oxygen Demand (BOD)	Total Suspended Solids (TSS)	
General Plant						
Lab Equipment	\$6,325,142	\$1,874,911	\$1,509,514	\$1,633,122	\$1,307,596	As All Others
Portable Office Space	7,580,302	2,246,968	1,809,062	1,957,198	1,567,075	As All Others
Portable Equipment	3,354,812	994,440	800,636	866,197	693,540	As All Others
Ocean Monitoring Vesse	1,300,000	385,348	310,249	335,654	268,749	As All Others
Vactor Truck	1,156,316	342,757	275,958	298,555	239,045	As All Others
Underground Storage Tank	1,084,429	321,449	258,802	279,994	224,184	As All Others
Plans	238,542	70,709	56,929	61,590	49,314	As All Others
Misc. Equipment	132,268,127	39,207,171	31,566,186	34,151,003	27,343,766	As All Others
Office Equipment	154,852	45,901	36,956	39,982	32,012	As All Others
Office Furnishings	1,618,021	479,617	386,146	417,765	334,493	As All Others
Security Equipment	357,610	106,004	85,345	92,333	73,929	As All Others
IT Equipment	44,193,843	13,100,024	10,546,994	11,410,641	9,136,185	As All Others
Vehicles	12,054,324	3,573,166	2,876,801	3,112,369	2,491,988	As All Others
HVAC	6,860,455	2,033,589	1,637,268	1,771,337	1,418,261	As All Others
Software	4,235,131	1,255,386	1,010,727	1,093,491	875,528	As All Others
Generators	30,472,891	9,032,833	7,272,447	7,867,956	6,299,655	As All Others
Total General Plant	\$253,254,799	\$75,070,272	\$60,440,019	\$65,389,188	\$52,355,320	
Total Original Cost Plant in Service	\$3,720,397,031	\$1,272,790,093	\$736,012,378	\$940,925,355	\$770,669,205	
Accumulated Depreciation						
Depreciation of Structures and Improvement						
Structures and Improvements	\$239,669,264	\$84,062,428	\$0	\$81,034,669	\$74,572,167	As Treatment Less Interplant Collection
Electrical	28,325,492	9,934,981	0	9,577,143	8,813,368	As Treatment Less Interplant Collection
Land	0	0	0	0	0	As Treatment Less Interplant Collection
Ground Water Replenishment System	69,522,747	69,522,747	0	0	0	100% (VOL-1)
Total - Depreciation of Structures and Improvement	\$337,517,504	\$163,520,157	\$0	\$90,611,812	\$83,385,534	
Depreciation of Wastewater Treatment						
Pretreatment	\$2,219,260	\$1,664,445	\$0	\$110,963	\$443,852	Headworks
Headworks	27,433,246	20,574,935	0	1,371,662	5,486,649	Headworks
Influent Metering and Diversion	12,201,596	9,151,197	0	610,080	2,440,319	Headworks
Bar Screen	27,949,705	20,962,279	0	1,397,485	5,589,941	Headworks
Blower	13,261,665	9,946,249	0	663,083	2,652,333	Headworks
Boiler	2,709,752	2,438,777	0	270,975	0	Interplant
Foul Air Scrubber	49,045,554	36,784,165	0	2,452,278	9,809,111	Headworks
Air Quality	12,976,046	9,732,035	0	648,802	2,595,209	Headworks
Wet Well	144,555	108,416	0	7,228	28,911	Headworks
Grit Removal	18,837,416	14,128,062	0	941,871	3,767,483	Headworks
Primary Basin	46,657,814	0	0	13,997,344	32,660,470	Primary Sedimentation
Secondary Basin	2,421,693	0	0	1,695,185	726,508	Secondary Sedimentation
Digester	104,567,175	0	0	26,141,794	78,425,381	Digestion
Primary Clarifiers	59,360,420	0	0	17,808,126	41,552,294	Primary Sedimentation
Secondary Clarifiers	57,495,919	0	0	40,247,143	17,248,776	Secondary Sedimentation
Trickling Filter	36,118,744	0	0	36,118,744	0	Trickling Filters
Aeration Basin	42,305,724	0	0	42,305,724	0	Aeration Equipment and Structures
Chemical Feed System	6,382,079	0	0	1,595,520	4,786,560	Sludge Thickening
Polymer Feed	1,852,014	0	0	463,004	1,389,011	Sludge Thickening
Chlorination	5,014,990	0	0	1,253,748	3,761,243	Sludge Thickening
Sludge Handling	25,754,640	0	0	6,438,660	19,315,980	Sludge Thickening
Belt Press	6,728,134	0	0	1,682,033	5,046,100	Sludge Thickening
Solids Handling	7,737,501	0	0	1,934,375	5,803,125	Solids Handling
Effluent Distribution	44,325,301	44,325,301	0	0	0	Effluent Disposal

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Description	6/30/2020	Wastewater Concentration				Basis of Classification
		Volume All	Volume -WH	Biological Oxygen Demand	Total Suspended Solids	
		(VOL-1)	(VOL-2)	(BOD)	(TSS)	
Dissolved Air Flotation	14,480,801	0	0	4,344,240	10,136,560	Primary Sedimentation
Secondary Treatment	24,186,694	0	0	16,930,686	7,256,008	Secondary Sedimentation
Activated Sludge Clarifier	5,354,771	0	0	5,354,771	0	Activated Sludge Process
Return Activated Sludge Pump	2,146,077	0	0	2,146,077	0	Activated Sludge Process
SCADA	1,608,549	1,447,694	0	160,855	0	Interplant
Instrumentation and Telemetry	9,403,677	8,463,310	0	940,368	0	Interplant
Monitoring/Sampling Equipment	7,399,264	6,659,337	0	739,926	0	Interplant
Control Equipment	31,292,150	28,162,935	0	3,129,215	0	Interplant
Instrument & Testing Equipment	6,749,708	6,074,737	0	674,971	0	Interplant
Water Supply	7,316,095	6,584,485	0	731,609	0	Interplant
Methane Collection	9,400,643	0	0	2,350,161	7,050,482	Digestion
Gas Compressor	2,800,759	2,520,683	0	280,076	0	Interplant
Chopper Pump	431,156	388,041	0	43,116	0	Interplant
Centrifuge	569,353	512,417	0	56,935	0	Interplant
Pumps	9,208,732	8,287,859	0	920,873	0	Interplant
Valves	881,220	793,098	0	88,122	0	Interplant
Sluice gate	37,526	33,774	0	3,753	0	Interplant
Knife Gate Valve	35,056	31,551	0	3,506	0	Interplant
High Strength BOD	9,405	0	0	2,351	7,054	Sludge Thickening
Ocean Outfall Booster Station	20,413,774	20,413,774	0	0	0	Effluent Disposal
Outfall	32,148,089	32,148,089	0	0	0	Effluent Disposal
Surge Structure	27,830	27,830	0	0	0	Effluent Disposal
Wastehauler Facilities	1,982,951	1,784,656	0	198,295	0	Interplant
Air Compressor	1,474,200	1,326,780	0	147,420	0	Interplant
Interplant Interceptor	5,601,560	5,041,404	0	560,156	0	Interplant
Tunnel & Piping	23,093,660	20,784,294	0	2,309,366	0	Interplant
Bypass	390,568	351,512	0	39,057	0	Interplant
Lift Station	23,893,442	21,504,097	0	2,389,344	0	Interplant
Pump Stations	15,464,926	13,918,433	0	1,546,493	0	Interplant
Collection Line	17,128,150	15,415,335	0	1,712,815	0	Interplant
Flow Meter	1,401,957	1,261,762	0	140,196	0	Interplant
Force Main	842,186	757,967	0	84,219	0	Interplant
Total - Depreciation of Wastewater Treatment	\$890,675,870	\$374,511,712	\$0	\$248,184,797	\$267,979,361	
Depreciation of Revenue Area 14						
Trunkline	\$14,952,281	\$0	\$13,457,053	\$1,495,228	\$0	Collection
Pump Station	\$5,055,360	0	4,549,824	505,536	0	Collection
Telemetry	\$19,644	5,823	4,688	5,072	4,061	As All Others
Misc. Equipment	\$6,139	1,820	1,465	1,585	1,269	As All Others
Total - Depreciation of Revenue Area 14	\$20,033,425	\$7,643	\$18,013,031	\$2,007,421	\$5,330	

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Description	6/30/2020	Wastewater Concentration				Basis of Classification
		Volume All	Volume -WH	Biological Oxygen Demand	Total Suspended Solids	
		(VOL-1)	(VOL-2)	(BOD)	(TSS)	
Depreciation of Revenue Area 15						
Land	\$33,913	\$10,053	\$8,094	\$8,756	\$7,011	As All Others
Trunk	180,474,791	0	162,427,312	18,047,479	0	Collection
Pump Station	54,354,242	0	48,918,818	5,435,424	0	Collection
Diversion Sewer	1,953,231	0	1,757,908	195,323	0	Collection
Siphon	3,697,139	0	3,327,425	369,714	0	Collection
Interceptor	70,093,970	0	63,084,573	7,009,397	0	Collection
Force Main	12,411,864	0	11,170,678	1,241,186	0	Collection
Wet Well	52,030	39,022	0	2,601	10,406	Headworks
Manhole	6,057,388	0	5,451,649	605,739	0	Collection
Gates and Valves	14,961,770	0	13,465,593	1,496,177	0	Collection
Telemetry	287,646	85,265	68,648	74,269	59,465	As All Others
Flowmeter	1,168,785	0	1,051,907	116,879	0	Collection
Misc. Equipment	23,535	6,976	5,617	6,077	4,865	As All Others
Generator	7,744	2,296	1,848	2,000	1,601	As All Others
Odor Control	19,164	14,373	0	958	3,833	Headworks
JOS Outfall	98,475	98,475	0	0	0	Effluent Disposal
Total - Depreciation of Revenue Area 15	\$345,695,689	\$256,459	\$310,740,069	\$34,611,979	\$87,181	
Depreciation of Plant Before General Plant	\$1,593,922,487	\$538,295,971	\$328,753,100	\$375,416,010	\$351,457,407	
Depreciation of General Plant						
Lab Equipment	6,317,055	\$1,872,514	\$1,507,584	\$1,631,034	\$1,305,924	As All Others
Portable Office Space	4,845,157	1,436,211	1,156,311	1,250,996	1,001,638	As All Others
Portable Equipment	2,606,521	772,630	622,054	672,991	538,846	As All Others
Ocean Monitoring Vesse	1,300,000	385,348	310,249	335,654	268,749	As All Others
Vactor Truck	798,555	236,709	190,578	206,183	165,085	As All Others
Underground Storage Tank	797,821	236,492	190,402	205,994	164,933	As All Others
Plans	238,542	70,709	56,929	61,590	49,314	As All Others
Misc. Equipment	90,315,500	26,771,493	21,554,066	23,319,034	18,670,907	As All Others
Office Equipment	154,852	45,901	36,956	39,982	32,012	As All Others
Office Furnishings	1,547,592	458,740	369,338	399,581	319,933	As All Others
Security Equipment	163,153	48,362	38,937	42,125	33,728	As All Others
IT Equipment	41,203,069	12,213,493	9,833,236	10,638,437	8,517,903	As All Others
Vehicles	8,310,451	2,463,400	1,983,314	2,145,719	1,718,018	As All Others
HVAC	5,497,336	1,629,531	1,311,956	1,419,386	1,136,463	As All Others
Software	3,852,718	1,142,030	919,463	994,754	796,472	As All Others
Generators	30,472,891	9,032,833	7,272,447	7,867,956	6,299,655	As All Others
Total General Plant	\$198,421,213	\$58,816,396	\$47,353,819	\$51,231,416	\$41,019,582	
Total Depreciation of Capital Plant in Service	\$1,792,343,701	\$597,112,367	\$376,106,919	\$426,647,426	\$392,476,989	
Plus: Work In Process	\$0	\$0	\$0	\$0	\$0	As Original Cost Plant Before General
Original Cost Less Depreciation	\$1,928,053,330	\$675,677,727	\$359,905,458	\$514,277,929	\$378,192,216	

Description	Expenses FY 2023-24	Strength				Basis of Classification
		Volume All	Volume -WH	Biological Oxygen Demand	Total Suspended Solids	
		(VOL-1)	(VOL-2)	(BOD)	(TSS)	
Expenses						
Total Operations & Maintenance Expense	\$209,891,777					
Preliminary Treatment - Plant #1	3.1% \$6,439,560	\$4,829,670	\$0	\$321,978	\$1,287,912	Headworks
Primary Treatment - Plant #1	6.4% 13,444,703	2,016,705	0	3,361,176	8,066,822	Primary Sedimentation O&M
Secondary Treatment - Plant #1	2.6% 5,413,501	0	0	5,413,501	0	Secondary Sedimentation O&M
Effluent Disposal - Plant #1	0.0% 41,555	41,555	0	0	0	Effluent Disposal
Solids Handling - Plant #1						
- Solids Handling	10.8% \$22,636,221	\$0	\$0	\$5,659,055	\$16,977,166	Solids Handling
- Solids Disposals	8.1% 17,093,598	0	0	7,692,119	9,401,479	Solids Disposal
Co-Generation Facilities - Plant #1	8.2% 17,187,959	0	0	4,296,990	12,890,969	Digestion
Utility Units - Plant #1	1.3% 2,743,651	246,831	394,583	825,599	1,276,638	As All Others O&M
Electrical Distribution - Plant #1	0.8% 1,692,893	152,300	243,466	509,413	787,714	As All Others O&M
Miscellaneous Buildings - Plant #1	5.0% 10,528,011	947,147	1,514,103	3,168,011	4,898,750	As All Others O&M
Preliminary Treatment - Plant #2	2.5% 5,194,118	3,895,589	0	259,706	1,038,824	Headworks
Primary Treatment - Plant #2	3.4% 7,181,356	1,077,203	0	1,795,339	4,308,813	Primary Sedimentation O&M
Secondary Treatment - Plant #2	3.3% 6,881,627	0	0	6,881,627	0	Secondary Sedimentation O&M
Oxygen Generation Facility (Air Product)	0.5% 1,094,468	0	0	1,094,468	0	100% (BOD)
Effluent Disposal - Plant #2	0.7% 1,504,016	1,504,016	0	0	0	Effluent Disposal
Solids - Plant #2						
- Solids Handling	6.1% \$12,887,915	\$0	\$0	\$3,221,979	\$9,665,936	Solids Handling
- Solids Disposals	3.7% 7,816,481	0	0	3,517,416	4,299,064	Solids Disposal
Central Generation Facility - Plant #2	3.1% 6,596,431	593,444	948,677	1,984,949	3,069,361	As All Others O&M
Utility Units - Plant #2	0.8% 1,659,356	149,283	238,643	499,321	772,109	As All Others O&M
Electrical Distribution - Plant #2	0.6% 1,311,431	117,982	188,606	394,626	610,217	As All Others O&M
Miscellaneous Buildings - Plant #2	1.7% 3,495,583	314,478	502,723	1,051,865	1,626,517	As All Others O&M
External Location	0.3% 650,543	58,526	93,559	195,757	302,702	As All Others O&M
Nerissa	0.1% 299,978	26,987	43,142	90,267	139,581	As All Others O&M
Revenue Area 13	0.0% 9,634	0	8,671	482	482	Collection O&M
Revenue Area 1	0.2% 404,290	0	363,861	20,214	20,214	Collection O&M
Revenue Area 2	2.6% 5,551,050	0	4,995,945	277,553	277,553	Collection O&M
Revenue Area 3	3.6% 7,487,637	0	6,738,874	374,382	374,382	Collection O&M
Revenue Area 14	0.0% 98,878	0	88,990	4,944	4,944	Collection O&M
Revenue Area 5	2.8% 5,827,290	0	5,244,561	291,364	291,364	Collection O&M
Revenue Area 6	0.3% 600,369	0	540,332	30,018	30,018	Collection O&M
Revenue Area 7	0.6% 1,354,052	0	1,218,647	67,703	67,703	Collection O&M
Revenue Area 11	1.1% 2,405,454	0	2,164,908	120,273	120,273	Collection O&M
Joint Revenue Areas	0.7% 1,462,451	131,569	210,325	440,070	680,488	As All Others O&M
Non Area Specific	14.7% 30,895,718	2,779,517	4,443,319	9,296,910	14,375,972	As All Others O&M
Additional Expenditures (Input on Dashboard)	\$0	\$0	\$0	\$0	\$0	As All Others O&M
Total Operations & Maintenance Expense	\$209,891,777	\$18,882,803	\$30,185,933	\$63,159,074	\$97,663,967	

Description	Total Expenses FY 2023-24	Strength				Basis of Classification
		Volume All	Volume -WH	Biological Oxygen Demand	Total Suspended Solids	
		(VOL-1)	(VOL-2)	(BOD)	(TSS)	
Capital Funded Through Rates (Capital Exp less Transfer In)	\$296,774,641	\$86,561,706	\$40,955,955	\$80,720,561	\$88,536,419	Capital
Transfers Out						
Equity Purchases (Joint Operations)	\$3,500,000	\$314,876	\$503,358	\$1,053,194	\$1,628,572	As Total Operations & Maintenance
Self Insurance Fund Requirements	3,850,000	346,363	553,694	1,158,513	1,791,429	As Total Operations & Maintenance
Total Transfers Out	\$7,350,000	\$661,239	\$1,057,052	\$2,211,707	\$3,420,001	
Transfers In						
Use of Fund Balance (Policy Driven Adjustment)	(\$85,196,742)	(\$29,146,774)	(\$16,854,614)	(\$21,547,102)	(\$17,648,252)	As Original Cost Plant In Service
Total Transfers In	(\$85,196,742)	(\$29,146,774)	(\$16,854,614)	(\$21,547,102)	(\$17,648,252)	
Debt Service						
2010A Build America Bonds	\$2,986,574	\$1,046,632	\$557,497	\$796,622	\$585,824	Original Cost Less Depreciation
2010C Build America Bonds	6,724,010	2,356,399	1,255,156	1,793,524	1,318,930	Original Cost Less Depreciation
2014A Refunding	11,044,000	3,870,321	2,061,559	2,945,813	2,166,307	Original Cost Less Depreciation
2015A Refunding	6,375,500	2,234,266	1,190,101	1,700,564	1,250,569	Original Cost Less Depreciation
2016A Refunding	11,396,050	3,993,695	2,127,275	3,039,717	2,235,362	Original Cost Less Depreciation
2017A Refunding	3,290,750	1,153,229	614,277	877,756	645,488	Original Cost Less Depreciation
2021A Refunding	22,713,500	7,959,845	4,239,879	6,058,469	4,455,307	Original Cost Less Depreciation
2022A Refunding	4,081,000	1,430,168	761,791	1,088,543	800,498	Original Cost Less Depreciation
New Low Interest Loan	0	0	0	0	0	Total Capital
New COP	0	0	0	0	0	Total Capital
Debt Issuance Costs	0	0	0	0	0	Total Capital
Total Debt Service	\$68,611,384	\$24,044,555	\$12,807,536	\$18,301,009	\$13,458,285	
Total Revenue Requirements	\$497,431,060	\$101,003,529	\$68,151,862	\$142,845,249	\$185,430,420	
Less: Miscellaneous Revenues						
Property Taxes	\$112,081,316	\$22,758,146	\$15,355,998	\$32,185,935	\$41,781,238	As Total Revenue Requirement Less Direct A
IRWD O&M Assessment	0	0	0	0	0	As Total Revenue Requirement Less Direct A
IRWD Capital Assessment	0	0	0	0	0	As Total Revenue Requirement Less Direct A
IRWD Solids Assessment	0	0	0	0	0	As Total Revenue Requirement Less Direct A
IRWD	16,358,057	16,358,057	0	0	0	100% (VOL-1)
SAWPA	3,138,000	3,138,000	0	0	0	100% (VOL-1)
New COP Issues	0	0	0	0	0	As Total Revenue Requirement Less Direct A
Interest Revenues	0	0	0	0	0	As Total Revenue Requirement Less Direct A
Capital Facilities Capacity Charges	0	0	0	0	0	As Total Revenue Requirement Less Direct A
General User Rebates	(12,000,000)	(2,436,604)	(1,644,092)	(3,445,991)	(4,473,313)	As Total Revenue Requirement Less Direct A
Equity Sale to 7 or 14	3,500,000	314,876	503,358	1,053,194	1,628,572	As Total Operations & Maintenance
Share of SFI Revenue	3,850,000	346,363	553,694	1,158,513	1,791,429	As Total Operations & Maintenance
Share of JO Revenue	12,058,809	12,058,809	0	0	0	100% (VOL-1)
CIP Reimbursements	10,220,909	3,187,879	1,577,973	2,711,361	2,743,696	Total Capital
Total Miscellaneous Revenues	\$149,207,091	\$55,725,526	\$16,346,932	\$33,663,012	\$43,471,622	
Net Revenue Requirements	\$348,223,968	\$45,278,003	\$51,804,930	\$109,182,237	\$141,958,798	

Orange County Sanitation District
 Cost of Service Rate Study
 Functionalization and Allocation
 Exhibit 11 - Summary of Basis of Allocation

Description	Plant/ Revenue Requirement	Volume All	Volume -WH	Strength		Totals
				Biological Oxygen Demand	Total Suspended Solids	
				(BOD)	(TSS)	
100% (VOL-1)	2/3	100.0%				100.00%
100% (VOL-2)	0/0		100.0%			100.00%
100% (BOD)	0/1			100.0%		100.00%
100% (TSS)	0/0				100.0%	100.00%
Allocation of Plant Assets Types	0/0					
Collection	22/0	0.0%	90.0%	10.0%		100.00%
Primary Sedimentation	6/0			30.0%	70.0%	100.00%
Secondary Sedimentation	6/0			70.0%	30.0%	100.00%
Interplant	48/0	90.0%		10.0%		100.00%
Headworks	22/2	75.0%		5.0%	20.0%	100.00%
As All Others	44/0	29.6%	23.9%	25.8%	20.7%	100.00%
Effluent Disposal	10/2	100.0%				100.00%
Activated Sludge Process	4/0			100.0%		100.00%
Oxygen Activated Sludge Process	0/0			100.0%		100.00%
Blower Equipment and Structures	0/0			100.0%		100.00%
Aeration Equipment and Structures	2/0			100.0%		100.00%
Trickling Filters	2/0			100.0%		100.00%
Sludge Thickening	12/0			25.0%	75.0%	100.00%
Digestion	4/1			25.0%	75.0%	100.00%
Solids Handling	2/2			25.0%	75.0%	100.00%
Solids Disposal	0/2			45.0%	55.0%	100.00%
Allocations Based on Plant In Service	0/0					
As Treatment Plant	0/0	40.3%	0.0%	31.5%	28.1%	100.00%
As Treatment Plant Structures and Improvements	0/0	56.4%	0.0%	22.7%	20.9%	100.00%
As Treatment Less Interplant Collection	6/0	35.1%	0.0%	33.8%	31.1%	100.00%
As Revenue Area 14	0/0	0.0%	89.9%	10.0%	0.0%	100.00%
As Revenue Area 15	0/0	0.2%	89.6%	10.1%	0.1%	100.00%
As Collection (Rev. 14 & 15)	0/0	0.2%	89.6%	10.1%	0.1%	100.00%
As Original Cost Plant Before General	1/0	34.5%	19.5%	25.3%	20.7%	100.00%
As Original Cost Plant In Service	0/1	34.2%	19.8%	25.3%	20.7%	100.00%
As Orginal Cost Plant Before General Less Direct Assignment	0/0	34.5%	19.5%	25.3%	20.7%	100.00%
Original Cost Less Depreciation	0/12	35.0%	18.7%	26.7%	19.6%	100.00%
As Original Cost General Plant	0/0	29.6%	23.9%	25.8%	20.7%	100.00%
As Orginal Cost of Vehicles	0/0	29.6%	23.9%	25.8%	20.7%	100.00%
Allocation of Expense Types	0/0					
Secondary Sedimentation O&M	0/2			100.0%		100.00%
Collection O&M	0/9	0.0%	90.0%	5.0%	5.0%	100.00%
Primary Sedimentation O&M	0/2	15.0%		25.0%	60.0%	100.00%
As All Others O&M	0/12	9.0%	14.4%	30.1%	46.5%	100.00%
Allocation Based on Revenue Requirements	0/0					
As Total Operations & Maintenance	0/10	9.0%	14.4%	30.1%	46.5%	100.00%
As Total Revenue Requirement	0/0	20.3%	13.7%	28.7%	37.3%	100.00%
As Total Revenue Requirement Less Direct Assignment	0/8	20.3%	13.7%	28.7%	37.3%	100.00%
Allocation Based on Capital Projects	0/0					
Capital	0/1	29.2%	13.8%	27.2%	29.8%	100.00%
Rehabilitation	0/0	47.4%	28.6%	21.1%	2.8%	100.00%
Total Capital	0/4	31.2%	15.4%	26.5%	26.8%	100.00%

Orange County Sanitation District
 Cost of Service Rate Study
 Functionalization and Allocation
 Exhibit 12 - Allocation by Component

Classification Components	Net Revenue Requirement	General Users	Permitted Users	Wastehaulers	Allocation Factor	Checks
Volume						
Volume All	\$45,278,003	\$42,977,052	\$2,294,394	\$6,557	(VOL-1)	
Volume Less Collection	51,804,930	49,179,414	2,625,517	0	(VOL-2)	
Total Volume	\$97,082,934	\$92,156,466	\$4,919,911	\$6,557		
Strength Distribution						
Biochemical Oxygen Demand	\$109,182,237	\$100,176,735	\$8,735,098	\$270,404	(BOD)	
Total Suspended Solids	141,958,798	139,365,719	2,287,354	305,725	(TSS)	
Total Strength Distribution	\$160,987,167	\$149,356,149	\$11,360,615	\$270,404		
Net Revenue Requirement	\$348,223,968	\$331,698,920	\$15,942,363	\$582,685		

Orange County Sanitation District
 Cost of Service Rate Study
 Cost of Service Summary
 Exhibit 13 - Summary of Cost Allocation

Description		General Users	Permitted Users	Wastehaulers
Revenues at Present Rates	\$336,448,278	\$321,495,913	\$14,202,366	\$750,000
Less: Allocated O&M Expenses	\$348,223,968	\$331,698,920	\$15,942,363	\$582,685
Balance/(Deficiency) of Rates	(\$11,775,690)	(\$10,203,007)	(\$1,739,998)	\$167,315
Required % Change in Rates	3.5%	3.2%	12.3%	-22.3%

Orange County Sanitation District
 Cost of Service Rate Study
 Cost of Service Summary
 Exhibit 14 - Average Unit Cost

Description	Total	General Users	Permitted Users	Wastehaulers	
Volume (kgal)	\$1.75	\$1.75	\$1.75	\$0.79	44.88%
Strength Related					
BOD \$/Lbs	\$0.76	\$0.76	\$0.76	\$0.76	
TSS \$/Lbs	\$0.86	\$0.86	\$0.86	\$0.86	
	\$1.63	\$1.63	\$1.63	\$1.63	
Rate per EDU (doesn't account for Strength)	\$359.08	\$358.01	\$389.51	\$249.63	
Volume Rate (Simple)	\$100.11	\$99.47	\$120.21	\$2.81	
BOD Rate (Simple)	112.59	108.12	213.42	115.85	
TSS Rate (Simple)	146.38	150.42	55.89	130.98	
Total	\$359.08	\$358.01	\$389.51	\$249.63	
Basic Data:					
Annual Water Consumption(/Kgal)	55,375,341	52,560,962	2,806,046	8,333	
BOD (Lbs)	143,118,077	131,313,501	11,450,126	354,450	
TSS (Lbs)	164,583,744	161,577,388	2,651,906	354,450	
Number of Accounts	558,973	558,663	309	1	
Equivalent Residential Unit	969,764	926,501	40,929	2,334	
Weighted Customer	558,973	558,663	309	1	
Wastehauler Trips				7,940	
	Total	Flow	BOD	TSS	
Revenue Requirement	\$348,223,968	\$97,082,934	\$109,182,237	\$141,958,798	
Percent Allocation of Revenue Requirement	100.0%	27.9%	31.4%	40.8%	
Per unit Cost (\$/MG \$/1,000 lbs)		\$1,753.18	\$ 762.88	\$ 862.53	
		\$1.75	\$0.76	\$0.86	

Orange County Sanitation District
 Cost of Service Rate Study
 Rate Design
 Exhibit 15 - Use Code Rate Calculation

General Users	% of EDU	Current Rate					Proposed Rates				
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
000 - CONVERSION-C/I, RURAL PC LIEN DATE	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
001 - VACANT LAND PARCEL	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
002 - ONE RESIDENCE	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
003 - TWO OR MORE RESIDENCES	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
004 - MISCELLANEOUS IMPROVEMENTSONLY	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
005 - COMMON AREA PARCEL	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
006 - "HOLD" PARCEL	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
007 - MOBILEHOME	50%	173.50	179.00	185.50	192.00	198.50	205.50	212.50	220.00	227.50	235.50
008 - EQUIVALENT TO VACANT	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
010 - DUPLEX ONLY	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
011 - TRIPLEX ONLY	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
012 - 04-UNITS ONLY	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
013 - APARTMENTS ONLY	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
014 - 17-25 UNITS ONLY	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
015 - 26-40 UNITS ONLY	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
016 - 41-99 UNITS ONLY	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
017 - 100 OR MORE UNITS	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
018 - DEVELOPED WITH A MIX OF FORM TYPES	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
019 - SF WITH 1 OR 2 RENTAL UNITS	85%	294.95	304.30	315.35	326.40	337.45	349.35	361.25	374.00	386.75	400.35
020 - AMUSEMENT PARKS	144%	499.68	515.52	534.24	552.96	571.68	591.84	612.00	633.60	655.20	678.24
021 - AUTOMOBILE DEALERSHIP	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
022 - AUTO REPAIR SHOP	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
023 - AUTOMOTIVE SERVICE	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
024 - USED CAR LOT	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
026 - AIRPORT AND RELATED BUILDINGS	53%	183.91	189.74	196.63	203.52	210.41	217.83	225.25	233.20	241.15	249.63
028 - BOWLING ALLEYS	112%	388.64	400.96	415.52	430.08	444.64	460.32	476.00	492.80	509.60	527.52
029 - CONVENTIONAL CAR WASH	796%	2,762.12	2,849.68	2,953.16	3,056.64	3,160.12	3,271.56	3,383.00	3,502.40	3,621.80	3,749.16
030 - COIN OPERATED CAR WASH	151%	523.97	540.58	560.21	579.84	599.47	620.61	641.75	664.40	687.05	711.21
032 - CEMETERY AND RELATED BUILDINGS	101%	350.47	361.58	374.71	387.84	400.97	415.11	429.25	444.40	459.55	475.71

Orange County Sanitation District
 Cost of Service Rate Study
 Rate Design
 Exhibit 15 - Use Code Rate Calculation

General Users	% of EDU	Current Rate				Proposed Rates					
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
033 - CHURCH BUILDINGS	20%	69.40	71.60	74.20	76.80	79.40	82.20	85.00	88.00	91.00	94.20
034 - DORMITORY	97%	336.59	347.26	359.87	372.48	385.09	398.67	412.25	426.80	441.35	456.87
035 - ENTERTAINMENT CENTER	144%	499.68	515.52	534.24	552.96	571.68	591.84	612.00	633.60	655.20	678.24
036 - FINANCIAL BUILDINGS	27%	93.69	96.66	100.17	103.68	107.19	110.97	114.75	118.80	122.85	127.17
037 - FRATERNAL BUILDINGS	51%	176.97	182.58	189.21	195.84	202.47	209.61	216.75	224.40	232.05	240.21
038 - FUNERAL HOME	101%	350.47	361.58	374.71	387.84	400.97	415.11	429.25	444.40	459.55	475.71
039 - GOLF COURSE	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
040 - HEALTH CLUB	29%	100.63	103.82	107.59	111.36	115.13	119.19	123.25	127.60	131.95	136.59
042 - HOSPITAL	97%	336.59	347.26	359.87	372.48	385.09	398.67	412.25	426.80	441.35	456.87
043 - HIGH DEMAND HOTEL/MOTEL	97%	336.59	347.26	359.87	372.48	385.09	398.67	412.25	426.80	441.35	456.87
044 - LUMBER/CONST. MATERIALSYARD	17%	58.99	60.86	63.07	65.28	67.49	69.87	72.25	74.80	77.35	80.07
045 - MARINAS	53%	183.91	189.74	196.63	203.52	210.41	217.83	225.25	233.20	241.15	249.63
047 - SUPERMARKET	151%	523.97	540.58	560.21	579.84	599.47	620.61	641.75	664.40	687.05	711.21
048 - CONVENIENCE MARKET	151%	523.97	540.58	560.21	579.84	599.47	620.61	641.75	664.40	687.05	711.21
050 - SINGLE MEDICAL BLDGS TO 3 STORIES	124%	430.28	443.92	460.04	476.16	492.28	509.64	527.00	545.60	564.20	584.04
051 - SMALL MEDICAL CENTER	124%	430.28	443.92	460.04	476.16	492.28	509.64	527.00	545.60	564.20	584.04
052 - MEDICAL CENTER COMPLEX	124%	430.28	443.92	460.04	476.16	492.28	509.64	527.00	545.60	564.20	584.04
053 - HIGH RISE MEDICAL	124%	430.28	443.92	460.04	476.16	492.28	509.64	527.00	545.60	564.20	584.04
054 - CONVERTED RESIDENCE TO MED OFFICE	124%	430.28	443.92	460.04	476.16	492.28	509.64	527.00	545.60	564.20	584.04
055 - MOBILEHOME PARK	50%	173.50	179.00	185.50	192.00	198.50	205.50	212.50	220.00	227.50	235.50
056 - LOW DEMAND HOTEL/MOTEL	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
057 - MOTORCYCLE/SMALL VEHICLEBLDGS	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
058 - NURSERIES	10%	34.70	35.80	37.10	38.40	39.70	41.10	42.50	44.00	45.50	47.10
060 - NURSING HOME	102%	353.94	365.16	378.42	391.68	404.94	419.22	433.50	448.80	464.10	480.42
061 - CONVALESCENT HOSPITALS	102%	353.94	365.16	378.42	391.68	404.94	419.22	433.50	448.80	464.10	480.42
062 - CONVERTED RES USED ASNURSING HOME	102%	353.94	365.16	378.42	391.68	404.94	419.22	433.50	448.80	464.10	480.42
063 - LOW RISE RETIREMENT BUILDING(S)	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
064 - HIGH RISE RETIREMENT BUILDING(S)	70%	242.90	250.60	259.70	268.80	277.90	287.70	297.50	308.00	318.50	329.70
065 - SINGLE OFFICE BLDGS TO 3STORIES	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
066 - SMALL OFFICE CENTER	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11

Orange County Sanitation District
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General Users	% of EDU	Current Rate				Proposed Rates					
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
067 - OFFICE COMPLEX	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
068 - HIGH RISE OFFICE	30%	104.10	107.40	111.30	115.20	119.10	123.30	127.50	132.00	136.50	141.30
069 - CONVERTED RESIDENCE TOOFFICE	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
071 - PARKING GARAGE	17%	58.99	60.86	63.07	65.28	67.49	69.87	72.25	74.80	77.35	80.07
072 - PAVED PARKING LOT	17%	58.99	60.86	63.07	65.28	67.49	69.87	72.25	74.80	77.35	80.07
073 - RECREATION	143%	496.21	511.94	530.53	549.12	567.71	587.73	607.75	629.20	650.65	673.53
074 - RECREATION VEHICLE PARK	27%	93.69	96.66	100.17	103.68	107.19	110.97	114.75	118.80	122.85	127.17
076 - RESTAURANT - LOW DEMAND	300%	1,041.00	1,074.00	1,113.00	1,152.00	1,191.00	1,233.00	1,275.00	1,320.00	1,365.00	1,413.00
077 - RESTAURANT - COFFEE SHOP	600%	2,082.00	2,148.00	2,226.00	2,304.00	2,382.00	2,466.00	2,550.00	2,640.00	2,730.00	2,826.00
078 - RESTAURANT - DINNER HOUSE	600%	2,082.00	2,148.00	2,226.00	2,304.00	2,382.00	2,466.00	2,550.00	2,640.00	2,730.00	2,826.00
079 - RESTAURANT - CONVERSION FROM SFR	600%	2,082.00	2,148.00	2,226.00	2,304.00	2,382.00	2,466.00	2,550.00	2,640.00	2,730.00	2,826.00
081 - PRE-SCHOOLS, NURSERY ORCHILDCARE	82%	284.54	293.56	304.22	314.88	325.54	337.02	348.50	360.80	373.10	386.22
082 - PRIVATE SCHOOLS	82%	284.54	293.56	304.22	314.88	325.54	337.02	348.50	360.80	373.10	386.22
083 - AUTOMOTIVE SERVICE STATION	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
084 - MARINE SERVICE STATION	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
085 - COMBIN:SERVICESTATION/RESTAURANT	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
086 - COMBIN:SERVICESTATION/CONVENIENCE	41%	142.27	146.78	152.11	157.44	162.77	168.51	174.25	180.40	186.55	193.11
088 - LOW DEMAND CENTER	53%	183.91	189.74	196.63	203.52	210.41	217.83	225.25	233.20	241.15	249.63
089 - AVERAGE DEMAND CENTER	139%	482.33	497.62	515.69	533.76	551.83	571.29	590.75	611.60	632.45	654.69
090 - HIGH FLOW CENTER	226%	784.22	809.08	838.46	867.84	897.22	928.86	960.50	994.40	1,028.30	1,064.46
092 - SKATING RINKS	112%	388.64	400.96	415.52	430.08	444.64	460.32	476.00	492.80	509.60	527.52
094 - DEPARTMENT STORE	23%	79.81	82.34	85.33	88.32	91.31	94.53	97.75	101.20	104.65	108.33
095 - DISCOUNT STORE	23%	79.81	82.34	85.33	88.32	91.31	94.53	97.75	101.20	104.65	108.33
096 - UNATTACHED SINGLE STORE	23%	79.81	82.34	85.33	88.32	91.31	94.53	97.75	101.20	104.65	108.33
097 - STRIP STORE	23%	79.81	82.34	85.33	88.32	91.31	94.53	97.75	101.20	104.65	108.33
098 - STORE WITH OFFICES OR LIVING UNITS	82%	284.54	293.56	304.22	314.88	325.54	337.02	348.50	360.80	373.10	386.22
099 - STORE WITH OFFICES UPSTAIRS	82%	284.54	293.56	304.22	314.88	325.54	337.02	348.50	360.80	373.10	386.22
100 - DRIVE-IN THEATER	10%	34.70	35.80	37.10	38.40	39.70	41.10	42.50	44.00	45.50	47.10
101 - UNATTACHED THEATER	51%	176.97	182.58	189.21	195.84	202.47	209.61	216.75	224.40	232.05	240.21
103 - CHEMICAL TANK AND BULKSTORAGE	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00

Orange County Sanitation District
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General Users	% of EDU	Current Rate				Proposed Rates					
		FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
104 - FOOD PROCESSING PLANT	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
105 - COLD STORAGE PLANT	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
106 - FACTORY	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
107 - LIGHT INDUSTRIAL - SINGLETENANT	50%	173.50	179.00	185.50	192.00	198.50	205.50	212.50	220.00	227.50	235.50
108 - LIGHT INDUSTRIAL - MULTI TENANT	50%	173.50	179.00	185.50	192.00	198.50	205.50	212.50	220.00	227.50	235.50
109 - RESEARCH AND DEVELOPMENT	50%	173.50	179.00	185.50	192.00	198.50	205.50	212.50	220.00	227.50	235.50
110 - WAREHOUSE - SINGLE TENANT	17%	58.99	60.86	63.07	65.28	67.49	69.87	72.25	74.80	77.35	80.07
111 - WAREHOUSE - MULTI TENANT	17%	58.99	60.86	63.07	65.28	67.49	69.87	72.25	74.80	77.35	80.07
112 - STEEL BUILDING	7%	24.29	25.06	25.97	26.88	27.79	28.77	29.75	30.80	31.85	32.97
113 - MINI-WAREHOUSE	7%	24.29	25.06	25.97	26.88	27.79	28.77	29.75	30.80	31.85	32.97
114 - INDUSTRIAL PARK	50%	173.50	179.00	185.50	192.00	198.50	205.50	212.50	220.00	227.50	235.50
115 - RECREATIONAL VEHICLE STORAGE YARD	17%	58.99	60.86	63.07	65.28	67.49	69.87	72.25	74.80	77.35	80.07
116 - TRUCK TERMINAL	17%	58.99	60.86	63.07	65.28	67.49	69.87	72.25	74.80	77.35	80.07
118 - GOVERNMENTAL USEVACANT/DEVELOPED	82%	284.54	293.56	304.22	314.88	325.54	337.02	348.50	360.80	373.10	386.22
119 - PUBLIC UTILITY	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
120 - WATER MUTUAL OR COMPANY	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
121 - PARCEL OF MINIMAL OR NO VALUE	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
122 - SUBSURFACE PARCELS	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
124 - OIL/MINERAL RIGHTS	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125 - MINERAL RIGHTS EQUIPMENT	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126 - VACANT COMMON AREA-IMPSALLOCATED	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127 -	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
128 -	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
222 - OFFICE CONDO W/OUT INDIVIDUAL BATHROOMS	21%	72.87	75.18	77.91	80.64	83.37	86.31	89.25	92.40	95.55	98.91
223 - LAUNDROMAT	1800%	6,246.00	6,444.00	6,678.00	6,912.00	7,146.00	7,398.00	7,650.00	7,920.00	8,190.00	8,478.00
224 - NIGHTCLUB	200%	694.00	716.00	742.00	768.00	794.00	822.00	850.00	880.00	910.00	942.00
225 - UNITED STATES POST OFFICE	35%	121.45	125.30	129.85	134.40	138.95	143.85	148.75	154.00	159.25	164.85
333 - IRVINE RANCH WATER DISTRICT	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
555 - OPEN AIR FACILITIES	1133%	3,931.51	4,056.14	4,203.43	4,350.72	4,498.01	4,656.63	4,815.25	4,985.20	5,155.15	5,336.43
666 - UNASSIGNED VACANT	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
777 - SEPTIC TANK	0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
888 - CONVERSION-COMPOSITE PROPERTY	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00
999 - Manually Calculated Fee	100%	347.00	358.00	371.00	384.00	397.00	411.00	425.00	440.00	455.00	471.00

Orange County Sanitation District
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General Users	Current Rate				Proposed Rates						
	% of EDU	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
		1.753199412	\$0.000020	0.001%							

Permit User (Industrial)

	Allocated Costs	Property Tax Adj	Net Costs	Units
Biochemical Oxygen Demand (1,000 lbs)	\$8,735,098	\$0	\$8,735,098	11,450
Total Suspended Solids (1,000 lbs)	2,287,354	0	2,287,354	2,652
Volume (Million Gallons)	4,919,911	0	4,919,911	2,806
Total	\$15,942,363	\$0	\$15,942,363	

COSA Results	Proposed Rate									
	Current Rate	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
5 Year Rate Transition										
Biochemical Oxygen Demand (1,000 lbs)	\$667.99	\$705.11	\$744.28	\$785.64	\$829.29	\$875.37	\$906.06	\$937.78	\$970.60	\$1,004.57
Total Suspended Solids (1,000 lbs)	777.00	815.53	855.98	898.42	942.98	989.74	1,024.42	1,060.27	1,097.38	1,135.79
Volume (Million Gallons)	1,601.28	1,676.10	1,754.41	1,836.38	1,922.18	2,011.99	2,082.40	2,155.28	2,230.72	2,308.79
Biochemical Oxygen Demand % Change		5.6%	5.6%	5.6%	5.6%	5.6%	3.5%	3.5%	3.5%	3.5%
Total Suspended Solids % Change		5.0%	5.0%	5.0%	5.0%	5.0%	3.5%	3.5%	3.5%	3.5%
Volume (Million Gallons) % Change		4.7%	4.7%	4.7%	4.7%	4.7%	3.5%	3.5%	3.5%	3.5%

Wastehaulers Treatment Charge

In-County	Proposed Rate									
	Current Rate	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
Treatment		\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040
Adminstrative		0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Capital Charge		NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Wastehauler Charge	\$0.09	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090

Out of County

Treatment		\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040	\$0.040
Adminstrative		0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
Capital Charge		0.230	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
Total Wastehauler Charge	\$0.20	\$0.320	\$0.330	\$0.330	\$0.330	\$0.330	\$0.330	\$0.330	\$0.330	\$0.330

Orange County Sanitation District - 2022

Exhibit 1

Present and Calculated Capital Facilities Capacity Charge

Use Category	Ratio	Present CFCC ⁽¹⁾	Calculated CFCC ⁽²⁾	\$ Difference	% Change
2023					
Single Family Residential (SFR), Per Unit*					
5+ Bedrooms	1.39	\$7,949	\$7,739	(\$210)	-2.6%
4+ Bedrooms	1.19	6,806	6,626	(180)	-2.6%
3+ Bedrooms, *Base Charge	1.00	5,719	5,568	(151)	-2.6%
2+ Bedrooms	0.81	4,633	4,511	(122)	-2.6%
1+ Bedrooms	0.62	3,545	3,452	(94)	-2.6%
Multi-Family Residential (MFR)					
4+ Bedrooms	1.08	\$6,177	\$6,014	(\$163)	-2.6%
3+ Bedrooms	0.89	5,090	4,956	(134)	-2.6%
2+ Bedrooms	0.70	4,004	3,898	(106)	-2.6%
1+ Bedrooms	0.50	2,859	2,783	(76)	-2.7%
Studio	0.32	1,829	1,781	(48)	-2.6%
Non-Residential, Residential Accessory Structures, and Accessory Dwelling Units, Per 1,000 square feet⁽³⁾					
Low Demand		\$360	\$242	(\$118)	-32.8%
Average Demand		2,234	1,485	(749)	-33.5%
High Demand		5,309	3,521	(\$1,788)	-33.7%

NOTES:

(1) Present CFCC effective July 1, 2022.

(2) Calculated CFCC based on "Combined" methodology established in Water Environment Federation (WEF) Manual of Practice No. 27, 4th Edition, p. 206-211.

(3) Average demand is Commercial per 1,000 sq. ft. See Exhibit 3.

Orange County Sanitation District - 2022

Exhibit 2

Supplemental Capital Facilities Capacity Charge

Calculated Supplemental Capital Facilities Capacity Charge

	Rate	Years	Total ⁽¹⁾	Flow (gpd)	BOD (mg/L)	TSS (mg/L)
A Value of Existing and Future Assets, \$ Per Million			\$6,842	\$3,319	\$1,881	\$1,642
B Total EDUs			1,228,758	1,228,758	1,228,758	1,228,758
C SCFCC per EDU (A ÷ B)			\$5,568	\$2,701	\$1,531	\$1,336
D 30-Year Amortized SCFCC ⁽²⁾	3.4%	30		\$144	\$82	\$71
E EDU Basis				185	288	290
					0.4481	0.4503
				gpd	lbs/day ⁽³⁾	lbs/day ⁽³⁾
F SCFCC (D ÷ E ÷ 365 Days)				\$0.002140	\$0.500628	\$0.434827
				per gallon	per lb.	per lb.

Present and Calculated Supplemental Capital Facilities Capacity Charge

Use Category	Present SCFCC ⁽⁴⁾	Calculated SCFCC	\$ Difference	% Change
	2022			
Daily Charge ⁽⁵⁾				
FLOW	\$0.001996	\$0.002140	\$0.000144	7.2%
BOD	\$0.481210	\$0.500628	\$0.019418	4.0%
TSS	\$0.270840	\$0.434827	\$0.163987	60.5%

NOTES:

- (1) Calculated CFCC based on "Combined" methodology established in Water Environment Federation (WEF) Manual of Practice No. 27, 4th Edition, p. 206-211.
- (2) Bond Buyer's 20 Bond Index as of July 2022.
- (3) Calculated pounds equals (annual flow (x) 748 (x) strength factor mg/l (x) 8.34) / 1,000,000
- (4) Present SCFCC Ordinance No. OCSO-57, Table D, for July 1, 2022.
- (5) 2.10 (i) an increase of discharge flow of 25,000 gallons per day (gpd), or 25% per day over its established baseline whichever is less; or (ii) an increase of either BOD or SS discharge of 150 pounds each per day, or 25% each per day, whichever is lesser, over its established baseline authorization. The daily averages will be based on the daily discharges for a year, utilizing discharge records and reports of the discharge or the District.

Orange County Sanitation District - 2022
Exhibit 3
Development of Calculated Capital Facilities Capacity Charge

Description	FLOW	BOD	TSS	TOTAL
BUY-IN (Existing)				
Assets ⁽¹⁾ (RCNLD)				
Sewage Collection Facilities	\$503,494,522 +	\$55,943,836 +	\$0 =	\$559,438,358
Sewage Treatment Facilities	\$747,036,211 +	\$675,868,426 +	\$535,137,514 =	\$1,958,042,151
Effluent Disposal	85,569,158 +	0 +	0 =	85,569,158
Solids Disposal Facility	0 +	3,974,804 +	11,924,411 =	15,899,214
Total Treatment	\$832,605,368	\$679,843,229	\$547,061,925	\$2,059,510,523
Managed by IRWD	23,135,681 +	2,570,631 +	0 =	25,706,312
Total Assets ⁽¹⁾ (RCNLD)	\$1,359,235,570	\$738,357,696	\$547,061,925	\$2,644,655,192
Plus: Construction Work In Progress ⁽²⁾	190,381,235 +	110,980,326 +	106,322,733 =	407,684,294
Total Assets	\$1,549,616,806	\$849,338,022	\$653,384,658	\$3,052,339,486
Less: Outstanding Debt Principal ⁽³⁾	(\$368,799,051) +	(\$214,986,727) +	(\$205,964,222) =	(\$789,750,000)
Plus: Reserves ⁽⁴⁾	\$449,058,744 +	\$261,773,097 +	\$250,787,075 =	\$961,618,916
TOTAL BUY-IN (Existing)	\$1,629,876,499 +	\$896,124,392 +	\$698,207,511 =	\$3,224,208,402
INCREMENTAL (FUTURE) ⁽⁵⁾	1,689,310,256 +	984,761,980 +	943,433,755 =	3,617,505,992
TOTAL BUY-IN AND INCREMENTAL	\$3,319,186,756	\$1,880,886,372	\$1,641,641,266	\$6,841,714,393
Divided (÷) by Total EDUs ⁽⁶⁾	1,228,758	1,228,758	1,228,758	1,228,758
TOTAL CAPITAL FACILITIES CAPACITY CHARGE ⁽⁷⁾	\$2,701	\$1,531	\$1,336	\$5,568
Present Capital Facilities Capacity Charge 2023 ⁽⁸⁾	\$2,065	\$1,990	\$1,665	\$5,719
\$ Change				(\$151)
Residential Percentage EDUs ⁽⁹⁾				
	65.5%	65.5%	65.5%	65.5%
\$ percentage share	\$2,174,657,546	\$1,232,315,035	\$1,075,566,947	\$4,482,539,528
Total Residential EDUs	805,055	805,055	805,055	805,055
\$ per EDU CFCC	\$2,701	\$1,531	\$1,336	\$5,568
Present Capital Facilities Capacity Charge 2023 ⁽⁸⁾	\$2,065	\$1,990	\$1,665	\$5,719
\$ Change	\$636	(\$459)	(\$328)	(\$151)
Commercial/Industrial Percentage EDUs ⁽¹⁰⁾				
	34.5%	34.5%	34.5%	34.5%
\$ percentage share	\$1,144,536,103	\$648,575,244	\$566,077,728	\$2,359,189,075
Total Commercial-Industrial Square Footage (1,000 sq ft)	670,099	670,099	670,099	670,099
\$ per 1,000 sq. ft. CFCC	\$1,708	\$968	\$845	\$3,521
Present Capital Facilities Capacity Charge 2023 ⁽⁸⁾	\$1,314	\$1,265	\$1,059	\$3,638
\$ Change	\$394	(\$297)	(\$214)	(\$117)

NOTES:

- (1) Asset listing as of June, 2021, service date of asset and Sept 2022 ENR, CCI for 20-City Average. See Exhibit 7.
- (2) Construction work in progress as of June 2021. See Exhibit 3.
- (3) Outstanding debt service principal as of June 2022. See Exhibit 5. Flow, BOD, TSS split based on % of CIP see Exhibit 8.
- (4) Cash reserve levels as of June 2022. See Exhibit 6. Flow, BOD, TSS split based on % of CIP see Exhibit 8.
- (5) Future projects based on Ten-Year CIP from 2021/22 to 2031/32. See Exhibit 8.
- (6) Existing and future EDUs based on capacity. See Exhibit 7.
- (7) Calculated CFCC based on "Combined" methodology established in Water Environment Federation (WEF) Manual of Practice No. 27, 4th Edition, p. 206-211.
- (8) Present CFCC as of July 1, 2022 Residential, 3+ Bedrooms, *Base Charge
- (9) Percentage of residential EDUs see Exhibit 7.
- (10) Percentage of commercial/industrial EDUs and total square footage per EDU see Exhibit 7.

Orange County Sanitation District - 2022

Exhibit 4

Development of Construction Work in Progress

CATEGORY ⁽¹⁾	LA ENR-CCI	13,120	September 2022		(2)			\$		
	DATE	June 30, 2021 COST	ENR FACTOR	2022 COST	FLOW	BOD	TSS	FLOW	BOD	TSS
Construction Work in Progress	06/01/2021	\$401,200,044	1.02	\$407,684,294	47%	27%	26%	\$190,381,235	\$110,980,326	\$106,322,733
TOTAL		\$401,200,044		\$407,684,294				\$190,381,235	\$110,980,326	\$106,322,733

NOTES:

(1) Construction work in progress as of June 30, 2021 CAFR, page 29.

(2) CWIP allocated based on overall allocation for CIP. See Exhibit 8.

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Orange County Sanitation District - 2022

Exhibit 5

Development of Debt Credit (Outstanding debt principal only)

Year	2010A Build America Bonds	2010C Build America Bonds	2014A Refunding	2015A Refunding	2016A Refunding	2017A Refunding	2021A Refunding	2022A Refunding	TOTAL PRINCIPAL (1)
FY 2022-23	0	0	0	0	0	0	0	0	0
FY 2023-24	0	0	9,085,000	0	5,370,000	0	17,125,000	0	31,580,000
FY 2024-25	0	0	9,545,000	0	5,635,000	0	17,940,000	0	33,120,000
FY 2025-26	0	0	10,025,000	0	5,915,000	0	18,890,000	0	34,830,000
FY 2026-27	0	0	10,525,000	0	6,210,000	15,115,000	4,595,000	0	36,445,000
FY 2027-28	0	0	0	15,240,000	6,525,000	15,830,000	4,825,000	0	42,420,000
FY 2028-29	0	0	0	16,045,000	6,845,000	16,580,000	5,070,000	0	44,540,000
FY 2029-30	0	0	0	15,965,000	7,190,000	18,290,000	5,320,000	0	46,765,000
FY 2030-31	0	5,735,000	0	6,215,000	7,570,000	0	5,590,000	22,485,000	47,595,000
FY 2031-32	0	17,095,000	0	0	7,950,000	0	5,865,000	22,805,000	53,715,000
FY 2032-33	0	17,895,000	0	0	8,350,000	0	6,160,000	36,330,000	68,735,000
FY 2033-34	9,590,000	9,130,000	0	17,180,000	8,760,000	0	6,470,000	0	51,130,000
FY 2034-35	10,145,000	9,440,000	0	18,040,000	9,205,000	0	6,790,000	0	53,620,000
FY 2035-36	10,735,000	9,770,000	0	18,940,000	9,660,000	0	7,130,000	0	56,235,000
FY 2036-37	11,355,000	10,100,000	0	19,885,000	10,145,000	0	0	0	51,485,000
FY 2037-38	12,015,000	10,430,000	0	0	10,550,000	0	0	0	32,995,000
FY 2038-39	12,710,000	10,770,000	0	0	10,975,000	0	0	0	34,455,000
FY 2039-40	13,450,000	11,125,000	0	0	0	0	0	0	24,575,000
FY 2040-41	0	20,805,000	0	0	0	0	0	0	20,805,000
FY 2041-42	0	12,430,000	0	0	0	0	0	0	12,430,000
FY 2042-43	0	9,795,000	0	0	0	0	0	0	9,795,000
FY 2043-44	0	2,480,000	0	0	0	0	0	0	2,480,000
TOTAL	\$80,000,000	\$157,000,000	\$39,180,000	\$127,510,000	\$126,855,000	\$65,815,000	\$111,770,000	\$81,620,000	\$789,750,000

NOTES:

(1) Outstanding principal balance as of 2022 provided by OCS. Payment date for Bonds is Feb 1st.

2010A acquisition, construction, and installation of additional improvements made to the wastewater system.

2010C acquisition, construction, and installation of additional improvements made to the wastewater system.

2014A refund \$93,930,000, 2007 Series B

2015A refund \$152,990,000, 2007 Series B

2016A refund \$162,780,000, 2009 Series A

2017A refund \$91,620,000, 2007 Series A

2021A

2022A

Orange County Sanitation District - 2022
Exhibit 6
Summary of Reserve Funds
For the Year Ended June 30, 2022

Account #	Total	% CFCC Eligible (1)	CFCC
CASH RESERVES	\$961,618,916	100%	\$961,618,916
TARGET RESERVES			
50% Next Year Operating Expense	\$100,572,351	0%	\$0
10% Next Year Operating Expense	20,114,470	0%	0
100% Next Year AUG COP Svc.	19,266,567	0%	0
50% average ten-year CIP Balance	153,752,792	0%	0
Debt Svc @ 10% Outstanding COP	78,975,000	0%	0
Self Funded Insurance @ \$100M	100,000,000	0%	0
Repl & Refurb	<u>75,000,000</u>	0%	<u>0</u>
TOTAL TARGET RESERVES	\$547,681,180		\$0
BALANCE	\$413,937,736		\$961,618,916

NOTES:

(1) Reserves that are not debt or CIP related levels.

Orange County Sanitation District - 2022
Exhibit 7
Development of Equivalent Dwelling Units

Treatment Plant - Permit Capacity	Permit Rated Capacity Dry Weather Flow (MGD)	MGD
Plant 1 Fountain Valley ⁽¹⁾	182.00	
Plant 2 Huntington Beach ⁽²⁾	<u>150.00</u>	
Net ⁽³⁾	332.00	332.00
SAWPA ⁽⁴⁾ Rights (17 mgd purchased)		(30.00)
RA 14 ⁽⁴⁾		(10.00)
Urban Dry Weather Runoff ⁽⁴⁾		<u>(10.00)</u>
Total		282.00
EDU		
Average Household Gallons per Person Per Day (GPCD) ⁽⁵⁾	75	
Number of Persons per Household ⁽⁶⁾	<u>3.1</u>	
Total Gallons per EDU ⁽⁶⁾	230	

EQUIVALENT DWELLING UNITS						
EDU Calculation	Total Capacity (MGD)	Average Daily Flow		Total EDUs	% of	% Growth
		gallons	Per EDU ⁽⁶⁾			
Equivalent Dwelling Units - Existing ⁽⁷⁾						
Residential				630,912	65.52%	
Commercial				292,199	30.34%	
Industrial				<u>39,854</u>	<u>4.14%</u>	
Equivalent Dwelling Units - Existing	221.00		230	962,963	100.00%	78.37%
Equivalent Dwelling Units - Future						
Residential				174,143	65.52%	
Commercial				80,652	30.34%	
Industrial				<u>11,000</u>	<u>4.14%</u>	
Equivalent Dwelling Units - Future	61.00		230	265,795	100.00%	21.63%
Buildout EDU's	282.00		230	1,228,758		100.00%

Total Square Feet for Commercial and Industrial

Assumption of Square Foot per EDU	1,581.52	square feet per EDU
Total Commercial and Industrial EDUs	423,706	EDUs
Total Square Feet (Comm/Ind EDUs X Sq. Ft. per EDU) ±1,000	670,099	total square feet per 1,000

NOTES:

- (1) 2017 Master Plan, Plant 1 Chapter 3, page 3-2, Table 3-2; PWWF Rated Capacity of 310 MGD, net of Sludge Recycle to PCs (7.8 MGD) and GWRS Return to PCs (17.0 MGD). Page 8-21, combined capacity of both plants 660 mgd.
- (2) 2017 Master Plan, Plant 2 Chapter 4, page 4-7, PWWF Rated Capacity of 317 MGD,
- (3) 2017 Master Plan, Interplant Facilities Chapter 5, page 5-4, Interplant Design Criteria 375 MGD
Page 8-22, Rated PWWF is Plant 1 at 320 MGD and Plant 2 at 340 MGD. Limited by conveyance by two 90" influent pipes.
- (4) 2017 Master Plan, Planning Assumptions Chapter 7, page 7-5, Table 7-3; Maximum SAWPA, RA 14, Urban Runoff.
SAWPA has the rights to purchase up to 30 mgd, they currently have only purchased 17 mgd. See page 7-16.
IRWD, called Revenue Area 14, See page 7-16.
- (5) 2017 Master Plan, Planning Assumptions Chapter 7, page 7-4, Table 7-2.
- (6) 2020 <https://www.census.gov/quickfacts/orangecountycalifornia> is 3.0 pph; Table 7-3 average daily flow of 230 for 2035.
- (7) 2022 average flow at plant from 2022 rate study data.

Orange County Sanitation District - 2022
 Exhibit 8
 Development of Capital Improvement Plan

#	Project Type	Function	Ten Year CIP Total	%			\$				
				Eligible	\$ Eligible	FLOW	BOD	TSS	FLOW	BOD	TSS
64	FE21-06 Chemical Dosing Station Installation at Westside Pump Station	Interplant	508,441	100.0%	508,441	40%	33%	27%	205,549	167,836	135,056
65	IT16-09 iPACS Enhancements	Collection	56,275	100.0%	56,275	90%	10%	0%	50,648	5,628	0
66	IT18-09 Records Management Information System	Collection	0	100.0%	0	90%	10%	0%	0	0	0
67	IT19-01 IT Safety VPP Systems (IT19-01)	Collection	0	100.0%	0	90%	10%	0%	0	0	0
68	IT19-05 IT P1 & P2 Data Refresh (IT19-05)	Collection	1,070,000	100.0%	1,070,000	90%	10%	0%	963,000	107,000	0
69	IT20-05 Client Management Modernization (ICE-69_IT20-05) 6520005	Collection	71,603	100.0%	71,603	90%	10%	0%	64,443	7,160	0
70	IT20-06 Nintex Workflow Cloud Implementation (ICE-75_IT20-06) 6520006	Collection	0	100.0%	0	90%	10%	0%	0	0	0
71	IT20-07 Professional Services for Valo/SharePoint (ICE-74_IT20-07) 6520007	Collection	27,835	100.0%	27,835	90%	10%	0%	25,052	2,784	0
72	IT20-08 Field Computer for Nerissa and Interface with LIMS(ICE-68_IT20-07) 6520008	Collection	77,822	100.0%	77,822	90%	10%	0%	70,040	7,782	0
73	IT20-09 ITSM Migration (ICE-70_IT20-09) 6520009	Collection	0	100.0%	0	90%	10%	0%	0	0	0
74	IT20-10 Digitize Quality Assurance Tracking Processes /TNI/ELAP Standards(ICE-76_IT20-10) 6520010	Collection	89,317	100.0%	89,317	90%	10%	0%	80,385	8,932	0
75	IT20-12 Web-based Cloud Proxy Security with an Isolation Platform (ICE-78_6520012)	Collection	0	100.0%	0	90%	10%	0%	0	0	0
76	IT21-01 Access Network Equipment Obsolescence Replacement (ICE-79_IT21-01) 6521001	Collection	1,009,193	100.0%	1,009,193	90%	10%	0%	908,274	100,919	0
77	IT21-02 Hyper Converged Infrastructure for Plant 1 ICS network (ICE-80 IT21-02) 6521002	Collection	139,321	100.0%	139,321	90%	10%	0%	125,389	13,932	0
78	IT21-03 Door Access Control System for P2 Construction Management Trailers (ICE-83_IT21-036521003	Collection	0	100.0%	0	90%	10%	0%	0	0	0
79	IT21-04 Databridge Scale Management Software (ICE - 84_IT21-04)	Collection	35,946	100.0%	35,946	90%	10%	0%	32,351	3,595	0
80	IT21-05 JD Edwards Server Migration and Upgrade (ICE - 86_IT21-05)	Collection	68,628	100.0%	68,628	90%	10%	0%	61,765	6,863	0
81	IT21-06 Dig-Smart Fusion (ICE - 89_I6521006_T21-06)	Collection	0	100.0%	0	90%	10%	0%	0	0	0
82	IT21-07 Advanced Email Security (ICE - 90_I6521007_T21-07)	Collection	0	100.0%	0	90%	10%	0%	0	0	0
83	J-117B Outfall Low Flow Pump Station	Effluent Disposal	51,164,677	100.0%	51,164,677	100%	0%	0%	51,164,677	0	0
84	J-120 Process Control Systems Upgrades	Interplant	30,790,276	100.0%	30,790,276	40%	33%	27%	12,447,690	10,163,852	8,178,733
85	J-120A Control Room Reconfiguration at Plant No. 1 and Plant No. 2	Interplant	3,765,593	100.0%	3,765,593	40%	33%	27%	1,522,329	1,243,020	1,000,244
86	J-124 Digester Gas Facilities Replacement	Digestion	156,948,308	100.0%	156,948,308	0%	25%	75%	0	39,237,077	117,711,231
87	J-127 Natural Gas Pipelines Replacement at Plant Nos. 1 and 2	Interplant	78,826	100.0%	78,826	40%	33%	27%	31,867	26,021	20,938
88	J-128 Project Management Information System	Collection	670,937	100.0%	670,937	90%	10%	0%	603,843	67,094	0
89	J-133 Laboratory Rehabilitation/Replacement at Plant No 1	Interplant	100,000,000	100.0%	100,000,000	40%	33%	27%	40,427,342	33,009,942	26,562,716
90	J-135 Central Generation Engine Overhauls at Plant No. 1 and 2	Interplant	14,874,635	100.0%	14,874,635	40%	33%	27%	6,013,420	4,910,109	3,951,107
91	J-135A Central Generation Engine Overhaul at Plant No. 1	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
92	J-135B Engine and Generator Overhauls at Plant No. 1 and 2	Interplant	24,000,000	100.0%	24,000,000	40%	33%	27%	9,702,562	7,922,386	6,375,052
93	J-136 Power Building Structural Seismic Improvements at Plant No. 1 and 2	Interplant	5,364,280	100.0%	5,364,280	40%	33%	27%	2,168,636	1,770,746	1,424,898
94	J-137 120-inch Ocean Outfall Rehabilitation	Effluent Disposal	64,968,000	100.0%	64,968,000	100%	0%	0%	64,968,000	0	0
95	J-36-2 GWRS Final Expansion Coordination	Interplant	272,061	100.0%	272,061	40%	33%	27%	109,987	89,807	72,267
96	J-98 Electrical Power Distribution System Improvements	Collection	24,291,686	100.0%	24,291,686	90%	10%	0%	21,862,518	2,429,169	0
97	M-FE Small Construction Projects Program	Collection	24,290,374	100.0%	24,290,374	90%	10%	0%	21,861,337	2,429,037	0
98	M-MC-IT Information Technology Capital Program	Collection	4,318,329	100.0%	4,318,329	90%	10%	0%	3,886,496	431,833	0
99	M-RESEARCH Research Program	Collection	2,089,746	100.0%	2,089,746	90%	10%	0%	1,880,772	208,975	0
100	M-SM-CAP Operations & Maintenance Capital Program	Collection	10,303,912	100.0%	10,303,912	90%	10%	0%	9,273,520	1,030,391	0
101	M-STUDIES Planning Studies Program	Collection	14,847,718	100.0%	14,847,718	90%	10%	0%	13,362,946	1,484,772	0
102	P1-101 Sludge Dewatering and Odor Control at Plant 1	Sludge Thickening	0	100.0%	0	0%	25%	75%	0	0	0
103	P1-105 Headworks Rehabilitation at Plant 1	Headworks	260,827,359	100.0%	260,827,359	75%	5%	20%	195,620,519	13,041,368	52,165,472
104	P1-126 Primary Sedimentation Basins No. 3-5 Replacement at Plant No. 1	Primary Sedimentation	168,628,090	100.0%	168,628,090	0%	30%	70%	0	50,588,427	118,039,663
105	P1-127 Central Generation Rehabilitation at Plant No. 1	Interplant	21,884,242	100.0%	21,884,242	40%	33%	27%	8,847,217	7,223,976	5,813,049
106	P1-128A Headquarters Complex at Plant No. 1	Interplant	85,125,871	100.0%	85,125,871	40%	33%	27%	34,414,127	28,100,001	22,611,743
107	P1-129 Return Activated Sludge Piping Replacement at Activated Sludge Plant No. 1	Activated Sludge Process	0	100.0%	0	0%	100%	0%	0	0	0
108	P1-132 Uninterruptible Power Supply Improvements at Plant 1	Interplant	5,605,952	100.0%	5,605,952	40%	33%	27%	2,266,337	1,850,521	1,489,093
109	P1-133 Primary Sedimentation Basins No. 6-31 Reliability Improvements at Plant No. 1	Primary Sedimentation	11,479,256	100.0%	11,479,256	0%	30%	70%	0	3,443,777	8,035,479
110	P1-134 South Perimeter Security and Utility Improvements at Plant No.1	Interplant	4,134,215	100.0%	4,134,215	40%	33%	27%	1,671,353	1,364,702	1,098,160
111	P1-135 Digester Ferric Chloride Piping Replacement at Plant No. 1	Digestion	215,671	100.0%	215,671	0%	25%	75%	0	53,918	161,753
112	P1-136 12.47 kV Switchgear Replacement at Central Generation at Plant No. 1	Interplant	12,958,000	100.0%	12,958,000	40%	33%	27%	5,238,575	4,277,428	3,441,997
113	P1-137 Supports Buildings Seismic Improvements at Plant No. 1	Interplant	23,643,235	100.0%	23,643,235	40%	33%	27%	9,558,331	7,804,618	6,280,285
114	P1-138 Industrial Control System and IT Data Center Relocation at Plant No. 1	Interplant	5,700,000	100.0%	5,700,000	40%	33%	27%	2,304,358	1,881,567	1,514,075
115	P1-140 Activated Sludge-1 and Secondary Clarifier Rehabilitation	Activated Sludge Process	261,152,452	100.0%	261,152,452	0%	100%	0%	0	261,152,452	0
116	P1-141 Administrative Facilities and Power Building 3A Demolition	Collection	8,910,000	100.0%	8,910,000	90%	10%	0%	8,019,000	891,000	0
117	P2-119 Central Generation Rehabilitation at Plant No. 2	Interplant	36,690,396	100.0%	36,690,396	40%	33%	27%	14,832,952	12,111,479	9,745,966
118	P2-122 Headworks Modifications at Plant No. 2 for GWRS Final Expansion	Headworks	5,895,763	100.0%	5,895,763	75%	5%	20%	4,421,822	294,788	1,179,153
119	P2-123 Return Activated Sludge Piping Replacement at Plant 2	Activated Sludge Process	1,330,642	100.0%	1,330,642	0%	100%	0%	0	1,330,642	0
120	P2-124 Interim Food Waste Receiving Facility	Collection	4,948,534	100.0%	4,948,534	90%	10%	0%	4,453,681	494,853	0
121	P2-127 Collections Yard Relocation	Collection	1,843,092	100.0%	1,843,092	90%	10%	0%	1,658,782	184,309	0
122	P2-128 TPAD Digester Facility at Plant No.2	Digestion	376,282,135	100.0%	376,282,135	0%	25%	75%	0	94,070,534	282,211,601
123	P2-128A TPAD Perimeter Wall	Interplant	53,200,000	100.0%	53,200,000	40%	33%	27%	21,507,346	17,561,289	14,131,365
124	P2-129 Digester P, Q, R, and S Replacement	Digestion	59,400,030	100.0%	59,400,030	0%	25%	75%	0	14,850,007	44,550,022
125	P2-133 B/C-Side Primary Sedimentation Basins Rehabilitation at Plant No. 2	Primary Sedimentation	15,839,853	100.0%	15,839,853	0%	30%	70%	0	4,751,956	11,087,897
126	P2-135 Sodium Bisulfite Station Rehabilitation at Plant No. 2	Interplant	4,959,808	100.0%	4,959,808	40%	33%	27%	2,005,118	1,637,230	1,317,460

Orange County Sanitation District - 2022
 Exhibit 8
 Development of Capital Improvement Plan

#	Project Type	Function	Ten Year CIP Total	%			\$				
				Eligible	\$ Eligible	FLOW	BOD	TSS	FLOW	BOD	TSS
127	P2-136 Activated Sludge Aeration Basin Rehabilitation at Plant No. 2	Activated Sludge Process	65,538,625	100.0%	65,538,625	0%	100%	0%	0	65,538,625	0
128	P2-137 Digesters Rehabilitation at Plant No. 2	Digestion	40,374,156	100.0%	40,374,156	0%	25%	75%	0	10,093,539	30,280,617
129	P2-138 Operations and Maintenance Complex at Plant No. 2	Collection	83,798,943	100.0%	83,798,943	90%	10%	0%	75,419,049	8,379,894	0
130	P2-139 Emergency Overflow Wingwalls Rehabilitation at Plant No. 2	Interplant	4,370,000	100.0%	4,370,000	40%	33%	27%	1,766,675	1,442,534	1,160,791
131	P2-140 Truck Loading Bay Odor Control Improvements at Plant No. 2	Interplant	7,600,000	100.0%	7,600,000	40%	33%	27%	3,072,478	2,508,756	2,018,766
132	P2-98A A-Side Primary Clarifiers Replacement at Plant 2	Primary Sedimentation	133,766,315	100.0%	133,766,315	0%	30%	70%	0	40,129,895	93,636,421
133	P2-98B B/C-Side Primary Clarifiers Interim Repair at Plant 2	Primary Sedimentation	0	100.0%	0	0%	30%	70%	0	0	0
134	PS17-03 Active Fault Location Study at Plant No. 2	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
135	PS18-06 Go/No-Go Lights and Signage	Collection	99,262	100.0%	99,262	90%	10%	0%	89,336	9,926	0
136	PS18-09 Ocean Outfall Condition Assessment and Scoping Study	Effluent Disposal	55,300	100.0%	55,300	100%	0%	0%	55,300	0	0
137	PS19-03 Laboratory Rehabilitation Feasibility Study	Collection	12,593	100.0%	12,593	90%	10%	0%	11,333	1,259	0
138	PS20-01 Collections Yard Relocation Feasibility Study	Collection	69,513	100.0%	69,513	90%	10%	0%	62,562	6,951	0
139	PS20-02 Collection System Flow Level Monitoring Study	Collection	620,246	100.0%	620,246	90%	10%	0%	558,222	62,025	0
140	PS20-03 Truck Loading Bay Odor Control Improvements Study at Plant No. 2	Interplant	160,469	100.0%	160,469	40%	33%	27%	64,873	52,971	42,625
141	PS20-04 Power Generation Overhaul Feasibility Study	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
142	PS20-05 Cen Gen Pressure Vessel Integrity Assessment at Plant Nos. 1and 2	Interplant	233,863	100.0%	233,863	40%	33%	27%	94,545	77,198	62,120
143	PS20-07 College Pump Station Wet Well Condition Assessment Study	Collection	67,425	100.0%	67,425	90%	10%	0%	60,682	6,742	0
144	PS20-08 Euclid Trunk Sewer Hydraulic Modeling and Odor Control Analyses	Collection	205,952	100.0%	205,952	90%	10%	0%	185,357	20,595	0
145	PS20-09 Thickening & Dewatering Plant Water Study at Plant No. 1	Sludge Thickening	328,511	100.0%	328,511	0%	25%	75%	0	82,128	246,383
146	PS21-01 Exterior Lighting Study at Plant Nos. 1 and 2	Interplant	523,744	100.0%	523,744	40%	33%	27%	211,736	172,887	139,121
147	PS21-02 Public Announcement and Fire System at Plant Nos. 1 and 2	Interplant	458,614	100.0%	458,614	40%	33%	27%	185,405	151,388	121,820
148	PS21-03 Process Model for Denitrification Alternatives at Activated Sludge 1	Activated Sludge Process	9,698	100.0%	9,698	0%	100%	0%	0	9,698	0
149	PS21-04 Energy and Digester Gas Master Plan	Interplant	1,068,462	100.0%	1,068,462	40%	33%	27%	431,951	352,699	283,812
150	PS21-05 CAD Design Manual Update for 3D Design	Collection	678,763	100.0%	678,763	90%	10%	0%	610,887	67,876	0
151	PS21-06 Regional Urban Runoff Optimization Study	Collection	968,330	100.0%	968,330	90%	10%	0%	871,497	96,833	0
152	RE19-01 Primary Scum Equipment Evaluation at Plant No. 1	Sludge Thickening	15,405	100.0%	15,405	0%	25%	75%	0	3,851	11,553
153	RE20-01 Co-Thickened Sludge Density Meter Trial at Plant No. 1	Sludge Thickening	1,931	100.0%	1,931	0%	25%	75%	0	483	1,449
154	RE20-02 Chemical Resilience Study at Plant No.1 and 2	Interplant	22,396	100.0%	22,396	40%	33%	27%	9,054	7,393	5,949
155	RE20-04 Holding Digester 6 Solids Shredder Study at Plant No. 1	Digestion	17,649	100.0%	17,649	0%	25%	75%	0	4,412	13,237
156	RE20-06 Co-Thickened Sludge Pump Trial at Plant No. 1	Sludge Thickening	15,000	100.0%	15,000	0%	25%	75%	0	3,750	11,250
157	RE21-01 Supercritical Water Oxidation Demonstration at Plant No. 1	Interplant	6,873,109	100.0%	6,873,109	40%	33%	27%	2,778,615	2,268,809	1,825,684
158	SC18-05 P1 Laboratory HVAC Boiler Burner Replacement At Plant No.1	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
159	SC19-03 Return Activated Sludge Pump Station Elevator Rehabilitation at Plant No. 2	Activated Sludge Process	362,992	100.0%	362,992	0%	100%	0%	0	362,992	0
160	SC19-06 EPSA Standby Power Generator Control Upgrades at Plant No. 2	Interplant	3,427,847	100.0%	3,427,847	40%	33%	27%	1,385,787	1,131,530	910,529
161	SC20-02 Ocean Outfall Booster Station Elevator Rehabilitation	Effluent Disposal	381,819	100.0%	381,819	100%	0%	0%	381,819	0	0
162	SP-100 EAM Software and Process Implementation	Collection	2,544,488	100.0%	2,544,488	90%	10%	0%	2,290,039	254,449	0
163	SP-195 Capital Improvement Program Management Services	Collection	324,865	100.0%	324,865	90%	10%	0%	292,379	32,487	0
164	X-006 Waste Sidestream Pump Station Rehabilitation at Plant No. 1	Interplant	17,287,000	100.0%	17,287,000	40%	33%	27%	6,988,675	5,706,429	4,591,897
165	X-007 Waste Sidestream Pump Station 2A Upgrade at Plant No. 2	Interplant	9,690,000	100.0%	9,690,000	40%	33%	27%	3,917,409	3,198,663	2,573,927
166	X-014 Trickling Filter Solids Contact Basins Odor Control at Plant No. 2	Trickling Filters	117,817	100.0%	117,817	0%	100%	0%	0	117,817	0
167	X-015 Trickling Filters Rehabilitation at Plant No. 1	Trickling Filters	5,816,795	100.0%	5,816,795	0%	100%	0%	0	5,816,795	0
168	X-017 Primary Sedimentation Basins No. 6-31 Rehabilitation at Plant No. 1	Primary Sedimentation	0	100.0%	0	0%	30%	70%	0	0	0
169	X-018 Activated Sludge - 2 Rehabilitation at Plant No. 1	Activated Sludge Process	0	100.0%	0	0%	100%	0%	0	0	0
170	X-022 15th Street Pump Station and Force Main Rehabilitation	Collection	0	100.0%	0	90%	10%	0%	0	0	0
171	X-023 Lido Pump Station Rehabilitation	Collection	9,847,291	100.0%	9,847,291	90%	10%	0%	8,862,562	984,729	0
172	X-024 Rocky Point Pump Station Rehabilitation	Collection	82,553	100.0%	82,553	90%	10%	0%	74,298	8,255	0
173	X-025 Bitter Point Pump Station Rehabilitation	Collection	365,469	100.0%	365,469	90%	10%	0%	328,922	36,547	0
174	X-030 Headworks Rehabilitation at Plant 2	Headworks	5,275,748	100.0%	5,275,748	75%	5%	20%	3,956,811	263,787	1,055,150
175	X-031 Trickling Filter Solids Contact Facility Rehabilitation at Plant No. 2	Trickling Filters	0	100.0%	0	0%	100%	0%	0	0	0
176	X-036 City Water Pump Station Rehabilitation at Plant No. 2	Interplant	13,440,000	100.0%	13,440,000	40%	33%	27%	5,433,435	4,436,536	3,570,029
177	X-037 Plant Water Pump Station and 12 KV Distribution Center A Demolition at Plant No. 2	Interplant	3,509,000	100.0%	3,509,000	40%	33%	27%	1,418,595	1,158,319	932,086
178	X-038 City Water Pump Station Rehabilitation at Plant No. 1	Interplant	7,291,736	100.0%	7,291,736	40%	33%	27%	2,947,855	2,406,998	1,936,883
179	X-039 Plant Water Pump Station Rehabilitation at Plant No. 1	Interplant	10,561,000	100.0%	10,561,000	40%	33%	27%	4,269,532	3,486,180	2,805,288
180	X-040 College Pump Station Replacement and Force Main Rehabilitation	Collection	1,424,214	100.0%	1,424,214	90%	10%	0%	1,281,792	142,421	0
181	X-041 A Street Pump Station and Force Main Rehabilitation	Collection	0	100.0%	0	90%	10%	0%	0	0	0
182	X-044 Steve Anderson Lift Station Rehabilitation	Collection	0	100.0%	0	90%	10%	0%	0	0	0
183	X-052 Activated Sludge RAS/WAS/PEPS/Vaporizers Rehabilitation at Plant No. 2	Activated Sludge Process	33,735,521	100.0%	33,735,521	0%	100%	0%	0	33,735,521	0
184	X-059 Plantwide Miscellaneous Tunnels Rehabilitation	Interplant	29,350,713	100.0%	29,350,713	40%	33%	27%	11,865,713	9,688,653	7,796,347
185	X-061 Imperial Relief Interceptor / Miller Holder Trunk Rehabilitation	Collection	0	100.0%	0	90%	10%	0%	0	0	0
186	X-065 Tustin-Orange Interceptor Rehabilitation	Collection	0	100.0%	0	90%	10%	0%	0	0	0
187	X-066 Tustin-Orange Interceptor / Orange Park Acres Trunk Rehabilitation	Collection	935,465	100.0%	935,465	90%	10%	0%	841,918	93,546	0
188	X-068 North Trunk - Panorama Heights - Tustin-Orange Rehabilitation	Collection	9,624,000	100.0%	9,624,000	90%	10%	0%	8,661,600	962,400	0
189	X-071 Bolsa Chica / Edinger / Springdale Trunk Sewer Rehabilitation	Collection	16,973,000	100.0%	16,973,000	90%	10%	0%	15,275,700	1,697,300	0

Orange County Sanitation District - 2022
 Exhibit 8
 Development of Capital Improvement Plan

#	Project Type	Function	Ten Year CIP Total	%			\$				
				Eligible	\$ Eligible	FLOW	BOD	TSS	FLOW	BOD	TSS
190	X-078 Air Jumpers Additions/Rehabilitations	Collection	13,815,651	100.0%	13,815,651	90%	10%	0%	12,434,086	1,381,565	0
191	X-084 Tustin Avenue Sewer Improvements	Collection	212,056	100.0%	212,056	90%	10%	0%	190,850	21,206	0
192	X-085 Hoover-Western Sub-Trunk and Lampson Branch Improvements	Collection	23,846,588	100.0%	23,846,588	90%	10%	0%	21,461,929	2,384,659	0
193	X-086 Santa Ana River Interceptor Improvements	Collection	0	100.0%	0	90%	10%	0%	0	0	0
194	X-095 Southern California Edison Substation and Service Center Replacement at Plant 2	Collection	5,441,800	100.0%	5,441,800	90%	10%	0%	4,897,620	544,180	0
195	X-096 Bushard Diversion Structure Improvements	Headworks	4,722,000	100.0%	4,722,000	75%	5%	20%	3,541,500	236,100	944,400
196	X-098 Effluent Pump Station Annex Rehabilitation	Effluent Disposal	4,485,679	100.0%	4,485,679	100%	0%	0%	4,485,679	0	0
197	X-100 Flood Wall along Brookhurst Street	Collection	5,748,938	100.0%	5,748,938	90%	10%	0%	5,174,044	574,894	0
198	X-102 Wastehauler Facility Improvements	Interplant	1,304,362	100.0%	1,304,362	40%	33%	27%	527,319	430,569	346,474
199	X-104 Central Generation Facilities and Power Bldg. 2 Seismic Upgrades	Interplant	28,214,000	100.0%	28,214,000	40%	33%	27%	11,406,170	9,313,425	7,494,405
200	X-105 OOBs Seismic Improvements at Plant No. 2	Interplant	24,913,000	100.0%	24,913,000	40%	33%	27%	10,071,664	8,223,767	6,617,569
201	X-107 DAFTs Seismic Improvements at Plant No. 2	Interplant	389,911	100.0%	389,911	40%	33%	27%	157,631	128,709	103,571
202	X-108 Lateral Spreading Mitigation at Plant No. 2	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
203	X-109 Lateral Spreading Mitigation at Plant No. 1	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
204	X-110 Solids Processing Facilities Seismic Improvements at Plant No. 1	Solids Handling	657,144	100.0%	657,144	0%	25%	75%	0	164,286	492,858
205	X-112 Southwest Corner Stormwater Drainage Modifications at Plant No. 1	Collection	855,832	100.0%	855,832	90%	10%	0%	770,249	85,583	0
206	X-114 Activated Sludge Facility Replacement at Plant No. 2	Activated Sludge Process	0	100.0%	0	0%	100%	0%	0	0	0
207	X-115 Short Outfall Rehabilitation at Plant No. 2	Effluent Disposal	5,712,326	100.0%	5,712,326	100%	0%	0%	5,712,326	0	0
208	X-116 Outfall Land Section Rehabilitation at Plant No. 2	Effluent Disposal	0	100.0%	0	100%	0%	0%	0	0	0
209	X-118 84-inch Interplant Pipeline Rehabilitation at Plant 1	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
210	X-119 Thickening, Dewatering and Truck Loadout Rehabilitation at Plant 1	Sludge Thickening	0	100.0%	0	0%	25%	75%	0	0	0
211	X-120 Digester Rehabilitation/Replacement at Plant 1	Digestion	0	100.0%	0	0%	25%	75%	0	0	0
212	X-121 Lido Pump Station Replacement	Collection	0	100.0%	0	90%	10%	0%	0	0	0
213	X-122 MacArthur Pump Station Replacement Project	Collection	0	100.0%	0	90%	10%	0%	0	0	0
214	X-124 Electric Vehicle Fleet Services Building	Collection	12,481,000	100.0%	12,481,000	90%	10%	0%	11,232,900	1,248,100	0
215	X-125 66-inch Interplant Pipeline Rehabilitation at Plant 1	Interplant	6,841,000	100.0%	6,841,000	40%	33%	27%	2,765,635	2,258,210	1,817,155
216	X-126 Lake Ave and Atlanta Int Rehabilitation	Collection	8,959,000	100.0%	8,959,000	90%	10%	0%	8,063,100	895,900	0
217	X2-72 Contingency Reserve for 2-72	Collection	10,000,000	100.0%	10,000,000	90%	10%	0%	9,000,000	1,000,000	0
218	X2-79 Fullerton-Brea Int and Rollings Hills Dr Subtrunk Rehabilitation	Collection	13,300,000	100.0%	13,300,000	90%	10%	0%	11,970,000	1,330,000	0
219	XP2-130 Food Waste Receiving Facility at Plant No. 2	Interplant	0	100.0%	0	40%	33%	27%	0	0	0
220	XP2-131 Digester I, J, and K Replacement at Plant No. 2	Digestion	8,779,838	100.0%	8,779,838	0%	25%	75%	0	2,194,959	6,584,878
221	XP2-132 Digester Demolition at Plant No. 2	Digestion	0	100.0%	0	0%	25%	75%	0	0	0
	Actual	Collection	203,320,511	100.0%	203,320,511	90%	10%	0%	182,988,460	20,332,051	0
Total			\$3,617,505,992		\$3,617,505,992				\$1,689,310,256	\$984,761,980	\$943,433,755

CATEGORY	Ten Year CIP Total	\$ Eligible	%		
			FLOW	BOD	TSS
Collection	\$1,221,084,006	\$1,221,084,006	\$1,098,975,606	\$122,108,401	\$0
Interplant	633,270,255	633,270,255	256,014,334	209,042,144	168,213,778
Headworks	276,736,688	276,736,688	207,552,516	13,836,834	55,347,338
Primary Sedimentation	329,713,515	329,713,515	0	98,914,054	230,799,460
Activated Sludge Process	366,654,019	366,654,019	0	366,654,019	0
Oxygen Activated Sludge Process	0	0	0	0	0
Blower Equipment and Structures	0	0	0	0	0
Aeration Equipment and Structures	0	0	0	0	0
Trickling Filters	8,619,756	8,619,756	0	8,619,756	0
Secondary Sedimentation	4,270,630	4,270,630	0	2,989,441	1,281,189
Sludge Thickening	1,997,545	1,997,545	0	499,386	1,498,159
Digestion	647,734,632	647,734,632	0	161,933,658	485,800,974
Solids Handling	657,144	657,144	0	164,286	492,858
Solids Disposal	0	0	0	0	0
Effluent Disposal	126,767,802	126,767,802	126,767,802	0	0
Unallocated	0	0	0	0	0
As All Others	0	0	0	0	0
TOTAL	\$3,617,505,992	\$3,617,505,992	\$1,689,310,256	\$984,761,980	\$943,433,755